

# Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA – 176215, HIMACHAL PRADESH

## UNIVERSITY'S COURSE OFFERING

**Spring Semester  
(Jan – July 2014)**



**For More Details: Log on to [www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)**

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# School of Business & Management Studies

## Courses offered in SBMS

### School of Business & Management Studies

Name of the Programme of Study: MBA

#### Courses for Semester 2

##### Group A (ACCOUNTING & FINANCE)

Credits: 6

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	AFA 527	Strategic Financial Management*	2	NA	Dr. Mohinder Singh Dr. Ashish Nag Dr. Manpreet
2	AFA 411	Management of Financial Institutions	2	NA	Dr. Manpreet
3	AFA 402	Fundamentals of Financial Services	2	NA	Dr. Ashish Nag
4	AFA 498	Viva Voce in Accounting and Finance*	2	NA	

##### Group B (Marketing & Supply Chain Mgt.)

Credits: 6

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	MSC-506	Consumer Behaviour *	2	NA	Dr. Bhagwan Singh Dr. Sarvesh Kumar
2	MSC 440	Retail Management	2	NA	Mr. Chaman Kashyap
3	MSC 498	Oral Comprehension in Marketing *	2	NA	

\* Compulsory Course

##### Group C (HRM & OB)

Credits: 6

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	HRM 402	Human Resource Management*	2	NA	Dr. Aditi Sharma Dr. Gitanjali Upadhya Dr. Bhawna Bhardwaj
2	HRM 507	Conflict Management & Negotiation Skills	2	NA	Dr. Bhawna Bhardwaj
3	HRM-409	Leadership Concept And Theories	2	NA	Dr. Gitanjali Upadhya
4	HRM 498	Oral Comprehension in HRM*	2	NA	

**Group D (EDM)****Credits: 6**

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	EDM 405	Management of MSME	2	NA	Mr. Chaman Kashyap
2	EDM 406	Managing Creativity Innovation and Incubation	2	NA	Mr. Chaman Kashyap
3	EDM-403	Success Stories Of Entrepreneurs & Managers	2	NA	Dr. Sanjeev Gupta

**School Wide Courses****Credits: 6**

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	POM-401	Operations Management*	2	NA	Dr. Sanjeev Gupta Dr. Sarvesh Kumar
2	HRM 402	Human Resource Management	2	NA	Dr. Aditi Sharma Dr. Gitanjali Upadhya Dr. Bhawna Bhardwaj
3	AFA-527	Strategic Financial Management	2	NA	Dr. Mohinder Singh Dr. Ashish Nag Dr. Manpreet
4	MSC-506	Consumer Behaviour	2	NA	Dr. Bhagwan Singh Dr. Sarvesh Kumar
5	EDM 405	Management of MSME	2	NA	Mr. Chaman Kashyap

**\* Compulsory Course****Courses for Semester 4****Group A (ACCOUNTING & FINANCE)****Credits: 8**

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	AFA-532	Foreign Exchange Risk Management	2	NA	Dr. Mohinder Singh
2	AFA 524	Options, Futures and other Derivatives	2	NA	Dr. Ashish Nag
3	AFA 508	Mergers and Acquisitions	2	NA	Dr. Manpreet
4	AFA 511	Financial Engineering	2	NA	Mr. M. AtiF
6	AFA 499	Project Work in Finance*	2	NA	

**Group B (Marketing & Supply Chain Mgt.)****Credits: 8**

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	MSC - 502	Marketing Research	2	NA	Dr. Sarvesh Kumar
2	MSC-422	Global SCM and International Logistics	2	NA	Dr. Sarvesh Kumar
3	MSC -514	Sales and Distribution Management	2	NA	Mr. Chaman Kashyap
4	MSC-522	Web- Based Advertising	2	NA	Dr. Bhagwan Singh
5			2	NA	
6	MSC- 499	Project Work in Marketing and Supply Chain Management*	2	NA	

**Group C (HRM & OB)****Credits: 8**

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	HRM-409	Leadership Concepts and Theories	2	NA	Dr. Gitanjali Upadhya
2	HRM-512	Industrial Psychology	2	NA	Dr. Gitanjali Upadhya
3	HRM- 515	International Human Resource Management	2	NA	Dr. Bhawna Bhardwaj
4	HRM -525	Organizational Transformation and Development	2	NA	Dr. Aditi Sharma Dr. Bhawna Bhardwaj
5	HRM -509	Performance Management – System and Strategies	2	NA	Dr. Aditi Sharma
6	HRM 499	Project work *	2	NA	

**\* Compulsory Course****School Wide Courses****Credits: 8**

S. No	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	POM-504	Operations Research*	2	NA	Dr. Sanjeev Gupta Mr. M. AtiF
2	MSO 598	Comprehensive Viva-Voce*	2	NA	
3	HRM-409	Leadership Concepts and Theories	2	NA	Dr. Gitanjali Upadhya
4	HRM-512	Industrial Psychology	2	NA	Dr. Gitanjali Upadhya
5	HRM- 515	International Human Resource Management	2	NA	Dr. Bhawna Bhardwaj

6	HRM -525	Organizational Transformation and Development	2	NA	Dr. Aditi Sharma Dr. Bhawna Bhardwaj
7	HRM -509	Performance Management – System and Strategies	2	NA	Dr. Aditi Sharma
8	AFA-532	Foreign Exchange Risk Management	2	NA	Dr. Sanjeev Gupta
9	AFA 524	Options, Futures and other Derivatives	2	NA	Dr. Ashish Nag
10	AFA 508	Mergers and Acquisitions	2	NA	Dr. Manpreet
11	AFA 434	Corporate Taxation	2	NA	Dr. Mohinder Singh
12	AFA-532	Foreign Exchange Risk Management	2	NA	Dr. Sanjeev Gupta
13	MSC - 502	Marketing Research	2	NA	Dr. Sarvesh Kumar
14	MSC-422	Global SCM and International Logistics	2	NA	Dr. Sarvesh Kumar
15	MSC -514	Sales and Distribution Management	2	NA	Mr. Chaman Kashyap
16	MSC-522	Web- Based Advertising	2	NA	Dr. Bhagwan Singh

**\* Compulsory Course**

**University Wide Courses**

S. No.	Course Code	Course Name	Credit	Pre-Requisite/ Co-Requisite	Name of faculty
1	AFA-429	Financial Economics	2	NA	Dr. Mohinder Singh
2	MIB-405	International Finance	2	NA	Dr. Mohinder Singh
3	AFA-533	Economic Forecasting and Applications	2	NA	Dr. Sanjeev Gupta
4	AFA-527	Strategic Financial Management	2	NA	Dr. Mohinder Singh Dr. Ashish Nag Dr. Manpreet
5	MSC-509	Green Marketing	2	NA	Dr. Sarvesh Kumar
6	MSC-420	Internet Based Marketing	2	NA	Dr. Bhagwan Singh
7	MSC-422	Global Supply Chain Management and International logistics	2	NA	Dr. Sarvesh Kumar
8	HRM-402	Human Resource Management	2	NA	Dr. Aditi Sharma Dr. Gitanjali Upadhya Dr. BhawnaBhardwaj
9	HRM-409	Leadership Concepts and Theories	2	NA	Dr. Gitanjali Upadhya

10	HRM-411	Diversity and Cross Cultural Management	2	NA	Dr. Aditi Sharma
11	HRM-509	Performance Management – System and Strategies	2	NA	Dr. Aditi Sharma
12	AFA-532	Foreign Exchange Risk Management	2	NA	Dr. Sanjeev Gupta
13	MIB-411	International Business Environment	2	NA	Dr. Manpreet
14	CSR-401	Human Values and Ethics	2	NA	Dr. Aditi Sharma Dr. Gitanjali Upadhya
15	MSC-401	Marketing Management	2	NA	
16	MSC-506	Consumer Behaviour	2	NA	Dr. Bhagwan Singh Dr. Sarvesh Kumar Mr. Ajay Kumar
17	MSC- 440	Retail Management	2	NA	Mr. Chaman Kashyap
18	AFA- 411	Management of Financial Institutions	2	NA	Dr. Manpreet
19	AFA- 402	Fundamentals of Financial Services	2	NA	Dr. Ashish Nag
20	MSC-522	Web- Based Advertising	2	NA	Dr. Bhagwan Singh
21	HRM-512	Industrial Psychology	2	NA	Dr. Gitanjali Upadhya
22	SWR 405	Basics of Research Methodology	2	NA	Prof. Arvind Agrawal Dr. Mohinder Singh Dr. Manpreet

## Strategic Financial Management

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**Course Code:** AFA 527

**Course Name:** Strategic Financial Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Help students in understanding Basic concepts of financial management.
- Help students appreciate the logic for making better financial decisions.
- It is also aimed at helping student to understand the application of financial management theories in practice.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 5%
  - Quizzes/Games/Puzzles: 5%
  - Personality Assessment: 5%
  - Live Projects: 5%

**Course Contents:**

**UNIT - I:      An overview of Strategic Financial Management      (3 Hours)**

- Meaning and definition of strategic financial management, Characteristics, scope and importance of strategic financial management.
- Introduction to Financial Management, Meaning of Financial Management, Evolution of Financial Management, Scope of Financial Management
- Objectives of Financial Management, Financial Goal: Profit Versus Wealth Maximization, Finance Functions, Financial Decisions
- Interrelationship between Financial Management and other functional areas of business, Functions /Role of Finance Manager in the Changing Scenario, Risk-Return Trade-off, **Discussion on BHEL's Mission and Objectives**

**UNIT - II:      Time Value of Money      (5 Hours)**

- Concept of Time Value of Money, Technique of Time Value of Money, Compounding Technique
- Doubling Period, Effective Rate of Interest, Future Value of Series of Payments
- Future Value of an Annuity, Compound Value of an Annuity Due
- Discounting or Present Value Technique, Present Value of a Series of Payments, Present Value of an Annuity
- Practical Applications of Time Value Techniques, Valuation of Bonds and Stocks

**UNIT - III:      Investment Decisions      (4 Hours)**

- Nature of Fixed Assets, Meaning of Capital Budgeting, Importance of Capital Budgeting, Difficulties in Capital Budgeting, Investment Evaluation Criteria
- Investment Evaluation Criteria: Traditional Techniques: Pay Back Period, ARR
- Modern Techniques: NPV, IRR and PI, Compare and Contrast NPV with IRR
- Working Capital Management: Cash, Receivables and Inventory, **Case: National Foods Corporation**

**UNIT - IV:      Cost of Capital, Leverages and Capital Structure      (5 Hours)**

- Sources of Finance, Classification of Sources of Finance, Meaning, Concept and Definition of Cost of Capital, Significance of Cost of Capital
- Classification of Cost, Computation of Cost of Capital, Weighted Average Cost of Capital, Marginal Cost of Capital
- Leverages, Types of Leverages, Financial Leverage or Trading on Equity, Operating Leverage, Composite Leverage
- Introduction to Capital Structure, Capitalization, Capital Structure and Financial Structure, Forms of Capital Structure, Importance of Capital Structure, Optimal Capital Structure



- Theories of Capital Structure, Net Income Approach, Net Operating Income Approach, The Traditional Approach, Pecking order theory, Modigliani-Miller Approach , **Case : Restructuring the capital structure at Marriott**

**UNIT - V: Dividend Policy and Firm Valuation**

**(3 Hours)**

- Meaning of Management of Earning, Dividend Policy, Types of Dividend Policy, Factors Influencing Dividend Policy, Bonus Shares and Rights Issue
- Dividend Policy and Firm Value
- Dividend Theories: Walter's Model, Gordon's Model, Modigliani-Miller Model

**Prescribed Text Books:**

1. Pandey IM (2012) Financial Management, Tenth Edition, Vikas Publishing House, New Delhi.
2. Horne & Dhamija (2012) Financial Management, Twelfth Edition, Pearson, New Delhi.
3. Prasanna Chandra (2012) Financial Management, Eighth Edition, Tata McGraw Hill, New Delhi.

**Suggested Extra Readings:**

1. Horne and Wachowich (2012) Financial Management, 13<sup>th</sup> Edition, PHI Learning, New Delhi.
2. Sofat and Hiro (2011) Strategic Financial Management, First Edition, PHI Learning, New Delhi.
3. Kishore RM (2011) Strategic Financial Management, Second Edition, Taxmann's, New Delhi.
4. Brigham & Houston (2011) Fundamentals of Financial Management, Tenth Edition, Cengage Learning, Delhi.
5. Rustagi (2011) Financial Management, Fifth Edition, Taxmann's, New Delhi.
6. Kapil (2011) Financial Management, First Edition, Pearson, New Delhi.
7. Parrino & Kidwell (2011) Fundamentals of corporate finance, First Edition, Wiley India Pvt. Ltd., New Delhi.
8. Khan and Jain (2011) Financial Management (Text Problems and Cases), Fifth Edition, Tata McGraw Hill, New Delhi.
9. Ross, Westerfield & Jordan (2012) Fundamentals of Corporate Finance, Ninth Edition, Tata McGraw Hill, New Delhi.

## Management of Financial Institutions

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**Course Code:** AFA 411

**Course Name:** Management of Financial Institutions

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Acquaint students with historic overview as well as recent trends in merger waves.
- Enable students to understand a framework for examining the rationale for different types of mergers and acquisitions driven by different corporate strategies.
- Enable the students to know about strategies as well as valuation techniques followed by corporate houses in Mergers and Acquisitions.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - i Group Activity :10%
  - ii Individual Presentation : 10%
  - iii Quiz: 5%

**Course Contents:**

**UNIT – I: Introduction to Financial System**

**(6 Hours)**

- The Indian Financial System : Components of formal financial system, Functions of a financial system
- Financial Markets : The Money market ; Functions, Instruments, Tools for managing liquidity in money markets
- Capital Markets : Functions, Primary Capital market, Secondary Capital market, Capital Market scams, The Primary market, The Secondary market

**UNIT - II: Regulatory and Promotional Institutions (3 Hours)**

- The Reserve Bank of India, Roles of RBI, Monetary policy of RBI, Techniques of monetary control, Recent developments
- The Securities and Exchange Board of India – Genesis, Organisation, Objectives and Functions

**Case Study Discussion: 1.State Bank of India (Source: Management of Banking and Financial Services. Suresh, Paul. Pearson Publications.2<sup>nd</sup> Edition)**

**2. ICICI (Source: Management of Banking and Financial Services. Suresh, Paul. Pearson Publications.2<sup>nd</sup> Edition)**

**UNIT - III: Development and other Financial Institutions (3 Hours)**

- Developments Financial Institutions – Development Banks, IFCI, SIDBI, IDFC,LIC EXIM BANK, NABARD

**UNIT - IV: Banking Institutions (4 Hours)**

- Banking Institutions, Functions of a Bank, Scheduled Commercial Banks,
- Reforms for Banking sector, Capital Adequacy, Basel Norms in India
- Cooperative Banking – Urban and Rural Co-operative Banking

**UNIT - V: Overview of Emerging concepts in Banking Concepts (4 Hours)**

- Micro finance, Financial Inclusion, Bancassurance, Merchant banking
- Leasing, Factoring, Forfaiting, Retail Banking, Mergers and Acquisitions in Banking Sector

**Case Study Discussion: 1.ING Vysa Bank (Source: Management of Banking and Financial Services. Suresh, Paul. Pearson Publications.2<sup>nd</sup> Edition)**

**2. Corporation Bank (Source: Management of Banking and Financial Services. Suresh, Paul. Pearson Publications.2<sup>nd</sup> Edition)**

**Prescribed Text Books:**

1. Pathak Bharti. V (2011). The Indian Financial System.3rd Edition. Pearson India. New Delhi.
2. Bhole L M, Mahakhud Jitendra (2012).Financial Institutions and Markets. Tata McGraw Hill, New Delhi.

**Supplementary Reading**

1. Khan M Y (2010). Indian Financial System. Tata McGraw Hill, New Delhi.
2. Gordon, Natarajan (2010). Financial Markets and Services. Himalaya Publishing House, New Delhi.
3. Kohn Meir (1999).Financial Institutions and Markets. Tata McGraw Hill, New Delhi.
4. Gomez, Clifford (2010).Financial Markets, Institutions and Financial Services. Eastern Economy Edition. PHI Learning, New Delhi.
5. Mithani D.M. (2012).Money, Banking, International Trade and Public Finance. 16<sup>th</sup> Edition. Himalaya Publishing House, New Delhi.
6. Sundharam , Dutt. (2011). Indian Economy. 62<sup>nd</sup> Edition. S.Chand. New Delhi.
7. Burton,Brown. (2009). The Financial System and The Economy, Principles of Money and Banking. Eastern Economy Edition (5<sup>th</sup>). PHI Learning, New Delhi.

## Fundamentals of Financial Services

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**Course Code:** AFA 402

**Course Name:** Fundamentals of Financial Services

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Aimed at enabling the students to understand the issues involved in planning finances and investments at the personal level, and expects to raise their level of advising on the financial issues.
- Make student understand about the Indian financial system and financial services that they can apply in practical life.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
  2. End Term Examination: 50%
  3. Continuous Internal Assessment: 25%
- Library Work Assignment: 5%
  - Subjective Assignment: 5%
  - Quizzes/Games/Puzzles: 5%
  - Personality Assessment: 5%
  - Live Projects/Case Study/ Case Work: 5%

**Course Contents:**

**UNIT-I: Introduction to Financial Services and Financial System (3 hours)**

- Finance and Business, Financial Services: Characteristics, Distinctiveness and Classification
- Financial Intermediation and Disintermediation, Financial Exclusion and Inclusion, Credit creation process, Financial Product and services
- The Financial System, Nature, Evolution and Structure, The Functions of Financial Intermediaries, Financial Instruments, Financial services and economic environment, Players in financial services

**UNIT-II: Asset and Fee Based Corporate Financial Services (4 hours)**

- Leasing and Hire-Purchase, Mortgage Loans, Bill Discounting
- Working Capital Finance, Factoring, Forfaiting, Commercial Paper, Bonds and Debentures
- Guarantees (Financial and Performance), Letter of Credit
- Credit Insurance, Credit Syndication, Cash Management Services, Venture Capital Finance

**UNIT-III: Merchant Banking (4 hours)**

- Origin of Merchant Banking, Activities of Merchant Bankers
- SEBI (Merchant Bankers) Rules and Regulations, Listing of shares, Bonus issue, Rights issue
- Book Building, Underwriting, Depository Participants, Asset Securitization
- Merchant Banking in India

**UNIT-IV: Asset and Fee Based Retail Financial Services (6 hours)**

- Personal Finance, Consumer Finance, Housing Finance
- Residential Mortgage Backed Securities, Educational Loans, Automobile Loans, Deposit Schemes
- Mutual Funds: Organization and Types, Micro Finance
- Personal Tax Counseling, Credit Card, Debit Card, Portfolio Management, Bancassurance
- Insurance Services: IRDA, Post-liberalization Scenario, Players, Types and Regulatory Measures
- Marketing of Banking and Financial Services

**UNIT-V: Risk Management and Financial Sector Supervision (3 hours)**

- Risk and its classification, Risk Management, Risk Identification
- Measuring Risks, Managing Risks, Risk Management in NBFCs, Risk Management in Insurance Companies
- Corporate Governance in Financial Services Sector, Financial Sector Supervision

**Prescribed Text Books:**

1. Sasidharan and Mathews (2012), Financial Services and System, First Edition, Tata McGraw Hill, New Delhi.
2. Siddaiah T. (2011), Financial Services. First Edition, Pearson, New Delhi.

**Suggested Additional Readings:**

4. Bhole L.M, (2011). Financial Institutions and Markets, Fifth Edition, Tata McGraw Hill, New Delhi.
5. Batra & Bhatia, (2001). Management of Financial Services. Deep & Deep Publication, New Delhi.
6. Ravichandran K. (2011). Merchant Banking and Financial Services. First Edition. Himalaya Publishing House, New Delhi.
7. Rose & Hudgins, (2010). Bank Management and Financial Services. Seventh Edition. Tata McGraw Hill, New Delhi.
8. Gupta, Aggrawal & Neeti, (2007). Financial Institutes & Markets. Kalyani Publication, New Delhi.
9. Khan M.Y. (2009) Indian Financial System, Sixth Edition, Tata McGraw Hill, New Delhi.
10. Pathak (2007) India Financial System, Second edition, Pearson, New Delhi.
11. Tripathy (2010). Financial Services. Fourth Edition, PHI Learning, New Delhi.
12. Gordon & Natarajan,(2010), Financial Markets and Services. Sixth Edition, Himalaya Publishing House, New Delhi.
13. Pathak (2011). The Indian Financial System. Third Edition. Pearson, New Delhi.

## Consumer Behavior

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MSC 506

**Course Name:** Consumer Behavior

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce and familiarize students with important aspects of consumer behavior
- Prepare students for critically analyzing the impact of Individual determinants and external factors that influences consumer behavior and observe how marketers are incorporating these in real life marketing operations.
- Develop the capability to analyze the role consumer behavior plays in the marketing process.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation : 5%
  - Assignments : 8%
  - Presentations : 4%
  - Viva: : 4%
  - Case Study : 4%



**Course Contents:**

**UNIT – I: Introduction and role of CB in Marketing**

**(3 Hours)**

- Consumer Behavior and Marketing Concept
- Customer value, Satisfaction, Trust and Retention
- Impact of new technologies on Marketing Strategies
- Consumer Research Process

**UNIT – II: Consumer as Individual Part 1**

**(4 Hours)**

- Customer Motivation
- Types and System of Needs
- Consumer Personality
- Brand Personality

**UNIT – III: Consumer as Individual Part 2**

**(5 Hours)**

- Consumer Perception
- Dynamics and Elements of Perception
- Learning
- Behavioral and Cognitive Learning

**UNIT – IV: Consumer as Individual Part 3**

**(4 Hours)**

- Consumer Attitude
- Attitude formulation and Change
- Self

**UNIT – V: Consumer in Cultural and Social Setting**

**(4 Hours)**

- Reference Groups
- Social Class
- Culture
- Consumer Decision Making Process

### **Prescribed Text Books:**

1. Schiffman, Leon G; Leslie Lazar Kanuk & S. Ramesh Kumar (2013). **Consumer Behavior, 10/e**, Pearson Education, New Delhi.
2. Solomon Michael R. (2011). **Consumer Behavior: Buying, Having, and Being, 9/e**, Learning Pvt. Ltd.: New Delhi.
3. Robert East; Malcolm Wright and Marc Vanhuele (2009). **Consumer Behavior: Application in Marketing**, Sage Publications, New Delhi.

### **Suggested Additional Readings:**

1. Barbara Harriss-White (2005). **India's Market Society**, Three Essays Collective: Gurgaon.
2. Baron, Robert A.; Nyla R. Branscombe, Donn Byrne and Gopa Bhardwaj (2012). **Fundamentals of Social Psychology**, Pearson: New Delhi.
3. Baron, Robert A (2012). **Psychology, 5/e**, Pearson: New Delhi.
4. Comer, Ronald and Elizabeth Gould (2012). **Psychology Around Us**, Wiley India: New Delhi.
5. Husain, Akbar(2012). **Social Psychology**, Pearson: New Delhi.
6. Kumar, S. Ramesh (2011). **Consumer Behavior and Branding - Concepts, Readings and Cases: The Indian Context**, Pearson: New Delhi.
7. Kumar, S. Ramesh (edited) (2013). **Case Studies in Consumer Behavior**, Pearson: New Delhi.
8. Hawkins, Del; David Mothersenbaugh and Amit Mookerjee. (2010). **Consumer Behavior: Building Marketing Strategy, 11/e**, Tata Mcgraw-Hill Publishing Company Ltd.: New Delhi
9. Majumdar, Ramanuj (2011). **Consumer Behavior: Insights from Indian Market**, PHI Learning Pvt. Ltd.: New Delhi.
10. Nair, Suja R. (2010). **Consumer Behaviour in Indian Perspective: Text and Cases**, Himalaya Publishing House: New Delhi.
11. Pasricha, Seema (2007). **Consumer Psychology**, Deep and Deep Publications Pvt. Ltd.: New Delhi.

## Retail Management

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code:** MSC 440

**Course Name:** Retail Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Providing students with a comprehensive understanding of the theoretical and applied aspects of retail management.
- Describes and analyses the way retailing works, specially the activities and relationships.
- Develop knowledge of contemporary retail management issues at strategic level.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
  2. End Term Examination: 50%
  3. Continuous Internal Assessment : 25%
- Assignment/Presentation: 10%
  - Field Survey: 5%
  - Case Studies: 5%
  - Class Participation: 5%

**Course Contents:**

**UNIT – I: Retail Scenario (6 Hours)**

- Overview of Retailing
- Retail Formats
- Global and Indian Retail Scenario
- Retail Consumer
- Emerging Trends in Indian Retailing

**UNIT – II: Retailing Strategy (6 Hours)**

- Retail Market Strategy
- Financial Strategy
- Retail Location
- Retail Information system
- Customer Relationship Management
- Case Study

**UNIT – III: Merchandise Management (5 Hours)**

- Managing Merchandise Assortments
- Merchandise Planning Systems
- Buying Merchandise
- Retail Pricing
- Retail Communication Mix

**UNIT – IV: Store Management and CVM (7 Hours)**

- Managing the Store.
- Store Layout, Design & Visual Merchandising
- Customer Value Management.
- Technology in Retailing

**UNIT – V: Rural Retailing & e-Retailing (6 Hours)**

- Rural Retailing
- Foundation of e-Retailing.
- e-Retailing the Application Domain.
- e-Retailing: The Current Trends.
- Case Study

**Prescribed Text Books:**

1. Levy M., Weitz B.A and Pandit A. (2008), Retailing Management, 6th Edition, Tata McGraw Hill, New Delhi.
2. Berman B. Evans J. R. (2011), Retail Management, 11th Edition, Pearson Education, New Delhi.
3. Sharma, D.P. (2009), e-Retailing, 1<sup>st</sup> Edition, Himalaya Publishing House, New Delhi.

**Suggested Additional Readings:**

1. Cox Roger, Brittain Paul (2011), Retailing, 5<sup>th</sup> Edition, Pearson Education, New Delhi.
2. Srinivasan R. Srinivasan K. R. (2009), Cases in Retail Management, Bizantra.
3. Varley Rosemary, Retail Product Management, 2<sup>nd</sup> Edition, Routledge.
4. Singh Harjit (2011), Retail Management, S. Chand & Company Ltd., New Delhi.
5. Sheikh I. Arif, Fatima Kaneez (2011), Retail Management, Himalaya Publishing House, New Delhi.

## Human Resource Management

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code:** HRM 402

**Course Name:** Human Resource Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

1. To understand the essence of Human Resource Management and roles and functions a Human Resource manager performs in an organization
2. To comprehend that in present business scenario human resource management has acquired a strategic role in the functioning of any business organization.
3. To gain an insight into the emerging HR issues in contemporary organizations.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation- 10%
  - Presentation - 10%
  - Case Studies- 05%

**Course Contents:**

**UNIT I: INTRODUCTION TO HRM**

**(4 Hours)**

- Introduction, Genesis and growth of HRM in India
- Nature, scope, Objectives, Importance of HRM
- Functions of HRM
- Limitations of HRM

**UNIT II: PROCURING AND PLACING HUMAN RESOURCES**

**(5Hours)**

- Human Resource Planning -Introduction
- Demand and Supply forecasting
- Job Analysis- Job Description, Job Specification
- Recruitment and Selection
- Placement and Induction

**UNIT III: DEVELOPMENT-TRAINING, PERFORMANCE APPRAISAL**

**(3 Hours)**

- Training -Introduction and Importance
- Methods of Training-On-the-job and off-the -job
- Performance Appraisal-Introduction and process
- Methods of Performance Appraisal

**UNIT IV: COMPENSATION**

**(4 Hours)**

- Job Evaluation
- Wage and Salary Administration
- Financial Incentives
- Fringe Benefits

**UNIT V: INDUSTRIAL RELATION, GRIEVANCE HANDLING, MANAGING DISCIPLINE**

**(4 Hours)**

- Industrial Relations -Definition and Concepts
- Grievance Handling and Grievance Procedure
- Managing Discipline
- Quality of Work Life

**Prescribed Text Books:**

1. Dessler G.& Varkkey, B. 2011, Human Resource Management, 12<sup>th</sup> Edition, Pearson Education, Inc, Delhi
2. Rao, P. Subba 2011, Personnel and Human Resource Management: Text & Cases, Himalaya Publishing House, New Delhi
3. Aswathappa K. 2009, Human Resource Management, Fifth Edition, Tata McGraw Hill, New Delhi

**Suggested Additional Readings:**

1. Biswajeet, P., 2005, Human Resource Management, Prentice Hall India, New Delhi.
2. Decenzo, D. A. & Robbins, S. P., 2009, Fundamentals of Human Resource Management, 10<sup>th</sup> Edition, John Wiley & Sons Inc., New Delhi.
3. Gupta, C.B, 1999, Human Resource Management, Sultan Chand & Sons, New Delhi.
4. Rao, S.P, 2008, Essentials of Human Resource Management and Industrial Relations; Text, Cases and Games, 3<sup>rd</sup> Revised Edition, Himalaya Publishing House, New Delhi
5. Saiyadain, 2009, Human Resource Management, 4<sup>th</sup> Edition, Tata McGraw Hill Publishing Ltd., New Delhi



## Conflict Management and Negotiation Skills

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** HRM507

**Course Name:** Conflict Management and Negotiation Skills

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to

- Help students understand the concept of conflict and Negotiation skills
- To equip students with the skills and knowledge to manage individual and organizational skills
- To give an exposure to the students for process, stages and styles of negotiation.
- Train student for developing effective negotiation skills

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Library Work Assignment: 5 marks
  - Subjective Assignment: 5 marks
  - Quizzes/Games/Puzzles: 5 marks
  - Personality Assessment: 5 marks
  - Live Projects: 5 marks

**Course Contents:**

**UNIT-I: Introduction to conflict (4 Hours)**

- The meaning and nature of Conflict
- Level and Types of Conflict
- Schools of Thoughts on Conflict
- Functional and Dysfunctional Conflict

**UNIT-II: Conflict Management (5-Hours)**

- Diagnosis and Sources of Conflict
- Managing ,resolving and Avoiding Conflict
- Managing Individual conflict
- Transactional Analysis and Conflict Management
- Managing Group and Organizational Conflict-Role analysis and Role Negotiation

**UNIT-III: Defining Negotiation and Its components (4-Hours)**

- Negotiation –Introduction and Importance
- Components of Negotiation
- Stages of Negotiation Process
- Role of personality in Negotiation

**UNIT-IV: Negotiation Style (4-Hours)**

- Major Negotiation Style
- Key Negotiation Temperaments
- Role of Communication in Negotiation
- Rules of Negotiation
- Mistakes in Negotiation

**UNIT-V: Post Negotiation process and Third Party Intervention (3 Hours)**

- Post negotiation Process
- BATNA-Introduction
- Deciding BATNA
- Third Party Intervention-Counseling, Mediation, conciliation, arbitration

**Text Books:**

1. Corvete, B.A.B(2012). Conflict Management: A practical Guide to Develop Negotiation Skills. Pearson, New Delhi.
2. Collins (2012).Managing Conflict and Workplace Relationships, Cengage Publication.
3. K , Ashwathappa(2012) ,Organizational Behaviour, Himalayan Publishing House

**Additional Readings:**

1. Abigail, R.A.( 2010). Managing Conflict through Communication. Pearson. New Delhi.
2. Pammer, W.J. and Kilian, J.(2003). Handbook of Conflict Management, CRC Press, USA
3. K , Ashwathappa(2012) ,Organizational Behaviour, Himalyan Publishing House
4. Armstrong M(2010),Human Resource Management Practice, Kogan Page, New Delhi

**Case Studies and Activities:**

1. Labour – Management Relations in Tamil Nadu Electricity Boards
2. HR Problems in Hyundai Motors co.
3. Negotiation Style Assessment instrument: To Assess the Negotiation Styles of the Students

## Management of MSME

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** EDM 405

**Course Name:** Management of MSME

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Introduce students to different aspects of Micro, Small and Medium Enterprises.
- Create managers for managing Micro, Small and Medium Enterprises.
- Develop skills in successfully initiating, expanding and diversifying a business enterprise in new, up-coming areas.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Field Work: 10%
  - Assignment/Presentation: 5%
  - Case Studies: 5%
  - Class Participation: 5%

**Course Contents:**

**UNIT – I: Introduction to Micro, Small and Medium Enterprises (MSMEs). (6 Hours)**

- Definition of Micro, Small and Medium Enterprises
- MSMEs and Economic Development
- MSMEs: Indian Scenario
- Measures for Promotion, Development and Enhancement of Competitiveness of Micro, Small and Medium enterprises
- Issues related with MSMEs.

**UNIT – II: Setting MSMEs (6 Hours)**

- Business Opportunities in Various Sectors
- Selection of Types of Ownership Organization
- Business Plan and its Viability
- Government Support and Clustering.
- Legal Aspects of MSMEs

**UNIT – III: MSMEs Management (7 Hours)**

- Strategic Management in MSME
- Financial Management in MSME
- Marketing Management in MSME
- Production Management in MSME
- Human Resource Management in MSME
- Total Quality Management for MSMEs

**UNIT – IV: Family Business Management (5 Hours)**

- Overview of Family Business
- Strategies for Improving the Capability and performance of a Family Business
- Succession in Family Business
- Management Development Plan in Family Business
- Case Study

**UNIT – V: MSME Rehabilitation and Future of MSMEs (6 Hours)**

- Sickness in MSMEs and Corrective Measures
- MSMEs Rehabilitation
- Growth Strategies
- Future of MSMEs
- Case Study

**Prescribed Text Books:**

1. G., Anand, Srinivasan, (2009). Micro Small and Medium Enterprises. Third Edition. Taxmann Publications (P.) Ltd. New Delhi.
2. Charantimath, M, Poornima, (2008). Entrepreneurship Development Small Business Enterprises. Sixth Edition. Pearson Education, New Delhi.
3. Desai, Vasant, (2011). Entrepreneurship and Management of Small and Medium Enterprises. First Edition. Himalaya Publishing House, New Delhi.

**Suggested Extra Readings:**

1. Taxmann, (2008). Micro Small and Medium Enterprises. First Edition. Taxmann Publications (P.) Ltd. New Delhi.
2. Khanka, S.S., (2012). Entrepreneurial Development. S.Chand and Company Ltd.
3. Gupta, C.B. & Khanka, S.S., (2010). Entrepreneurship and Small Business Management. Fourth Edition. Sultan Chand & Sons.
4. Deakins, David & Freel, Mark (2004). Entrepreneurship and Small Firms. Third Edition. Tata McGraw-Hill, New Delhi.
5. Desai, Vasant, (2011). The Dynamics of Entrepreneurial Development and Management. Sixth Edition. Himalaya Publishing House, New Delhi.

## Operations Management

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** POM 401

**Course Name:** Operations Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Enable the students to understand basic concepts of Operations Management.
- Acquaint the students about Production and Operations functions.
- Enable the students to understand the decision making relating to Operations and Productivity of an organization.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation: 5%
  - Presentations: 5%
  - Assignment: 5%
  - Case studies and case lets: 10%

**Course Contents:**

**UNIT – I: Introduction to Operations Management (3 Hours)**

- Nature and Scope of Production and Operations Management
- Role of Operations Management
- Operations in Global Environment

**UNIT – II: Designing Operations (5 Hours)**

- Product Design and Analysis
- Make or Buy Decision
- Managing Quality

**UNIT – III: Location and Layout (4 Hours)**

- Layout Strategies
- Location Strategies

**UNIT – IV: Forecasting and Requirement Planning (4 Hours)**

- Material Requirement Planning
- JIT
- New Research in understanding Demand
- Demand Forecasting

**UNIT – V: Managing Inventory and Work (4 Hours)**

- Work Study and Measurement
- Inventory Management
- Productivity and Efficiency
- Application of Operations Management in Industry
- Case studies
- Use of Software's to solve various problems



### Prescribed Text Books:

1. Heizer, Jay; Render, Barry and Rajashekhar, Jagadeesh (2011). **Operations Management**, (9<sup>th</sup> ed.), Pearson: New Delhi.
2. Roy, Ram Naresh (2005). **A Modern Approach to Operations Management**, New Age International Ltd., New Delhi.

### Suggested Readings

1. Aswathappa, K. and Bhat, K.S. (2012). **Production and Operations Management**, HPH: New Delhi.
2. Chary, S. N.,(2002), **Production and Operations Management**, Tata McGraw-Hill: New Delhi
3. Chase, Richard B.; Jacobs, F. Robert and Aquilano, Nicholas J. (2006). **Operations Management for Competitive Advantage**, McGraw-Hill/Irwin: New York.
4. E.V. Adam and R. J. Ebert, (1998), **Production and Operations Management**, Prentice Hall of India: New Delhi
5. Gore, Amol; & Panizzolo, Roberte (2012). **Operations Management**, Cengage: Delhi.
6. Lee, S.M. (et al) (1989), **Operations Management**, Wm. C.Publishers: Iowa
7. Monks, J. (1987), **Operations Management**, Irwin McGraw – Hill: New York
8. Morton, Thomas E. (2003). **Production Operations Management**, Thomson South Western in collaboration with Vikas Publishing House: New Delhi
9. Panneerselvam, R. (2002). **Productions and Operations Management**, Eastern Economy Edition, Prentice Hall of India: New Delhi.
10. Rusesell and Taylor (2012) **Operations Management**, Wiley India: Delhi
11. Stevenson, W. J. (1999), **Production Operations Management**, Irwin McGraw – Hill:New York

## Foreign Exchange Risk Management

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**Course Code:** AFA 532

**Course Name:** Foreign Exchange Risk Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed :

- To enable the students to understand about International Trade, International Monetary System and issues in International Business.
- To provide comprehensive knowledge on foreign exchange markets and exchange rate mechanism
- To give in depth inputs on foreign exchange risks subsequently, the various methods and instruments to hedge foreign exchange risks, to optimize rupee earnings on exports and to raise low cost finance through foreign currency loans and credits.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
  2. End Semester Examination: 50%
  3. Continuous Internal Assessment : 25%
- Class participation: 5%
  - Presentations: 10%
  - Assignment: 10%

## Course Contents

### Unit

- I International Trade and Monetary System and markets (4 Hours)**
- International trade and its financial issues
  - International Monetary System
  - Multilateral Financial Institutions
- II Foreign Exchange and Exchange Rate (4 Hours)**
- Foreign Exchange Fundamentals,
  - Players in the Foreign Exchange Market
  - Various exchange rate systems
  - Determinants of Foreign Exchange Rates
- III Foreign Exchange Rates Quote, Accounts and Contracts (4 Hours)**
- Various foreign exchange (forex) Quotes
  - Various foreign exchange (forex) Accounts
  - Various foreign exchange (forex) contracts
- IV Foreign Exchange Risks (4 Hours)**
- Transaction Risk,
  - Translation Risk,
  - Economic Risk, Position Risk, Settlement or Credit Risks,
  - Mismatch or Liquidity Risk, Operational Risks, Sovereign Risk,
  - Cross Country Risk, Legal Risk, Value at Risk (VaR)
- V Foreign Exchange Risks Management (14 Hours)**
- Non-Hedging like Netting, offsetting and switching
  - Foreign Exchange Forward Contracts
  - Foreign Exchange Futures and options
  - Foreign Exchange and Interest Rate Swaps
  - Forecasting Foreign Exchange Rates, Fundamental and Technical Analysis

### Books recommended

1. Eun and Resnick,(2012), International Financial Management, 6<sup>th</sup> Edition, McGraw Hill-Irwin, 2009,
2. Siddaih T., (2012), International Financial Management, Pearson, New Delhi
3. Raghu Palat, (2010), How to risk-proof your business against exchange rate fluctuations,
4. Verma Anuj, (2011), International Financial Management, Kogent Learning Solution Inc., New Delhi.
5. Agrawal, O.P (2011), Second edition, International Financial Management, Himalaya Publishing House., New Delhi.
6. Maurice D. Levi, International Finance, McGraw Hil

### Suggested Readings

- A Guide to Forex Dealing and Operating, Published by State Bank of Hyderabad, 1993.
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- De Ceuster, Marc J.K., Durinck, Edward, Leveren, Eddy and Lodewyckx, Jozef : “A Survey into the Use of Derivatives by Large Non-financial Firms Operating in Belgium”, *European Financial Management*, Sep, Vol. 6, Issue 3, pp 301-319 (2000)
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- Levich, Richard, (2011), Second Edition *International Financial Markets*, McGraw-Hill/Irwin.
- Machraju, H.R. (2011), Second edition, *International Financial Management*, Himalaya Publishing House., New Delhi.
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- Stephen A. Ross, Randolph W. Westerfield and Jeffrey Jaffe (RWJ), (2005), 7th edition, *Corporate Finance*, Irwin Mc-Graw Hill.
- Treasury and Risk Management in Banks – 13 BF Taxmann- 2010.
- Woochan Kim and Taeyoon Sung, June 2005, *What makes firms manage FX risk?*, *Emerging Markets Review* 6 (2005) 263– 288  
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- [http://www.infosys.com/investor/reports/annual/Infosys\\_AR06.pdf](http://www.infosys.com/investor/reports/annual/Infosys_AR06.pdf)
- [http://www.rbi.org.in/Scripts/BS\\_FemaNotifications.aspx](http://www.rbi.org.in/Scripts/BS_FemaNotifications.aspx)
- [http://www.rbi.org.in/Scripts/BS\\_FemaNotifications.aspx](http://www.rbi.org.in/Scripts/BS_FemaNotifications.aspx)
- <http://www.ril.com/rportal/jsp/eportal/ListDownloadLibrary.jsp?DLID=866>
- <http://www.ril.com/rportal/jsp/eportal/ListDownloadLibrary.jsp?DLID=866>
- <http://www.iiem.com>
- <http://nibmindia.org>
- <http://export.gov/tradefinanceguide>

## Options, Futures and other Derivatives

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** AFA 524

**Course Name:** Options, Futures and other Derivatives

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Help students in understanding Basic concepts of Options, Futures and other Derivatives.
- Help students to acquaint with both theory and practices of various financial derivatives functioning.
- It is also aimed at helping student to understand the application of Derivatives theory in practice.

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 5%
  - Quizzes/Games/Puzzles: 5%
  - Personality Assessment: 5%
  - Live Projects: 5%

## Course Contents:

### **UNIT - I: Introduction to Derivatives Markets (3 Hours)**

- Derivatives- Meaning and Definition, Types of Derivatives, Uses of Derivatives
- Important concept in Financial and Derivatives Market, Needs of Derivatives, Features and types of Financial Derivatives
- Critiques of Derivatives, Myths about derivatives, Forward contracts, Options Contracts, **Discussion** on Basic hedging practices , Exchange traded markets, OTC Markets, Types of Traders, Overview of the Indian derivatives market

### **UNIT - II: Futures Market and Contracting (4 Hours)**

- Introduction, Financial Futures contracts, Types of Financial Futures contracts
- Types of orders and operators/traders in Futures market, Functions of Futures market, Growth of the Futures markets
- Future market trading mechanism, The specification of the futures contract-Exchanges, Standardization, The Clearing house, The operation of Margin, Closing a Futures position (Settlement)
- Hedging Strategies using Futures, Cross hedging, Stock Index futures, Rolling the hedge forward, Examples from the Indian stock market

### **UNIT – III: Forward and Options market (6 Hours)**

- Forward contract, Features of Forward contract, Forward Markets as fore-runners of Futures market
- Distinction between Futures and Forward Contracts, Classification of Forward contracts, Forward trading mechanism, Forward prices Versus Future prices
- Types of Options, Option Positions, The Underlying Assets, Specification of Stock Options
- Newspaper Quotes, Trading in Options market, Commissions and Margins in Options market
- The Options clearing corporation, Regulation and Taxation in Options market, Warrants, Executive Stock Options and Convertibles, Over- the- counter markets
- Options pricing model- Black Scholes and Binomial
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### **UNIT - IV: Interest Rate Futures and Swaps (4 Hours)**

- Day count conventions, Quotations for treasury bond and bills, Treasury bond futures
- Eurodollar Futures, Duration based hedging strategies
- Mechanics of Interest rate Swaps, Day count issues, Comparative-Advantage argument
- Nature of Swap rates, Valuation of interest rate swaps, Currency Swaps, Debt- equity Swap

**UNIT - V:      Advanced Financial Derivatives and Credit Derivatives**

**(3 Hours)**

- Interest rate Options, Interest rate Caps, Interest rate Floors, Interest rate Collars
- Swaptions, Compound Options, Chooser Options, Barrier and Binary Options
- Concept and features of Credit Derivatives, Credit Risk, Credit Risk Assessment, Credit Risk management, Credit Derivatives Instruments.

**Prescribed Text Books:**

1. John C. Hull (2011) Fundamentals of Futures and Options Market, Fifth Edition, Pearson, New Delhi.
2. Gupta S L (2011) Financial Derivatives, First Edition, PHI Learning, New Delhi.
3. Parasuraman N R (2009) Fundamentals of Financial Derivatives, Second Edition, Wiley India Pvt. Ltd., New Delhi.
4. Hull and Basu (2013) Options, Futures, and Other Derivatives, Seventh Edition, Pearson, New Delhi.

**Suggested Extra Readings:**

1. Jayanth Rama Varma (2011) Derivatives and Risk Management, First Edition, Tata Mcgraw, New Delhi.
2. Chugh & Maheshwari (2011) Financial Derivatives, First Edition, Pearson, New Delhi.
3. Janakiramanan (2011) Derivatives and Risk Management, First Edition, Pearson, New Delhi.
4. Chance & Brooks (2011) Derivatives and Risk Management Basics, First Edition, Cengage Learning New Delhi.
5. McDonald (2013) Derivatives Markets, Second Edition, Pearson, New Delhi.
6. Bansal and Bansal (2010) Derivatives and Financial Innovation, Tata Mcgraw, New Delhi.



## Mergers and Acquisitions

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** AFA 508

**Course Name:** Mergers and Acquisitions

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Acquaint students with historic overview as well as recent trends in merger waves.
- Enable students to understand a framework for examining the rationale for different types of mergers and acquisitions driven by different corporate strategies.
- Enable the students to know about strategies as well as valuation techniques followed by corporate houses in Mergers and Acquisitions.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - iv Case studies:10%
  - v Presentation : 10%
  - vi Quiz: 5%

**Course Contents:**

**UNIT – I: The Causes of Mergers and Acquisitions (4 Hours)**

- Motives for mergers and acquisitions
- Forms of Mergers and Acquisitions
- Theories of Mergers
- Recent trends in Mergers and Acquisitions
- Case Study: Merger of ICICI Ltd. With ICICI Bank(Chapter 1 Ray)
- Case Study: Merger of Reliance Petroleum Ltd. With Reliance Industries Ltd.

**UNIT - II:      History and Strategic approaches to Mergers and Acquisitions      5 Hours)**

- Merger Waves
- Strategies for entering into new markets.
- Value creation Strategy in Mergers and Acquisitions.
- Strategic approaches –BCG Matrix Analysis, Ansoff Matrix Analysis, Product Life Cycle Analysis
- Divestment, LBO'S, Spin offs

**UNIT - III:      Valuation of Mergers and Acquisitions      (6 Hours)**

- Basics of Valuation
- Various expressions of value
- Objectives of valuation
- Public sector valuation
- Case Study: Corporate Valuation and Indian Politics: Privatization of Balco
- Approaches to Corporate Valuation
- Corporate valuation techniques: Net Asset Valuation Model, Optimized Deprival Valuation Model, Price Earning Valuation Model, Tobin'S Q Model, The Free Cash Valuation Model
- Case Study: Swap Ratio and the failed Merger Between Global Trust Bank and UTI Bank

**UNIT - IV:      Takeover Tactics      (3 Hours)**

- Preliminary Takeover steps, Establishing a Toehold
- Bidding Strategies, Bear Hugs
- Tender Offers, Proxy Fights
- Case lets on takeover strategies

**UNIT – V:      Case Study and Review of Research Papers      (2 Hours)**

- Case study 1
- Trends and prospective on Corporate Mergers in Contemporary India( P L Beena, Economic and Political Weekly, 2008)
- Type of Merger and Impact on Operating Performance: The Indian Experience (Prמוד, Vidyadhar, Economic and Political Weekly, 2008)

**Prescribed Text Books:**

1. Ray Ghosh Kamal, (2010).Mergers and Acquisitions Strategy, Valuation and Integration. Eastern Economy Edition. PHI, New Delhi.
2. Gaughan A. Patrick. (2011). Mergers Acquisitions and Corporate Restructurings. Fifth Edition.Wiley India (P) Ltd. New Delhi.
3. Kumar Rajesh B., (2011). Mergers and Acquisitions: Text and Cases. Tata McGraw Hill, New Delhi.

**Suggested Additional Readings:**

1. Sudarsanam Sudi., (1985). Creating Values from Mergers and Acquisitions: The Challenges. Pearson Education, Delhi.
2. Boeh, Beamish, (2009). Mergers and Acquisitions: Text and Cases. Sage South Asia Edition. New Delhi.
- 3.Sofat, Hiro,(2011). Strategic Financial Management. PHI Private Limited,New Delhi.
- 4.Weston, Chung,Hoag,(1990). Mergers, Restructiuring and Corporate Control. PHI Private Limited,New Delhi.

## Financial Engineering

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** AFA-511

**Course Name:** Financial Engineering

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to enable students:

- To build up the knowledge of advanced financial instruments
- To apply the techniques of financial engineering to address a wide range of trading and investment objectives
- To develop strategies to mitigate risk and meet specified goals

#### Attendance Requirement:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation: 5%
  - Presentations: 5%
  - Assignment: 5%
  - Viva: 10%

**Course Contents:**

**UNIT – I: Overview of Financial Engineering**

**(3 Hour)**

- Introduction to financial engineering
- Financial Innovation, Types of Derivatives: forwards, futures, options, swaps and other derivative contracts.
- Types of traders: Hedgers, Speculators and Arbitrageurs.

**UNIT – II: Pricing Tools in Financial Engineering**

**(5 Hours)**

- Valuing forward contracts, Futures price of stock indices
- Relationship between futures and spot price, cost of carry model
- Factors affecting option prices, Put call parity
- Binomial trees
- Black and Scholes model

**UNIT – III: Trading Strategies involving Futures, Options and Swaps**

**(4 Hours)**

- Hedging strategies using futures
- Trading strategies involving options
- Currency and interest rate swaps.

**UNIT – IV: Volatility Engineering**

**(4 Hour)**

- The Greek Letters, Delta, Theta, Gamma, Vega, Rho
- Volatility Smiles
- Value at Risk
- Estimating Volatility

**UNIT – V: Credit Derivatives**

**(4 Hours)**

- Credit default swaps
- Asset backed securities
- Collateralized debt obligations
- Exotic Options & Real Options
- Financial innovation and financial crisis of 2007
- Lessons for users of derivatives

**Prescribed Text Book(s):**

1. Marshall, J. F., & Bansal, V. K. (2009). *Financial Engineering: A Complete Guide to Financial Innovation* (1st ed.). New Delhi: Phi Learning.
2. Hull, J. C., & Basu, S. (2013). *Options, Futures and Other Derivatives* (7th ed.). New Delhi: Pearson Education

**Suggested Readings**

1. *Handbook of Financial Engineering* (1st ed.). (2008). Springer.
2. Neftci, S. (2008). *Principles of Financial Engineering* (2nd ed.). Elsevier.
3. Kolt, R. W. (2008). *Futures, Options and Swaps*. Blackwell Publishers.
4. Chance, D. M. (2013). *An Introduction to Derivatives and Risk Management* (9th ed.). New Delhi: Cengage Learning.
5. Das, S. (2013). *Derivatives: Principle and Practice*. New Delhi: McGraw Hill.
6. Gupta, S. L. (2009). *Financial Derivatives: Theory, Concepts and Problems* (1st ed.). New Delhi: PHI.
7. Vohra, N. D. (2013). *Futures and Options*. New Delhi: Tata McGraw Hill.

## Global Supply Chain Management and International Logistics

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MSC 422

**Course Name:** Global Supply Chain Management and International Logistics

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.).

**Course Objectives:** The course is designed to -

- Enable the students to understand the concepts of International Supply Chain Management and Logistics Management
- Conceptualize international supply chain designs integrated with the Logistics management, which are aligned with business models for manufacturing and service companies.
- Help the students to use the understanding of International supply chain for effective implementation of blended supply chain and logistics management relationships in dynamic International business environment.

### Attendance Requirement:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation : 5%
  - Presentations/ Viva : 10%
  - Assignments/Case Studies : 5%
  - Activities/Live Projects : 5%

**Course Contents:**

**UNIT - I: INTROUCTION TO INTERNATIONAL SUPPLY CHAIN & LOGISTICS MANAGEMENT (4 Hours)**

- Understanding Supply Chain: Value chain and Demand chain
- Role of Logistics in Supply Chain
- Global Business Environment
- Structure of Global Supply Chains: Issues to Consider

**UNIT - II: INTEGRATION OF INTERNATIONAL SCM WITH LOGISTICS MANAGEMENT (4 Hours)**

- Modern Logistics concepts
- Evolution and Revolution of Logistics and SCM
- International Operations: International Logistics & Global Supply Chain Decisions
- Collecting, Analyzing, and Sharing: Information across a Global Supply Chain
- Case : Walmart's Strategy

**UNIT - III: FACTORS AND CHALLENGES DRIVING LOGISTICS AND SUPPLY CHAIN MANGEMENT**

**(4 hours)**

- Factors Driving Global Supply Chain Management
- Management of Inventory in the supply chain analysis including vendor management
- Factors contributing to the development of Logistics
- Time Compression: International SCM & Logistics Management

**UNIT - IV: CONSTITUENTS OF INTERNATIONAL PROCUREMENT SYSTEM AND SELECTING**

**INTERNATIONAL LOGISTIC OPERATOR**

**(4 Hours)**

- International Purchasing System, strategy and its interface with the management of the Global Supply Chain
- Selecting the International Logistic Operator
- International Transport
- Supply Chain Globalization and the Complexities of Cost-Minimization Strategies



**UNIT – V: FUTURE OF INTERNATIONAL SCM & LOGISTICS**

**(4 Hours)**

- Supply Chain Operations: A focus on adding value to Brand Management
- Future Growth and Related constraints of Global SCM and International logistics
- Future Strategic Focus – Global SCM and International Logistic
- Concepts of collaboration: supply chain management in a global food industry

**Prescribed Text Books:**

1. Branch, Alan E. (2009). **Global Supply Chain Management and International Logistics**, Routledge, New York.
2. Simchi-Levi, David; Philip Kaminsky, Edith Simchi-Levi and Ravi Shankar (2008): **Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies (Third Edition)**, McGraw-Hill Publishing Company Ltd, New Delhi.
3. Varma, Sumati (2012). **International Business**, Pearson: New Delhi.

**Suggested Readings:**

1. Bhat, Shridhara K. (2011). **Logistics and Supply Chain Management**, Himalaya Publishing House: New Delhi.
2. Cetinkaya, Balkan; Richard Cuthbertson, Graham Ewer, Thorsten Klaas-Wissing, Wojciech Piotrowicz, Christoph Tyssen (2011). **Sustainable Supply Chain Management: Practical Ideas for Moving Towards Best Practice**, Springer: Springer-Verlag Berlin Heidelberg.
3. Chopra, Sunil; Peter Meindl and D. V. Kalra (2010). **Supply Chain Management: Strategy, Planning and Operation**, Pearson: New Delhi.
4. Christopher, Martin (2011). **Logistics and Supply Chain Management: Strategies for Reducing Cost and Improving Service (2<sup>nd</sup> ed.)**, Pearson: New Delhi.
5. Coyle, John J.; C. John Langley, Brian J. Gibson, Robert A. Novack and Edward J. Bardi (2009). **A Logistics Approach to Supply Chain Management**; Cengage Learning India Pvt. Ltd.: Delhi.
6. Keegan, Warren J. (2011). **Global Marketing Management (7<sup>th</sup> ed.)**; Pearson Education: New Delhi.
7. Mentzer, John T (2012). **Fundamentals of Supply Chain Management: Twelve Drivers of Competitive Advantage**, Sage Publication: New Delhi
8. Raja Shekhar, B. and G.V.R.K. Acharyulu (2009). **Supply Chain Management**, Excel Books: New Delhi.
9. Raja Shekhar, B. and Acharyulu, G.V.R.K. (2008). **Logistics and Supply Chain Management**. Excel Books: New Delhi.
10. Rao, P.H. (2012). **Greening the Supply Chain: A Guide for Asian Managers**, Sage Publication: New Delhi.
11. Sanders, Nada R. (2012). **Supply Chain Management: A Global Perspective**, Wiley India Edition: New Delhi.

12. Stadler, Hartmut and Christoph Kilger (ed.) (2008). **Supply Chain Management and Advanced Planning: Concepts, Models, Software, and Case Studies** (4<sup>th</sup> ed), Springer: Berlin.

**References from Journals and other sources:**

1. V. Ravi, and Ravi Shankar, (2012), Evaluating alternatives in reverse logistics for automobile organizations, *International Journal of Logistics Systems and Management*, Vol. 12, No.1 pp. 32 – 51
2. Pravin Kumar, Ravi Shankar, and Surendra S. Yadav, (2012), An analysis of supplier development issues in global context: an approach of fuzzy based modelling, *International Journal of Logistics Systems and Management*, Vol. 11, No.3 pp. 407 - 428.
3. R. Anbanandam, D.K. Banwet, and Ravi Shankar, (2011), Evaluation of supply chain collaboration: a case of apparel retail industry in India, *International Journal of Productivity and Performance Management* Volume: 60 Issue: 2 2011
4. Pravin Kumar, Ravi Shankar, and Surendra S. Yadav, (2011), Global supplier selection and order allocation using FQFD and MOLP, *Int. J. of Logistics Systems and Management* 2011 - Vol. 9, No.1 pp. 43 – 68
5. A. Barve, A. Kanda, and Ravi Shankar (2008), Making 3PL effective in agile supply chains, *International Journal of Logistics Systems and Management*, Vol. 4(1), 2008, pp 40-60.
6. Pravin Kumar, Ravi Shankar, and S. S. Yadav (2008), Flexibility in global supply chain: modeling the enablers, *Journal of Modeling in Management*, Vol. 3(3), 2008, pp. 277-297.

**Journals:**

1. *International Journal of Logistics Systems and Management*.

## Sales & Distribution Management

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MSC 514

**Course Name:** Sales & Distribution Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Acquaint students with the fundamentals of sales and distribution management.
- Enable students to manage the sales, sales force and distribution functions.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Class participation 5%
  - b. Assignments/Presentations 10%
  - c. Case studies/ Role Play 5%
  - d. Surprise test/Activity 5%

**Course Contents:**

**UNIT - I: Introduction to Sales Management**

**(7 Hours)**

- Overview of Sales Management
- Role and Success factors of Professional Salespeople
- Sales Management Positions
- Selling and Modern Selling
- Theories of Selling
- Buyer Behaviour: Organizational Vs Consumer

**UNIT – II: Sales Planning and Sales Organisation** **(6 Hours)**

- Sales Planning and Sales Forecasting
- Budgeting
- Management of Key Accounts, Sales Territories and Quotas
- Sales Organisation and Relationship Selling

**UNIT - III: Sales Force Management** **(6 Hours)**

- Sales Force Management
- Recruitment and Selection
- Training, Motivating and Compensating Sales Personnel
- Managing Expenses of Sales Personnel, Sales Meeting and Contests
- Sales Control and Case study

**UNIT - IV: Distribution Management-I** **(5 Hours)**

- Marketing Channels: Structure and Functions
- Marketing Channels
- Channel Institutions
- Case: Distribution Management

**UNIT - V: Distribution Management-II** **(6 Hours)**

- Designing Channel Systems
- Channel Management
- Channel Information Systems
- Logistics and Supply Chain Management
- International Sales and Distribution Management

**Prescribed Text Books:**

1. Havaldar Krishna and Cavale Vasant (2011), Sales and Distribution Management, Tata McGraw Hill Education.
2. Still, Cundiff and Govoni (2011), Sales Management (Decision, Strategy and Cases), Pearson Education, India.
3. Jobber and Lancaster (2011), Selling and Sales Management, Seventh Edition, Pearson Education, India.

**Suggested Additional Readings:**

1. Coughlan, Anderson, Stern, El-Ansary and Natarajan (2011), Marketing Channels, Seventh Edition, Pearson Education, India.
2. Allen, R Y, Selling Dynamics, Tata McGraw Hill, New Delhi.
3. Gupta Vaswar Das, Sales Management-The Indian Perspective, Prentice Hall, Delhi.
4. Kotler, Keller, Koshy and Jha (2009), Marketing Management: A South Asian Perspective, Thirteenth Edition, Pearson Education, India.
5. Kumar Arun and Meenakshi N (2011), Marketing Management, Second Edition, Vikas Publishing House Pvt. Ltd.
6. Stern, Adell and Anne, Marketing Channels, Prentice Hall, Delhi.

## Web Based Advertising

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**Course Code:** MSC 522

**Course Name:** Web Based Advertising

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/optional work placement; literature survey/ library work; data collection/ field work; writing of papers/projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Enable the students to apply marketing theory and concepts to what marketers do in "the real world".
- Enable the students to design effective marketing programs by selecting appropriate strategies for product, pricing, place and promotion.
- Improve familiarity of the students with current issues and emerging trends in marketing.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation: 5%
  - Assignments: 4%
  - Presentations: 4%
  - Case studies & Survey: 8%
  - Surprise test/Activity: 4%

**Course Contents:**

**UNIT – I: Starting with Foundation (3 Hours)**

- History of Internet and its origin of WBA
- A Marketing Perspective in the Internet Age
- Internet marketing v/s traditional marketing
- Online Ad Network

**UNIT – II: Understanding Web Environment (4 Hours)**

- Need of Website for Business
- The abbreviations used while working/marketing through web.
- Q2C model – The genetics of great website
- Developing a successful website

**UNIT III: Design the Web Caste and Web Site (3 Hours)**

- Role of web caste and website in emerging market
- Luxury branding on the Internet
- Designing effective e-mail promotion

**UNIT – IV: Web Based Types & Marketing Strategies (4 Hours)**

- Types of WBA
- Web banner and integrating offline channels
- Website planning and designing
- E-CRM, E-Banking, E-Green Marketing etc
- Social Media Network marketing
- Mobile marketing & Advertising

**UNIT – V: Internet based marketing research (6 Hours)**

- Online and postal data collection methods
- Alternative to traditional research methods
- E-trust: the influence of perceived interactivity on e-retailing users
- E-relationships – emergence and the small firm
- Marketing communications using digital media channels

**Prescribed Text Books:**

1. Dave Chaffey ,Fiona Ellis-Chadwick, Kevin Johnston & Richard Mayer (2009), **Internet Marketing: Strategy, Implementation and Practice**, 3rd Edition, Pearson Education.
2. Lara Fawzy & Lucas Dworski (2011), **Emerging Business Online: Global Markets and the power of B2B Internet Marketing**, Pearson Education.
3. Catherine Juon, Dunrie Greiling & Catherine Buerkle (2012), **Internet Marketing Start To Finish**, Que Publishing House.
4. Susan Sweeney, Andy MacLellan, Ed Dorey, **3G Marketing on the Internet: Third Generation Internet Marketing Strategies for Online Success**, 7th Edition, Maximum Press.

**Suggested Additional Readings:**

1. Ramaswamy V.S. & Namakumari S. (2009), **Marketing Management: Global Perspective Indian Context**, 4th Edition, Macmillan Publishers India Ltd., New Delhi.

2. Kotler Philip; Armstrong Gary; Agnihotri Prafulla Y. & Haque Ehsan Ul (2011), Principles of Marketing: A South Asian Perspective, 2nd Edition, Pearson Education, New Delhi.
3. Bose Biplab S. (2010), Marketing Management, 3rd Edition, Himalaya Publishing House Pvt. Ltd., Mumbai.
4. Kotler Philip; Keller Kevin Lane; Koshy Abraham & Jha Mithileswar (2009), Marketing Management: A South Asian Perspective, 13th Edition, Pearson Education, New Delhi.
5. Rai Kumar Alok, Customer Relationship Management: Concept & Cases, 1st Edition, 2008, PHI, New Delhi.

C U H I M A C H A L

## Marketing Research

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**Course Code:** MSC 502

**Course Name:** Marketing Research

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce and familiarize students with important aspects of marketing research.
- Examine the characteristics of marketing management from the standpoints of the components of decisions and generic types of decision that have to be made in dynamic business environment.
- Prepare students for critically analyzing the nature of marketing research and its relation to decision making.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation: 5%
  - Marketing Research Design : 5%
  - Marketing Research Action oriented Assignments (Ongoing for the semester): 10 %
  - Presentations on Marketing Research Action oriented Assignments : 5%



**Course Contents:**

**UNIT – I: Marketing Research Information and Technology (4 Hours)**

- The Role of Marketing Research in Strategic Planning
- The Marketing Research Process
- Defining the Marketing Research Problem
- Developing a Marketing Research Approach

**UNIT – II: Marketing Research Design Formulation (5 Hours)**

- Marketing Research design
- Exploratory Research Design in Marketing Research: Secondary data
- Exploratory Research Design in Marketing Research: Qualitative Research
- Descriptive Research Design in Marketing Research: Survey and Observation
- Causal Research Design in Marketing Research: Experimentation

**UNIT – III: Data Collection, Sampling, Analysis & Reporting in Marketing Research (6 Hours)**

- Measurement, Scaling and Questionnaire and Form Design in Marketing Research
- Sampling in Marketing Research
- Data Collection in Marketing Research
- Analysis in Marketing Research
- Case Study in Marketing Research
- Reporting in Marketing Research

**UNIT – IV: Marketing Research in Action (2 Hours)**

- Marketing Research in Action (Brand Switching): Markov Analysis
- Marketing Research in Action: Conjoint Analysis (Marketing)

**UNIT – V: Application of IT in Marketing Research (3 Hours)**

- Application of IT in Marketing Research

### **Prescribed Text Books:**

1. Hair, Joseph F.; Robert P Bush and David J. Ortinau (2002). **Marketing Research: Within a changing Information Environment 2/e**, Tata McGraw Hill: New Delhi.
2. Malhotra, Naresh K. and Satyabhushan Dash (2011). **Marketing Research, 6/e**, Pearson: New Delhi.

### **Suggested Additional Readings:**

1. Aakar, David A; V. Kumar, George S. Day and Robert P. Leone (2011). **Marketing Research, 10/e**, Wiley India: New Delhi.
2. Beri, G. C.(2011). **Marketing Research, 4/e**, Tata McGraw Hill Education Pvt. Ltd.: New Delhi.
3. Green, Paul E., Donald S. Tull and Gerald Albaum (2009). **Research for Marketing Decisions, 5/e**, PHI: New Delhi.
4. Hamel, Jacques; Atephane Dufour and Dominic Fortin (1993). **Case Study Methods**, Sage Publications: New Delhi
5. Hartwig, Frederick and Brian E. Dearing (1979). **Exploratory Data Analysis**, Sage Publications: New London.
6. Kerlinger, Fred N. (2010). **Foundations of Behavioral Research, 2/e**, Surjeet Publications: New Delhi
7. McDaniel, Carl (Jr.) and Roger Gates (2011). **Marketing Research, 8/e**, Wiley India: New Delhi.
8. Saunders, Mark; Philip Lewis and Adrian Thornhill (2014). **Research Methods for Business Students, 5/e**, Pearson: New Delhi.
9. Stake, Robert E. (1995). **The Art of Case Study Research**, Sage Publications: New Delhi
10. Travers, Max (2001). **Qualitative Research through Case Studies**, Sage Publications: New Delhi.
11. Tull, Donald S. and Del I. Hawkins (2011). **Marketing Research: Measurement and Method, 6/e**, PHI: New Delhi.
12. Yin, Robert K. (1984). **Case Study Research: Design and Methods**, Sage Publications: New Delhi

## Industrial Psychology

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**Course Code:** HRM- 512

**Course Name:** Industrial Psychology

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

1. To understand the theoretical aspects of industrial psychology, its relation with other sciences and theories.
2. To gain an insight into the work environment and its effect on an individual.

**Attendance Requirement:** Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Presentation - 10%
  - Class Participation- 5%
  - Quiz/Role Play-5%
  - Library Assignment/Project work: 5%

**Course Contents:**

**UNIT I: Introduction to Industrial Psychology**

**(4 Hours)**

- Concept of Industrial Psychology
- History and Development of Industrial Psychology
- Scope of Industrial Psychology
- Scope of Industrial Psychologist's Work
- Industrial Psychology's Place among Other Related Disciplines

**UNIT II: Hawthorne Experiments**

**(2 Hours)**

- Hawthorne Studies: The Illumination Studies
- Relay Assembly Test Room Study
- Mass Interviewing Programme
- Bank Wiring Room Study

**UNIT III: Individual Context of Human Work**

**(6 Hours)**

- Individual Differences
- Job Analysis
- Psychological Testing
- Tests of Intelligence
- Aptitude and Interest Tests
- Achievement Tests
- Personality Tests

**UNIT IV: Organizational and Social Context of Human Work**

**(4 Hours)**

- Training and Personnel Development
- Employee Attitude and Morale
- Motivation at Workplace
- Job Satisfaction

**UNIT V: Work Conditions and Work Design**

**(4 Hours)**

- Working Conditions-Environment for Work
- Equipment & Work Design: (Human Engineering and Ergonomics)
- Boredom, Fatigue, Monotony: Relieving Boredom, Fatigue and Monotony
- Industrial Accidents and Prevention

**Prescribed Text Books:**

1. Singh, Narendar, 2011, Industrial Psychology, McGraw Hill, New Delhi
2. Ghosh, P.K., and Ghorpade, M. B., 2011, Industrial Psychology, Himalaya Publishing House, Mumbai

**Suggested Additional Readings:**

1. Blum, M.L. and Naylor, J.C., 2004, Industrial Psychology, CBS Publishers & Distributors Pvt. Ltd., New Delhi
2. Tiffin, J. and McCormick, E.J., Industrial Psychology, Fifth Edition, Prentice-Hall India, New Delhi
3. Harrell, T.W., 1967, Industrial Psychology, 2<sup>nd</sup> Indian Reprint, Oxford & IBH Publishing Co., New York
4. Smith, K.L. and Wakeley, J.H., 1972, Psychology of Industrial Behavior, 3<sup>th</sup> Edition, Tata McGraw Hill, New Delhi

## International HRM

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**Course Code:** HRM 515

**Course Name:** International HRM

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to

- Help students in understanding Basic Concept of International Human Resource management
- Make students familiar with expatriates and challenges of expatriation
- To give an exposure to the students for HR activities in International Business

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

4. Mid Term Examination: 25%
5. End Term Examination: 50%
6. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Library Work Assignment: 5 marks
  - Subjective Assignment: 5 marks
  - Quizzes/Games/Puzzles: 5 marks
  - Personality Assessment: 5 marks
  - Live Projects: 5 marks

**Course Contents:**

**UNIT-I: Introduction to IHRM (4 Hours)**

- Introduction- Defining International HRM,
  - Difference between International HRM and Domestic HRM,
  - Models of IHRM
  - Variable that moderate difference between domestic and international HRM.
- Case: Cross-cultural management by William H Picney,CEO Amway India**

**UNIT-II: Staffing in IHRM (4-Hours)**

- Staffing in international operation for sustained global growth
- Approaches to staffing
- The role of an expatriate, return on investment of international assignment, the role of corporate HR function in MNEs.
- Recruiting and selecting staff for international assignment.
- Issues in staff selection
- Selection criteria, female expatriate, dual career couple.
- **Case Study: Jaguar or BlueBird? Mark Chan's decision to stay overseas or Return Home after expatriate assignment(part A)**

**UNIT-III: International Training and Development (4 hours)**

- International Training and Development,
  - Role of expatriate training
  - Components of effective pre-departure training program , effectiveness of pre-departure training
  - International compensation- Objectives of international compensation
  - Key components of international compensation program
  - Approaches to international compensation
- Case study. Wolfgang's Balancing Act: Rewarding Healthcare Executives in a dispersed yet integrated Firm**

**UNIT-IV: Repatriation and Re-entry Issues (5 hours)**

- Re-entry and career issues- Repatriation process
  - Designing a repatriation program.
  - Performance management- Multinational performance management,
  - Performance management of international employees
- Case Study: Jaguar or BlueBird? Mark Chan's decision to stay overseas or Return Home after expatriate assignment( Part B)**

**UNIT-V: International Industrial Relations and current issues (3 Hours)**

- International Industrial Relation,
- Key issues in international industrial relation,

- Research issues in international HRM
- Discussion of research developments in the area of IHRM

**Text Books:**

1. Dowling , P.J., Festing, M., and Engle, A.D.(2012) International Human Resource Management Fifth Edition ,Cengage Learning
2. Aswathappa, K. (2011). International Human Resource Management. Tata McGraw Hill, New Delhi

**Additional Readings:**

1. Edward, T(2011) International Human resource Management. Pearson, New Delhi.
2. Subba Rao, P (2010). International Human Resource Management,First Edition, New Delhi
3. Brewster, C., Sparrow, P and Vernon, G.(2008). International Human Resource Management Universities Press(India).
4. Briscoe, D., Schuler,R. and Claus,L.(2008).International Human Resource Management. Routledge Publication.5<sup>th</sup> Edition.
5. Harzing, A., Ruysseveldt, J.V(2003). International Human Resource Management. Sage Publication.
6. Stahl,G.K and Bjorkman. Handbook of Research in Internation Human Resource Management. Edward Elgar Publishing.
7. Hutching, K and Cieri, H.D.(2007). International Human Resource Management. Ashgate Publishing

## Labour Laws

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**Course Code:** HRM 513

**Course Name:** Labour Laws

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

1. To make students of HR understand the significance of labor laws hold in an organization
2. To provide an insight into the various laws that governs workers and employees employment in an organization

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation- 10%
  - Presentations -10 %
  - Assignment- 05%

**Course Contents:**

**UNIT I**

**6 Hours**

- The Trade Unions Act, 1926
- The Industrial Disputes Act, 1947



**UNIT II:****7 Hours**

- The Industrial Employment (Standing Orders) Act, 1946
- Contract Labour (Regulation and Abolition) Act, 1970
- Apprentices Act, 1961

**UNIT III:****5 Hours**

- Maternity Benefit Act, 1961
- Equal Remuneration Act, 1976

**UNIT IV:****6 Hours**

- Factories Act, 1948
- Mines Act, 1952
- Plantation Labour Act, 1951

**UNIT V:****7 Hours**

- Child Labour (Prohibition and Regulation) Act, 1986
- The Employees State Insurance Act, 1948
- The Payment of Gratuity Act, 1972
- The Employees' Provident Funds & Miscellaneous provision Act, 1952

**Text Books:**

1. Sinha, P.R.N, Sinha, Indu Bala and Shekhar, S.P (2013). Industrial Relations, Trade Unions and Labour Legislation. Dorling Kindersley (India) Pvt. Ltd., New Delhi.

**Additional Readings:**

1. Mamoria, C.B., Mamoria, Satish and Gankar, S, V. (2010). Dynamics of Industrial Relations.
2. Kubendran, V. and Kodeeswari, K. (2011). Industrial Relations and Labour Law. Himalaya Publishing House Pvt. Ltd., Mumbai.
3. Srivastava, S C (2012). Industrial Relations And Labour Laws. Vikas Publishing House, Delhi.
4. Sarma , A.M (2013). Industrial Relations and Labour Laws. Himalaya Publishing House Pvt. Ltd., Mumbai.
5. H.L. Kumar (2013). Labour Laws - Everybody Should Know. Universal Law Publishing Co Pvt Ltd., Delhi.

## Organisation Transformation and Development

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**Course Code:** HRM 525

**Course Name:** Organisation Transformation and Development

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Familiarize students to the potency of behavioural science in managing the change and reenergizing the organisations.
- Understand different interventions that can be used across various cultures with innovative techniques.
- Train students to apply OD interventions for bringing out organisational effectiveness.

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### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Attendance and Class Participation: 10%
  - Presentation: 10%
  - Quiz: 5%

### Course Contents

UNIT I: Organisational Change and its Management

4 Hours

- Nature of Planned Change - Theories
- General Model of Planned Change
- Leading and Managing Change
- Action Research

UNIT II Organisation Development and Organisation Transformation 4 hours

- Organisation Development – History, Concept
- Values, Assumptions and Beliefs of OD
- Organisation Transformation
- Organization transformation vs organization development

UNIT III OD Interventions -I 4 hours

- Definition of Interventions and classification of Interventions
- Individual based interventions – Life and Career Planning
- Transaction Analysis
- Coaching and Counselling and T-Group(Sensitivity Training)

UNIT IV OD Interventions – II 4 hours

- Process Consultations and Role Negotiations
- Fish Bowl and Role Analysis Techniques
- Organisation Mirroring and Third Party Peace Making
- Employee Involvement

UNIT V OD Interventions -III 4 hours

- MBO
- Grid OD
- Confrontation Meeting and Total Quality Management
- Power, Politics and Organisation Development

**Case Study:**

*Black & Decker International: Globalisation of the Architectural Hardware Line (Book 2, pp732-744)*

**Text Books:**

1. Wendell L French and Cecil Bell, Jr.; Organisation Development Behavioural Science Interventions for Organisation Development, Prentice Hall of India Private Limited, New Delhi, 2005
2. Cummings, Thomas G. and Worely, G. Christopher(2005),Organisation Development & Change, Cengage Learning Private Limited, New Delhi
3. French, Wendell L ; Bell,CecilJr. and Zawacki ,Robert A. (2011)Organisation Development and Transformation, Tata McGraw Hill, New Delhi

**Additional Readings:**

1. Ian Palmer, ReichardDunford and Gib Akin; Managing Organisation Change – A Multiple Perspective Approach, Tata McGraw Hill Education Private Limited, New Delhi, 2011
2. V. Nilakant and S. Ramnarayan; Change Management, Response Books, New Delh, 2009
3. Dianne Waddell, Thomas Cummings, Christopher Worley; Organisation Development and Change, Cengage Publication, 2008

## Human Values and Ethics

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**Course Code:** CSR 401

**Course Name:** Human Values and Ethics

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

1. Understand the significance of human values and ethics in achieving excellence at individual and societal level.
2. Internalize the subtleties of being good individuals and citizens without any bias to any particular religion, caste, creed and region.
3. Recognize, nurture and develop their inner and outer capacities enabling them to face the challenges of life with equanimity.
4. Apply values in their day to day interactions and operations.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation- 5%
  - Group Discussion- 10%
  - Case Studies- 5%
  - Role Play- 5%

**Course Contents:**

**UNIT I: Introduction to Human Values and Ethics (4 Hours)**

- Concept, Origin and Relevance of Values in Global Context
- Ethics, Morality and Ethos
- Indian Philosophy and Human Values
- Ethical Dilemmas
- Dominant Indian Values

**UNIT II: Ethics and Values propagated by different Religions and Thinkers (4 Hours)**

- Ethical Views of Kant, Spinoza, Aristotle, Plato, and Kautilya.
- Values Propagated By Different Religions - Hinduism, Islam, Christianity, Buddhism
- Gandhian Values In 21<sup>st</sup> Century

**UNIT - III: Values and Effective Living (4 Hours)**

- Understanding Harmony in the Self
- Harmony in the Society ; Harmony in Nature and Harmony in Existence

**UNIT - IV: Development of Human Values (4 Hours)**

- Self Exploration ; Family level, Good Parenting
- Integral Education
- Professional Ethics
- Interpersonal Effectiveness and Stress Management through Human Interpersonal Effectiveness and Stress Management through Human Values

**UNIT V: Applications of Values and Ethics (4 Hours)**

- Environmental Ethics
- Work Place Spirituality
- Techniques for Inner Capacity Building
- Corporate Social Responsibility

**Prescribed Text Books:**

1. Gaur R.R., Sangal R., Bagaria G.P., (2010). Human Values and Professional Ethics. First Edition. Excel Books, New Delhi.
2. Banerjee, R.P. (2010). Ethics in Business Management: Concepts and Cases. First Edition. Himalaya Publishing House, Mumbai.
3. Balachandran S., Raja K.C.R., and Nair B.K. (2003). Ethics, Indian Ethos and Management. Second Edition. Shroff Publishers, Distributors Pvt. Ltd., Mumbai.

**Suggested Additional Readings:**

1. Bhatia S.K. (2001). Business Ethics and Managerial Values. First Edition. Deep and Deep Publications, New Delhi.
2. Sekhar R.C. (2002). Ethical Choices in Business. Second Edition. Response Books, New Delhi.
3. Chakraborty S.K. (2009). The Management and Ethics Omnibus. Eighth Edition. Oxford University Press, New Delhi.
4. Misra Rajan (2009). Human Values, University Science Press. First Edition. Darya Ganj, New Delhi.
5. Verma Yoginder (2007). Education in Human Values for Human Excellence. First Edition. Kanishka Publishers, New Delhi.

## Basics of Research Methodology

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**Course Code:** SWR 405

**Course Name:** Basics of Research Methodology

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Enable the students to understand basic concepts of Research.
- Enable the students to understand about data collection instruments, sampling and data preparation for analysis.
- Enable the students to understand the use of research techniques- where to use which technique and why

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation: 5%
  - Presentations: 10%
  - Assignment: 10%

## Course Contents

### UNIT – I: Research Process, Problem, Hypothesis Formulation & Research Designs (5 Hours)

- Research, Process, Type, Need and essential
- Formulation of Research Problem
- Nature of Research Design, Formulation of Research Design
- Classification of Research Design

### UNIT – II: Data Collection, Measurement and scaling (6 Hours)

- Secondary Data collection Methods
- Qualitative Methods of Data Collection
- Attitude Measurement and Scaling
- Questionnaire Designing
- Validity and Reliability

### UNIT – III: Respondents Selection and Data Preparation (6 Hours)

- Sampling Considerations
- Data Processing
- T test
- Factor Analysis

### UNIT – IV: Primary Data Analysis and Interpretation-I (6 Hours)

- Univariate and Bivariate Analysis of Data
- Testing of Hypothesis

### UNIT – V: Primary Data Analysis and Interpretation-II (6 Hours)

- Analysis of Variance Techniques ANOVA and MANOVA
- Use of SPSS in ANOVA and MANOVA
- Non Parametric Tests ( with SPSS)
- Writing a Business Research Report

#### Prescribed Text Books:

1. Chawla D. & Sondhi N, (2011), Research Methodology Concepts and Cases, Vikas Publishing House Pvt Ltd, New Delhi.
2. Bajpai N., (2013), Business Research Methods, Fourth Impression, Dorling Kindersley(India) Pvt. Ltd of Pearsons Education, New Delhi.
3. Cooper, Donald R & Schindler, Pamela S (2010), Business Research Methods, 9<sup>th</sup> Edition, McGraw-Hill Companies, New Delhi
4. Ramamurthy G.C., (2012), Research Methodology, Dreamtech Press, New Delhi.
5. Sachdeva JK (2009), Business Research Methodology, Himalyan Publishing House Pvt Ltd, New Delhi.



### **Suggested Additional Readings:**

1. Lee Nick & Lings Ian. (2010). Doing Business Research: A Guide to Theory and Practice, Sage Publications India Pvt Ltd, New Delhi.
2. Krishnaswamy K N; Sivakumar Appa Iyer & Mathirajan M (2006), Management Research Methodology: Integration of Principles, Methods and Techniques, Pearson, New Delhi.
3. Kothari CR(2006), Research Methodology Method and techniques, New Age International Publishers, New Delhi.
4. Gupta SP (2010), Statistical Methods, Sultan chand and Sons, New Delhi.
5. Malhotra Naresh K & Das Satyabhusan (2011), Marketing Research: An Applied Orientation, 6<sup>th</sup> Edition, Pearson Education, New Delhi.
6. Krishnaswamy K N; Sivakumar Appa Iyer & Mathirajan M (2006), Management Research Methodology: Integration of Principles, Methods and Techniques, Pearson, New Delhi.
7. Paneerselvam, 2013, (e. book) Research Methodology, Prentice Hall of India Private Limited
8. Dooley, 2013 4<sup>th</sup> , edition, Social Research Methods, Prentice Hall of India Private Limited
9. Gupta and Gupta, 2013, (e. book) Research Methodology, Prentice Hall of India Private Limited
10. Taylor, 2013, Research Methodology a guide for Management and Social Sciences, Prentice Hall of India Private Limited
11. Ghauri, Latest edition, Research Methods in Business Studies, Pearson, New Delhi.

## Operations Research

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** POM 504

**Course Name:** Operations Research

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Enable the students to understand basic concepts of Management Science/Operation Research.
- Acquaint the students about tools used in Management Science for Decision Making.
- Enable the students to understand the application of Management Science in decision making process related to activity of an organization.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class participation: 5%
  - Presentations: 5%
  - Assignment: 5%
  - Case studies and case lets: 10%

**Course Contents:**

**UNIT – I: Introduction to Management Science**

**(5 Hour)**

- Operations Research: Definition & Characteristics
- The tools of Operations Research
- Operations Research Models

- The management science process
- Managerial problems
- Managerial decision making

**UNIT – II: Linear programming**

**(4 Hour)**

- Meaning of linear programming and Basic concepts
- Graphic solution
- Simple method
- Applications of Linear programming
- Limitations of linear programming

**UNIT – III: Transportation and Assignment**

**(5 Hours)**

- Transportation problem
- Transshipment problem
- Unbalance transportation problem
- Assignment Problem
- Travelling sales man problem

**UNIT – IV: Decision making in Management Science**

**(4 Hours)**

- Decision making under risk
- Decision making under uncertainty
- Decision making under certainty
- Decision making under conflict
- Decision tree

**UNIT – V: Markov Chains, Simulation and Applications of Management Science**

**(2 Hours)**

- Markov Chains
- Simulation
- Application of Management Science/ Operations Research in Industry
- Case studies
- Use of Software's to solve various problems

### Prescribed Text Books:

1. Vohra, N.D. (2007). **Quantitative Techniques in Management(4<sup>th</sup> ed.)**, Tata McGraw-Hill: New Delhi
2. Anderson, David R.; Sweeney, Dennis J. and Williams Thomas A. (2006). **An Introduction to management Science: Quantitative Approaches to Decision Making (11<sup>th</sup> ed.)**, Cengage Learning: New Delhi.

### Suggested Readings

1. Albright, S. Christian and Winston, Wayne L. (2012). **Management Science Modeling (4<sup>th</sup> ed.)**, Cengage Learning: Delhi.
2. Baumol, W. J. (2000). **Economic Theory and Operations Analysis**, PHI: New Delhi
3. Hiller, F.S. and G. J. Liberman (2001), **Introduction to Operations Research (7<sup>th</sup> ed.)**, Tata McGraw-Hill: New Delhi
4. Grayson, C.G. (1973). "Management Science and Business Practice"; Harvard Business Review, Vol.51. Pp.41-48.
5. Hira, D.S. and P.K Gupta (1996). **Operations Research**, S. Chand & Co.: New Delhi.
6. Lee, S. M.(et.al) (1989). **Management Science**, Wm.C.Publishers: Iowa.
7. Murthy, P Rama (2007). **Operations Research (2<sup>nd</sup> edition)**, New Age: New Delhi
8. Panneerselvam, R. (2002). **Operations Research**, Prentice Hall of India: New Delhi
9. Swarup, Kanti, Gupta, P.K and Manmohan (2012). **An Introduction to Management Science: Operations Research**, Sultan Chand & Sons: New Delhi.
10. Taha, H.A. (1992), **Operations Research**, Prentice Hall of India: New Delhi
11. Taylor III, Bernard W. (2007). **Introduction to Management Science, (9<sup>th</sup> ed.)**, Prentice Hall
12. Tulsian, P. C. and Pandey, Vishal (2012). **Quantitative Techniques: Theory and Problems**, Pearson: Delhi.

## Advance Topics in Strategic Marketing & Management

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**Course Code:** MSC 607

**Course Name:** Advance Topics in Strategic Marketing & Management

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/optional work placement; literature survey/ library work; data collection/ field work; writing of papers/projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce and familiarize students with important aspects of Advance Research in Strategic Marketing & Management
- To prepare students for critically analyzing the nature of Advance Research in Marketing Management
- To examine the characteristics of marketing, IT and strategic management from the standpoints of the components of decisions and generic types of decision that have to be made.
- To know the role of Advance Research in Marketing Strategies in what has to be known in Marketing Management.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Semester Examination: 50%
3. Continuous Internal Assessment: 25%
  - Class participation: 4%

- Case Studies: 8%
- Marketing Research Action oriented Assignments in for of Practical Survey: 8 %
- Presentations on IT tools and application: 5%

**Course Contents:**

**UNIT – I: Introduction to Marketing Research (8 Hours)**

- Introduction
- Defining the Marketing Research Problem
- Developing a Marketing Research Approach
- Research design
- Exploratory Research Design: Secondary data
- Exploratory Research Design: Qualitative Research
- Descriptive Research Design: Survey and Observation

**UNIT – II: Marketing Research in Action (8 Hours)**

- Marketing Research in Action (Brand): Markov Analysis
- Marketing Research in Action: Conjoint Analysis (Marketing)

**UNIT – III: Application of IT in Marketing Research (8 Hours)**

- Computer Lab for SPSS / MS-Excel etc
- Web banner and integrating offline channels
- Website planning and designing

**UNIT – IV: Strategic Management & Strategic Marketing Research (8 Hours)**

- Marketing Strategy
- Marketing Strategy in Action
- Strategic Marketing Research Design
- Action Plan for Strategic Marketing Research

**UNIT – V: Internet Based Marketing & its Research (8 Hours)**

- Internet based marketing research
- Online and postal data collection methods
- Alternative to traditional research methods
- E-trust: the influence of perceived interactivity on e-retailing users
- E-relationships – emergence and the small firm
- Marketing communications using digital media channels
- Web Based Types & Marketing Strategies

- Types of WBA
- E-CRM, E-Banking, E-Green Marketing etc
- Social Media Network marketing
- Mobile marketing & Advertising

**Prescribed Text Books:**

1. Dave Chaffey ,Fiona Ellis-Chadwick, Kevin Johnston & Richard Mayer (2009), Internet Marketing: Strategy, Implementation and Practice, 3rd Edition, Pearson Education
2. Lara Fawzy & Lucas Dworski (2011), Emerging Business Online: Global Markets & the power of B2B Internet Marketing, Pearson Education
3. Susan Sweeney, Andy MacLellan, Ed Dorey, 3G Marketing on the Internet: Third Generation Internet Marketing Strategies for Online Success, 7th Edition, Maximum Press
4. Hair, Joseph F., Robert P Bush and David J. Ortinau (2008). Marketing Research: Within a Changing Information Environment (3rd Edition), Tata McGraw Hill: New Delhi.
5. Catherine Juon, Dunrie Greiling & Catherine Buerkle (2012), Internet Marketing Start To Finish, Que Publishing House
6. Internet Marketing Strategies for Online Success, 7th Edition, Maximum Press

**Suggested Additional Readings:**

1. Ramaswamy V.S. & Namakumari S. (2009), Marketing Management: Global Perspective Indian Context, 4th Edition, Macmillan Publishers India Ltd., New Delhi.
2. Kotler Philip; Armstrong Gary; Agnihotri Prafulla Y. & Haque Ehsan Ul (2011), Principles of Marketing: A South Asian Perspective, 2nd Edition, Pearson Education, New Delhi.
3. Bose Biplab S. (2010), Marketing Management, 3rd Edition, Himalaya Publishing House Pvt. Ltd., Mumbai.
4. Kotler Philip; Keller Kevin Lane; Koshy Abraham & Jha Mithileswar (2009), Marketing Management: A South Asian Perspective, 13th Edition, Pearson Education, New Delhi.
5. Aakar, David A; V. Kumar, George S. Day and Robert P. Leone (2011). Marketing Research (10th edition),Wiley India: New Delhi.
6. Beri, G. C.(2011). Marketing Research (4th edition), Tata McGraw Hill Education Pvt. Ltd.: New Delhi.
7. Green, Paul E., Donald S. Tull and Gerald Albaum (2009). Research for Marketing Decisions (5th edition);PHI: New Delhi.

10. Kerlinger, Fred N. (2010). Foundations of Behavioral Research(2nd edition), Surjeet Publications: New Delhi
11. McDaniel, Carl (Jr.) and Roger Gates (2011). Marketing Research (8th edition), Wiley India: New Delhi.
12. Tull, Donald S. and Del I. Hawkins (2011). Marketing Research: Measurement and Method (6th edition);PHI: New Delhi.

C U H I P



# School of Earth & Environmental Sciences

## Department of Environmental Sciences

### School of Earth & Environmental Sciences

Name of the Department: **Department of Earth & Environmental Sciences**

Name of the Programme of Study: **MSc (Environmental Sciences)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	ENV 517	Earth System Science	2	NA	Ambrish Kumar Mahajan
2	ENV 411	Waste Management	2	NA	Dr. Deepak Pant
3	ENV 526	Soil Fertility and Farmland Geology	2	NA	Dr. Anupam Sharma
4	ENV 408	Biodiversity and Wild Life Management	2	NA	Dr. Mushtaq Ahmed
5	ENV 406	Water Resource and Pollution	2	NA	Dr. Subhankar Chatterjee
6	ENV 550	Microbial Ecology	2	NA	Dr. Mushtaq Ahmed
7	ENV 551	Ecosystem Dynamics	2	NA	Dr. Mushtaq Ahmed
8	ENV 552	Analytical Technique (Physical Sciences)	2	NA	Dr. Anupam Sharma /Dr. Anurag Linda
9	ENV 419	Geo Sciences Lab	2	NA	Dr. Deepak Pant
10	ENV 531	Toxicological Lab	2	NA	Dr. Deepak Pant
11	ENV 421	Municipal Solid Waste Management	2	NA	Dr. Subhankar Chatterjee
12	ENV 553	Environmental Thermodynamics	2	NA	Dr. Subhankar Chatterjee

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	ENV 548	Introduction Environmental Impact Assessment	2	NA	Dr. Anupam Sharma
2	ENV 503	Environmental Legislations: National and International	2	NA	Dr. Mushtaq Ahmed

3	ENV 523	Toxic and Hazardous waste Management	2	NA	Dr. Deepak Pant/ Dr. Subhankar Chatterjee
4	ENV 529	Green Chemistry and Environment	2	NA	Dr. Deepak Pant
5	ENV 532	Industrial Training/ Field Work/ Project	4	NA	Dr. Deepak Pant/ Dr. Subhankar Chatterjee
6	ENV 557	Bio-resources and Environmental Biotechnology	4	NA	Dr. Subhankar Chatterjee
7	ENV 558	Applied Microbiology	4	NA	
8	ENV 532	Industrial Training/ Field Work/ Project	4	NA	Dr. Mushtaq Ahmed/ Dr. Subhankar Chatterjee
9	ENV 521	Geo-engineering	2	NA	Dr. Anurag Linda
10	ENV 559	Environmental Geophysics	4	NA	Ambrish Kumar Mahajan
11	ENV 509	Glaciology	4	NA	Dr. Anupam Sharma/ Dr. Anurag Linda
12	ENV 532	Industrial Training/ Field Work/ Project	4	NA	Ambrish Kumar Mahajan /Dr. Anurag Linda/ Dr. Anupam Sharma
13	ENV 560	Meteorology and Climatology	4	NA	Dr. Ankit Tandon
14	ENV 561	Science of Climate Change	2	NA	Dr. Ankit Tandon
15	ENV 532	Industrial Training/ Field Work/ Project	4	NA	Dr. Ankit Tandon

#### **University Wide Courses**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Code No. of Pre-requisite/ Co-requisites if any</b>	<b>Teacher</b>
	ENV 404	Energy and Environment	2	NA	Dr. Ankit Tandon
	ENV 501	Environmental Pollution and Human Health	2	NA	Dr. Subhankar Chatterjee
	ENV 425	Application of Remote sensing and GIS	2	NA	Dr. Anurag Linda

## Energy and Environment

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Name:** Energy and Environment

**Course Code:** ENV 404

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Vision & Objectives:** Energy plays a dominant role in our modern industrial society. Rapid growth of energy consumption has had a noticeable impact on our standard of living as well as on our environment. A clear understanding of the many complex issues involved in energy extraction, conversion, and consumption must now be viewed as essential for the modern educated person. Such an understanding cannot be limited to scientists and engineers. As consumers of energy, as citizens involved in making decisions related to energy and its effects on the environment, as economists, as journalists, and as politicians formulating public policy, we must have knowledge of the issues related to energy and the environment.

The proposed course will address the issues of sources of renewable and non-renewable energy, air pollution and other environmental effects related to energy extraction.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 percent attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

Mid-term Examination: 25%

End-term Examination: 50%

Continuous Internal Assessment: 25%

Break up of Continuous Internal Assessment:

Quiz 1: Before Mid-Semester Examinations: 7.5%

Quiz 2: After Mid-Semester Examination: 7.5%

Assignment & Presentation: Before End-Term Examination: 5% + 5%

**Course Contents:**

**UNIT –I: Energy Need and Fundamental Source of Energy**

**[4 Hours]**

- Growing energy need, Energy use pattern and future need projection in different parts of the world and its impact on the environment.
- Sun as source of energy and nature of its radiation
- Heat budget of the Earth
- Photosynthesis, Flow of Energy in an Ecosystem

**UNIT –II: Energy resources and their exploitation**

**[2 Hours]**

- Conventional and non-conventional energy sources
- Renewable and Non-renewable energy resources

**UNIT – III: Non-renewable Energy Resources**

**[3 Hours]**

- Fossil fuels classification, composition.
- Physico-chemical characteristics and energy content of fossil fuels-coal, petroleum oil and nature gas
- Nuclear Energy: Nuclear-fission and fusion

**UNIT – IV: Renewable Energy Resources**

**[7 Hours]**

- Hydroelectric power
- Solar Energy: Solar collectors, Photovoltaic Cells, Solar ponds
- Wind Energy
- Geothermal Energy
- Tidal Energy
- Energy from biomass and biogas
- Magnetohydrodynamic power (MHD)

**UNIT –V: Environmental Impacts of Energy Generation**

**[4 Hours]**

- CO<sub>2</sub> emission in atmosphere, air, thermal pollution,
- Radioactivity from nuclear reactors,
- Fuel processing and radioactive waste
- Hazards related to hydropower

**Text Books:**

1. Roger A. Hinrichs, Merlin H. Kleinbach (2012), Energy: Its Use and the Environment [Paperback], International Edition of 5th Revised Edition, Thomson Brooks, ISBN-13: 978-1111990831
2. Robert A. Ristinen, Jack P. Kraushaar (2005), Energy and the Environment, 2nd Edition (Paperback), John Wiley & Sons, ISBN-13: 978-0471739890
3. Peter E. Hodgson (2010), Energy, the Environment and Climate Change (Hardcover), Imperial College Press, ISBN-13: 978-1848164154

C U H I M A C H A L

## Biodiversity and Wildlife Management

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**COURSE CODE: ENV 408**

**COURSE NAME: Biodiversity and wildlife management**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Enable students to understand the role of biodiversity in ecosystem functioning.
- The students will acquire knowledge about various threats posed to biodiversity in the current scenario.
- The students will have analysis of different strategies required for the conservation of biodiversity.
- Wildlife being a natural resource and the one with which man has been ever interacting; the students will get themselves equipped with updated knowledge of current management practices used for wildlife management.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Presentation/Quiz : 20%
  - b. Attendance: 5%

## **COURSE CONTENTS:**

### **UNIT (I): Introduction to biodiversity**

**3 hrs**

Species, genetic and ecosystem diversity.

### **UNIT (II): Biodiversity magnitude and distribution**

**5 hrs**

1. Biodiversity and ecosystem function
2. Methods for biodiversity monitoring
3. Documentation of biodiversity
4. Biodiversity Hot spots- concepts
5. Distribution and importance, Biodiversity prospecting.

### **UNIT (III): Threats to biodiversity**

**4 hrs**

1. Threats to biodiversity: Natural and anthropogenic
2. Species extinctions, IUCN threat categories
3. Red data book
4. Invasions- causes and effect.

### **UNIT (IV): Wildlife and its management**

**5 hrs**

1. Significance of wildlife
2. Important wildlife species in different sub regions of India
3. Endangered Plant species of Himalayas
4. Causes of wildlife resource depletion in India
5. Important National Parks
6. Wildlife Sanctuaries and Biosphere reserves in India.

### **UNIT (V): Conservation of biodiversity**

**3 hrs**

1. Principles and strategies; in-situ and ex-situ conservation
2. Protected Area Network

### **Textbooks**

1. Ecology and Environment-P.D. Sharma, 2011 Eleventh Revised Edition
2. Wildlife Biology: R. F. Dasman (1982), Pub. Wiley Eastern Lrd NDL.
3. Wildlife Management Techniques: R. H. Giles (ed.) (1980), Pub. Natural Publ. Dehradun.



### Reference books recommended

- Ecological Diversity and its measurements – Anne E. Magurran, 2003. Blackwell Publications.
- Global Biodiversity Assessment: WRI, IUCN & UNEP- Huntley, B. 1995., Cambridge University Press
- Ecology and Environment-P.D. Sharma, 2011 Eleventh Revised Edition
- Ecology, Environment & Resource Conservation- J.S. Singh, S.P. Singh and S. R. Gupta, 2008
- Wildlife Biology: R. F. Dasman (1982), Pub. Wiley Eastern Lrd NDL.
- Wildlife Management Techniques: R. H. Giles (ed.) (1980), Pub. Natural Publ. Dehradun.
- Environment Concerns and Strategies: T. N. Khushoo, Ashish Pub. House, NDL.
- Ecology and Quality of Environment: C. H. Southwick Dnon Nastrand (1976), New York.

## Waste Management

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code: ENV 411**

**Course Name: Waste Management**

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Understand nature of human induced environmental pollutions like waste, its significance,
- sources, compositions and types.
- Initiate initiatives for integrated/sustainable waste management options.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 per cent attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination : 25 %
2. End Term Examination : 50 %
3. Continuous Internal Assessment : 25 %

(Depending upon the nature of the course, a teacher shall specify the breakup of each criterion into different components like written examination, assignment, case study, quiz, presentation , class participation , panel discussion , group discussion, problem solving exercises, practical etc.)

**UNIT (I): Biodegradable solid waste****4 hrs**

- Chemical composition and classification.
- Source and generation
- Health hazards
- Management Techniques

**UNIT (II): Non Biodegradable Solid waste****8 hrs**

- Sources, generation, chemical composition, classification of plastic waste and its management.
- Sources, generation, chemical composition, classification of e -waste and its management.

**UNIT (III): Hospital and Pharmaceutical Waste****4 hrs**

- Classification
- Source and generation
- Health hazards
- Management Techniques

**UNIT (IV): Waste minimization technologies****4 hrs**

- Reuse/ recycling of different types of waste
- Metal recovery from waste using chemical, biological and hybrid techniques

**Prescribed Text Books:**

1. Kreith, Frank (ed.) (1994) Handbook of Solid Waste Management, McGraw-Hill, Inc., New Delhi.
2. Pant D., Electronic Waste Management Lambert Academic Publishing 2010 (ISBN 978-3-8433-8336-3) .
3. Pant D., Pharmaceutical Waste Management Lambert Academic Publishing 2011 (ISBN 978-3-8454-4089-7)

**Suggested Additional Readings:**

1. Holmes, John R. (ed.) (1983) Practical Waste Management, John Wiley & Sons, New York/Singapore.
2. III. Harrison, M. Roy (ed.) (1995) Pollution; Causes, Effects and Control. The Royal Society of Chemistry, Cambridge cb4 4wf.

**Research paper:**

1. Pant D.: "Waste Management in Small Hospitals Trouble for Environment" (2011) Environmental Monitoring and Assessment (Springer) DOI: 10.1007/s10661-011-2276-3.
2. Pant D., Joshi D., Upreti M. K. and Kotnala R. K. "Chemical and biological Extraction of Metals Present in E waste: A Hybrid Technology" (2012) Waste Management (Elsevier Science) 32,979-990.
3. Pant D, Singh R., Kumar S "Management of Waste Poly Vinyl Chloride (PVC) through Chemical Modification" (2012) J Sc Ind Res 71, 181-186

C U H I M A C H A L

## Applications of Remote Sensing and GIS

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 425

**Course Name:** Applications of Remote Sensing and GIS

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

1. Introduce students to the fundamental of Remote Sensing and Geographical Information System (GIS), their various components and how these tools can be used for environmental studies.
2. Introduce the use of GIS for natural resource management and conservation.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  - a. Assignment/Quiz/Term Paper: 20%
  - b. Presentation/Seminar/Field work: 20%
  - c. Practical: 60%

**Course Contents:**

**UNIT (I): Fundamentals**

**4 hrs**

- Different elements of remote sensing
- Physics of remote sensing
- Electromagnetic radiations, EMR spectrum, Atmospheric Windows,
- Spectral Signatures

## **UNIT (II): Image Data Acquisition**

**4 hrs**

- *In situ* and Remotely sensed data collection
- Analog image digitisation,
- Collection of remotely sensed data
- Digital Image data formats

## **UNIT (III): Image Analysis**

**4hrs**

- Visual interpretation of images
- Digital processing of images
  - Preprocessing
  - Enhancement
  - Transformations,
  - Classification
  - Integration

## **UNIT (IV): Introduction to GIS**

**4hrs**

- Hardware components of a GIS
- GIS software and its functional groups
- Encoding formats
- Introduction to GPS and ground truthing

## **UNIT (V): Applications**

**4hrs**

- Resource Exploration
- Environmental applications
- Land use and land cover analysis
- Natural Hazards.

### **Text Books:**

1. **John R. Jensen:** Introductory Digital Image Processing, **Prentice Hall.**
2. **Floyd F. Sabins, Jr.:** Remote Sensing, Principles and Interpretation, **W. H. Freeman and Company.**
3. **Peter A. Burrough and Rachael A. McDonnell:** Principles of Geographical Information Systems, **Oxford University Press.**

**Additional Readings:**

4. **N.K.Agarwal**: Essentials of GPS, *Spatial Network Pvt.*
5. Fundamental of Remote Sensing, Canada Centre for Remote Sensing, *CCRS Web site.*
6. **Lillesand & Keifer.John**: Remote Sensing & Image Interpretation, *Wiley & Sons.*
7. **James B. Campbell, Randolph H. Wynne**: Introduction to Remote Sensing, *Guilford Publications.*
8. **J.R.Jensen**: Remote Sensing of the Environment, *Pearsons education Pub.*
9. **George Joseph**: Fundamental of Remote Sensing, University *Press, India.*

C U H I M A C H A L

## Himalayan Geology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course code: ENV 428**

**Course Name: Himalayan Geology**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Aim:** The main thing is to introduce the student to concepts and applications of geophysics to solving environmental and engineering problems.

**How course activities and course structure help students achieve these goals:**

The course is designed to give them the background knowledge and practice using several methods in order to encourage them to think about the utility of geophysics in the solution to problems of an environmental nature. The student will also summarize and critique recent publications in the fields of Himalayan geology.

**Course Objective**

The student will deal with different aspects of Himalayan Geology and how Himalaya has been originated. The student will analyze and integrate the physical features, field methodology, and interpretation of structural and tectonic features to conclude how Himalaya has been formed.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.



### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  - c. Assignment/Quiz/Term Paper: 20%
  - d. Presentation/Seminar/Field work: 20%
  - e. Practical: 60%

### **Course content**

Unit-1 Internal structure of Earth, Internal structure of Earth, fundamental characteristics of crust, mantle, core; fundamentals on rock-forming minerals; weathering and erosion of rocks and minerals. Concept of plate tectonics, types of plate boundaries, features of convergent and divergent boundaries, causes of plate motion, dynamic evolution of continental and oceanic crust, Sea floor spreading, morphological features of ocean floor.

**4 hrs**

Unit-2 Geosynclines: Classification and evolution of Geosyncline, causes of subsidence and upliftment. Continental drift. Taylor's and Wegner's theories of continental drift, evidences of continental drift and polar wandering.

**4 hrs**

Unit-3 Earth's surface features. Seismology: seismic waves, intensity and isoseismic lines, earthquake belts. Earthquake zones of India, Seismograph, causes of earthquake. Internal structure of the Earth.

**4 hrs**

Unit-4 Origin and structures of Alpine-Himalayan belt, different phases in evolution of Himalayas. Study of major groups and formations of Himalayas, lithology and thrust boundaries - HFF( Himalayan frontal fault), MBT(main boundary thrust), MCT( main central thrust), STD(south Tibetan detachment), indo-Tsangpo suture zone. **4 hrs**

Unit-5 Longitudinal and latitudinal division of Himalayas on map of India. Map of earthquake zones of India. Map of Orogenic belts of India. Construction of lithologs of a mapped unit. Study of topographic map, location , and orientation of toposheet. **4 hrs**

## Recommended Books

1. Condie, K.C. (1984). Plate Tectonics & crustal Evolution. Pregamon Press, London.
2. A.K., Biyani, (2007), Dimensions of Himalayan Geology.
3. Earth: Introduction to Physical Geology, Fifth addition. Prentice Hall Pub.
4. The Geology of earthquake by Robert Yeats, Kerry Sieh and Clarence R. Allen Oxford University Press.
5. Geology of India and Burma M.S. Krishnan 1968 addition, Higginbothams (p) limited
6. Earthquake ( forecasting and mitigation) by H.N. Srivastava , National Book Trust, India

C U H I M A C H A L

## Environmental Pollution and Human Health

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 501

**Course Name:** Environmental Pollution and Human Health

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to know kinds and causes of Environmental pollution in twenty first century.
- The students will acquire knowledge of adverse effects of pollution on Human Health.
- Explore the concepts related to monitoring and assessment of Environmental pollution and Human Health.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)

- a. Quiz/Class test: 40%
- b. Presentation/ Assignment: 20%
- c. Project: 40%

**Course Contents:**

**UNIT (I):**

**4 hrs**

Brief introduction about environmental pollutants and their detrimental effects. Endocrine Disrupting Chemicals: sources, uses, health effect with detail biological mechanism.

**UNIT (II):**

**4 hrs**

Radiation and Human Health, different sources of exposure of Radiation to human beings- atomic, ultraviolet, electromagnetic radiation. Impacts of Radiation on Human Health. Basic mechanism of radiation's effect on human health.

**UNIT (III):**

**4 hrs**

Thermal Pollution and Human Health, Magnitude of Thermal Pollution in India, Coal based and Gas based thermal pollution.

**UNIT (IV):**

**4 hrs**

Heavy metal contamination: sources, uses, health effect with detail biological mechanism. Source, distribution and effect of MSG in human health.

**UNIT (V):**

**4 hrs**

Noise Pollution: Sources and Magnitude, Noise Standards, Biomedical aspects of Noise Pollution.

## TEXTBOOKS

1. Mahajan, S.P. Pollution Control in Process industries. Tata Mc Graw Hill Pub. Co Ltd. New Delhi.
2. Rao, C.S. 2009. Environmental Pollution Control Engineering. Wiley Eastern Ltd., New Delhi

## REFERENCE LITERATURES

1. C. Frye et. al. 2012, Endocrine disrupters: a review of some sources, effects, and mechanisms of actions on behavior and neuro-endocrine systems. *J Neuroendocrinol.* January; 24(1): 144–159.
2. Shinji Fushiki. 2013. Radiation hazards in children – Lessons from Chernobyl, Three Mile Island and Fukushima-Review. *Brain & Development*, 35, 220–227.
3. Magda Havas. Biological Effects of Low Frequency Electromagnetic Fields. CHAPTER 10, *Electromagnetic Environments and Health in Buildings*. Spon Press, London, 535 pp.
4. Stephen A Stansfeld and Mark P Matheson. 2003. Noise pollution: non-auditory effects on health. *British Medical Bulletin*;; 68: 243–257.
5. Bates, D.V. 1980. The health effects of Pollution. *J Respire. Dis.* 1 : 29-37
6. De Gruigle, F.R. 1997. Health Effects from solar UV radiations. *Radiation Protection*

## Environmental Legislation: National and International

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**Course Code: ENV 503**

**Course Name: Environmental Legislation: National and International**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed:

- To familiarize the students with fundamental right to clean environment and duties.
- The students will realize and underline the need for environmental legislations, and legislative powers of the Parliament.
- Students will acquire knowledge about different Environmental legislations at national level and conventions/protocols/treaties for conservation of Environment at international level.
- Students will learn about the Environmental legislation enforcement authorities, Environmental dispute redress bodies and the International Organizations for Conservation of Environment.

**Attendance Requirement:**

Students are expected to attend all the lectures pertaining to the Course. To appear in the examination, a minimum of 75% attendance is compulsory.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Presentation/ Quiz: 20%
  - Class attendance: 5%

## **COURSE CONTENT**

### **UNIT (I) Environmental Legislations In India**

**3 hrs**

1. Introduction to Environmental Law
2. Powers of the Parliament to enact Environmental legislations.
3. Status of Environmental legislations in India

### **UNIT (II) Legislation Enforcement Authorities Prescribed under Different Acts**

**3 hrs**

1. The Environmental water (Prevention and Control of Pollution) Act, 1974: Central, State and Joint Boards for the prevention and control of air pollution– constitution, powers and functions.
2. The Air (Prevention and Control of Pollution) Act, 1981: Central and State Boards for the prevention and control of water pollution – constitution, powers and functions.
3. The Environment (Protection) Act, 1986: Central Government- powers and functions, EIA Notification, 2006.

### **UNIT (III) Environmental Legislations and dispute redress Bodies prescribed under different Acts**

**5 hrs**

1. The Wildlife (Protection) Act, 1972: objectives; National Board for Wildlife (NBWL).
2. The Forest (Conservation) Act, 1980 (with amendments made in 1988); Forest (Conservation) Rules, 2003 (with amendments made in 2004).
3. The Biological Diversity Act, 2002: National Biodiversity Authority, State Biodiversity Board.
4. National Green Tribunal Act, 2010.

### **UNIT (IV) International environmental organizations**

**3 hrs**

1. United Nations Environment Programme (UNEP)
2. World Wide Fund for Nature (WWF)
3. International Union for Conservation of Nature (IUCN))

### **UNIT (V) International environmental conventions/ protocols/ treaties**

**6 hrs**

1. Ramsar Convention on Wetlands.
2. United Nations Conventions and Protocols on Climate Change, Ozone depletion, Biodiversity and Forest
3. Agenda -21.

## **TEXTBOOKS**

1. Environmental Laws, 2005. Universal Law Publishing.
2. S.C. Santra, 2005, Environmental Science, New Central Book Agency (P) Ltd 8/1 Chintamani Das Lane, Kolkata- 700009

## **REFERENCE BOOKS**

1. S. Diwan and A. Rosencranz, 2005, Environmental Laws and Policy in India.
2. Mallick, M. R. (Justice) 2010. Environmental Laws, Professional Book Publisher New Delhi
3. Rana S. V. S. 2005, Essentials of Ecology and Environmental Science, Prentice Hall of India Pvt. Ltd. New Delhi.

C U H I M A C H A L



## Glaciology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code: ENV 509**

**Course Name: Glaciology**

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

1. To introduce the subject (Glaciology) to students and various approaches of glaciology, different variants of glacial systems and morphology and structures of glaciers.
2. To study glacial processes and associated landforms and their significance.
3. Understanding glacial erosion and various hydrological processes
4. Recent researches in the field of Glaciers and their use in water resources and palaeoclimatic studies

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

Mid Term Examination: 25%

End Term Examination: 50%

Continuous Internal Assessment : 25% (Breakup is following)

Assignment/Quiz/Term Paper: 20%

Presentation/Seminar/Field work: 20%

Practical: 60%

**Course contents**

UNIT (I): Glaciology Introduction:

**8 hrs**

Types of glacier

Transformation of snow to ice

Conditions favourable for glacier formation

Glacier systems

Structure and morphology of glaciers

Glacial erosion

Landscape evolution and different glacial landforms

UNIT (II): Glacier Mass Balance and Processes

**12 hrs**

Surface mass balance

Mass balance variations of mountain glaciers

Englacial mass balance

Basal mass balance

Mass loss by calving

Methods of determining glacier mass balance.

UNIT (III): Glacier Hydrology

**6 hrs**

Surface hydrology

Englacial hydrology

Subglacial Hydrology

Runoff from glaciers

Methods of determining glacial runoff

Glacier and water resources

UNIT (IV): Recent Advances in Glaciology

**10 hrs**

Glacial remote sensing

Reaction of glaciers to environmental changes

Glacier Hazards

Palaeo - climatology

Glacial surges

Different instruments used for studying glacier change

UNIT (V): Status of Glaciological Research

**4hrs**

A global overview

Indian scenario

Polar Research (Arctic and Antarctic scientific expeditions)

**Text Books:**

Kurt M. Cuffey & W. S. B. Paterson, (2010): The Physics of Glaciers, Fourth Edition, Elsevier, ISBN No. 9780123694614.

Encyclopedia of Snow, Ice and Glaciers (2011): Springer, ISBN No. 9789048126415.

Robert Sharp: (1988): Glaciers, First Edition, Cambridge University Press, ISBN: 978-0521330091.

**Additional Readings:**

Bryn Hubbard, Neil F. Glasser (2005): Field Techniques in Glaciology and Glacial Geomorphology, John Wiley & Sons.

M. J. Hambrey, Jürg Alean By M. J. Hambrey, Jürg Alean ( 2004): Glaciers ,Cambridge University Press.

David M. Mickelson, John W. Attig (1999): Glacial Processes Past and Present, Geological Society of America.

Matthew M. Bennett, Neil F. Glasser (2011): Glacial Geology: Ice Sheets and Landforms, John Wiley & Sons.

Peter G. Knight (2008): Glacier Science and Environmental Change, John Wiley & Sons.

Strahler Alan, Strahler Arthur (2007): Physical Geography, Wiley India Pvt Ltd.

Douglas I. Benn, David J. A. Evans (2010): Glaciers & Glaciation, Oxford University Press, USA.

M. J. Hambrey (1994) : Glacial Environments, UCL Press.

W. Kenneth Hamblin & Eric H. Christiansen (2003): Earth's Dynamic Systems (10th Edition), Prentice Hall.

Georg Kaser, Andrew Fountain and Peter Jansson (2003): A manual for monitoring the mass balance of mountain glaciers, IHP-VI, Technical Documents in Hydrology, No. 59, UNESCO, Paris.

Ostrem, G. & Brugman M (1991): Glacier mass balance measurements, a manual for field and office work, NHRI Science Report No. 4.

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**Course Code: ENV 517**

**Course Name: Earth System Science**

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

1. Introduce the subject of Earth-System to students
2. Understanding the earth materials and their classification
3. Understanding the fundamental earth processes and their products
4. Interaction amongst different earth spheres
5. Evolution and Life forms of the geological time

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  - a. Assignment/Quiz/Term Paper: 20%
  - b. Presentation/Seminar/Field work: 20%
  - c. Practical: 60%

## **Course contents**

### **UNIT (I): Earth in relation to Universe and Solar System**

**4 hrs**

Concept of System; Open and closed system; Feedback; Concept of growth and Residence time.  
Basic information on life and evolution; Geological Time Scale and Major Geological events.

### **UNIT (II): Introduction to rocks and minerals**

**4 hrs**

Different types of rocks and their characteristics, Rock cycle, water cycle. Internal structure of Earth, fundamental characteristics of crust, mantle, core; fundamentals on rock-forming minerals; weathering and erosion of rocks and minerals.

### **UNIT (III): Sediment- Clastic and non-clastic rocks**

**4 hrs**

Textures, mineralogy, classification and origin of sedimentary rocks.  
Sediment formation-mechanical and chemical weathering.  
Heavy minerals and Provenance study.

### **UNIT (IV): Global Geodynamics**

**4 hrs**

Concept of uplift, Exhumation, elevation.  
Concept of slope, its stability and geomorphology.  
Interactions amongst lithosphere-hydrosphere-biosphere-atmosphere-tectonics.

### **UNIT (V): Life and its evolution**

**4 hrs**

Indian stratigraphic record.  
Tectonics of Himalaya.  
Toposheet and geological map reading.

#### TEXT BOOKS

1. Grotzinger J. Understanding Earth. W H Freeman also McMillan, ISBN-13: 978-1-4292-1951-8.
2. Jacobson M C, Charlson R J, Rodhe H, and Orians G H 2000. Earth System Science. San Diego, CA Academic Press, ISBN 0-12-379370-X.
3. Earth System, 3rd Edition, Prentice Hall, ISBN-13: 978-0321597793.

#### REFERENCE BOOKS

1. Skinner B J, Porter S C, and Park J. The Dynamic Earth: An Introduction to Physical Geology. 5th Edition. John Wiley & Sons, Inc, ISBN: 978-0-471-15228-6.
2. Windley B F. The Evolving Continents. John Wiley & Sons, New York, ISBN 0783782772, 9780783782775.
3. Huddart D and Stott T. Earth Environments: Past, Present and Future. John Wiley & Sons, ISBN: 978-0-471-48532-2.
4. Lawson D and Schubert T G, 2002. Geodynamics. Cambridge University Press, ISBN 0521666244; 9780521666244
5. Wyllie, P J. The dynamic earth: textbook in geosciences. Volume 14, Wiley & Sons, ISBN 13: 9780471968894
6. Srikantia S V and Bhargava O N. Geology of Himachal Pradesh. Geological Society of India, ISBN 8185867321 (81-85867-32-1).

## Geo-Engineering

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course code: ENV 521**

**Course Name: Geo-Engineering**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Aim:** The main thing is to introduce the student to concepts and applications of geophysics to solving environmental and engineering problems.

**How course activities and course structure help students achieve these goals:**

The course is designed to give them the background knowledge and practice using several methods in order to encourage them to think about the utility of geophysics in the solution to problems of an environmental nature.

### **Course Objective**

The student will deal with different geo-engineering techniques are used by industry and academia to solve environmental problems. The student will analyze and integrate the physical theory, field methodology, and interpretation of each method with geologic and engineering information to solve problems using real data sets. The student will also summarize and critique recent publications in the fields of engineering and environmental geophysics.

### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  1. Assignment/Quiz/Term Paper: 20%
  2. Presentation/Seminar/Field work: 20%
  3. Practical: 60%

**Course content**

- Unit-1 Importance of geology in civil engineering: geological properties of rocks used in civil engineering- porosity, density, absorption. Effects of load imposed on rocks and stones - compressive stress and strength of rocks, tensile stress, tensile strength, elasticity of rocks. Geological properties of stones and road materials. **4 hrs**
- Unit-2 Geological considerations in construction of dams, its parts and its types. Silting and de-silting of dam reservoirs. Types of bridges and tunnels and geological considerations for construction of tunnels and Bridges. **4 hrs**
- Unit-3 Landslides and classification, its causes and effects. Slope ,slope angle, and slope analysis, angle of repose. **4 hrs**
- Unit-4 Problems of ground water in engineering projects. Geo technical study of Bhakra Nangal projects. **4 hrs**
- Unit-5 Instrumentation in Geo-engineering like Standard penetration test, Spectral analysis of surface waves and Multichannel analysis of surface waves for shear wave velocity/ stiffness of the soil column and their applications Case studies with type examples **4 hrs**

**Text Books:**

1. Parbin Singh: Engineering and General Geology. KatsonPubl House
2. Sharma, P.V., (1986). Geophysical Methods in Geology. Elsevier, London
3. Kryine, D.H. and Judd, W.R. (1998). Principles of Engineering Geology, CBS Edition, Delhi.

**Additional Readings:**

4. Valdiya, K.S., (1987). Environment Geology-Indian Context. Tata Mcgraw Hill. N.Delhi.
5. Geotechnical earthquake Engineering by Kamer S.L. 2003. Prentice Hall Publ.



## Toxic and Hazardous Waste Management

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code: ENV-523**

**Course Name: Toxic and Hazardous Waste Management**

**Credit Equivalent:** 4 credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

1. introduce students to the fundamental concepts of toxic and hazardous waste;
2. provide knowledge about the identification of various toxic and hazardous waste;
3. Introduce Management techniques for toxic and hazardous waste.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 per cent attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination : 25 %
2. End Term Examination : 50 %
3. Continuous Internal Assessment : 25 %

( Depending upon the nature of the course , a teacher shall specify the breakup of each criterion into different components like written examination , assignment , case study , quiz , presentation , class participation , panel discussion , group discussion, problem solving exercise s, practical , etc.)

**Unit (I): Toxic Properties of Chemical Substances** **4 hrs**

- pathway of entry;
- detoxication
- bioactivation.

**Unit (II): Physical properties of toxic and hazardous waste** **4 hrs**

- vapour pressure,
- Vapour density
- solubility.

**Unit (III): Toxic and hazardous characteristic various organic chemicals** **8 hrs**

- acids,
- aldehydes,
- amines,
- Dioxins,
- Ethers,
- Cyanides.

**Unit (IV): Cancer-Causing Chemicals** **4 hrs**

- Concept of carcinogenesis
- Mechanism of chemical carcinogens
- Human carcinogens

**Unit (V): Common Toxic, and Flammable Gases:** **4 hrs**

- Hydrogen
- Carbon mono and dioxide
- Nitrogen Oxide

**Unit (VI): Biochemical aspects of** **8 hrs**

- Arsenic,
- Cadmium,
- Lead,
- Mercury,
- Carbon monoxide,

**Unit (VII): Hazardous Properties of Some****4 hrs**

- Insecticides
- Asbestos,
- Flyash,
- Ozone and PAN pesticides,
- Chemical and Biological agents including warfare Agents

**Unit (VIII): Management techniques for toxic and hazardous waste****4 hrs****Prescribed Text Books:**

1. Patnaik P., A Comprehensive Guide to the Hazardous Properties of Chemical Substances ( III Ed.) John Wiley & Sons, Inc., Hoboken, New Jersey
2. Moffatt H K and Shuckburgh, Environmental Hazards, Imperial College Press.( ISBN 978-981-4313-28-5)

**Suggested Additional Readings:**

1. Batty LC and Hallberg K B, Ecology of Industrial Pollution , Cambridge University press, New Delhi.
2. Oloman C, Material and Energy Balance for Engineers and Environmentalist, Imperial College Press.( ISBN 978-1-84816-368-3).
3. Yen T F, Chemical Processes for Environmental Engineering, Imperial College Press.( ISBN 978-1-86094-759-9).
4. Madu C N, Environmental Planning and management, Imperial College Press.( ISBN 978-1-86094-671-4).
5. Health Hazards of Environmental Arsenic Poisoning, Imperial College Press.( ISBN 978-981-4291-81-1).

## Water Harvesting in Hilly Region

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 540

**Course Name:** Water Harvesting in Hilly Region

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce the concept water resource management and its movement through the hydrological cycle
- Understand the distribution of surface and groundwater resources.
- Understand basic concepts and methods for rain water harvesting and its use for agriculture, drinking etc.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  - a. Assignment/Quiz/Term Paper: 20%
  - b. Presentation/Seminar/Field work: 20%
  - c. Practical: 60%

## Course Contents:

### UNIT I

4 hrs

- The basis of water harvesting, History and perspectives
- Definitions and classification
- Basic categories of water harvesting systems
- Overview of main water harvesting systems

### UNIT II

4 hrs

- Water requirements of crops and trees
- Water requirements of Rangeland and fodder
- Soil Texture, Structure, Depth, Fertility, Salinity & Sodicity
- Infiltration Rates

### UNIT III

4 hrs

- Precipitation requirements for water harvesting
- Rainfall/ Snowfall/ Dew characteristics
- Rainfall and Runoff relationship
- Experimental techniques for precipitation measurement

### UNIT IV

4 hrs

- Design model for catchment
- Cultivated area ratio, Crop production systems
- Examples on how to calculate the ratio C: Ca, Systems for trees
- Systems for rangeland and fodder

### UNIT V

4 hrs

- Water harvesting techniques, Site and technique selection
- Roof Top Harvesting
- Micro catchments and Contour ridges for crops
- Different types of bunds

### Text Books:

1. **Heather Kinkade-Levario**, (2007): Design for Water: Rainwater Harvesting, Stormwater Catchment, and Alternate Water Reuse, **New Society Publishers**, ISBN: 9780865715806.
2. **Piyooch Rautela, M. L. Dewan**, (2007): Water Resources in The Himalayas: Harvesting, Tradition and Change, **Concept Publishing**, ISBN: 9788170228042.
3. **Ljljana Baird**, (2011): How to 'Harvest' Water: The Art of Saving Water, **National Trust**, ISBN: 9781907892004

**Additional Readings:**

1. **UNEP**, (2009): Rainwater Harvesting: A Lifeline for Human Well-Being, **United Nations Environment Programme**, ISBN: 9789280730197.

CUHP

## Techniques of Artificial Water Recharge in Hilly Regions

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 541

**Course Name:** Techniques of Artificial Water Recharge in Hilly Regions

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Know the importance of Ground water resource.
- Understand different techniques for artificial recharge of ground water.
- Understand different structures as well as some of the traditional practices prevalent in this country for artificial recharge of ground water.
- Train the students to prepare a water footprint and help in managing water resources in a better way

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  - a. Assignment/Quiz/Term Paper: 20%
  - b. Presentation/Seminar/Field work: 20%
  - c. Practical: 60%

**Course Contents:**

**UNIT I**

**4 hrs**

- Introduction & Background
- Water Resources Development Scenario
- Global and Indian Water Scenario
- Historical Perspective & Emerging Challenges

**UNIT II**

**4 hrs**

- Concept of Recharge & Need for Artificial Recharge
- Purposes and Principles of Artificial Recharge
- Advantages of Artificial Recharge
- Implementation of Artificial Recharge Schemes

**UNIT III**

**4 hrs**

- Rainfall
- Runoff
- Rainfall vs Runoff
- Quality of Source Water

**UNIT IV**

**4 hrs**

- Artificial Recharge Techniques
- Direct Methods
- Combination Methods
- Ground Water Conservation Techniques

**UNIT V**

**4 hrs**

- Concept of Roof Top Rainwater Harvesting
- Components of Roof Top Rainwater Harvesting System
- Physical, Biological and Chemical Compatibility of Water
- Maintenance of Roof Top Rainwater Harvesting System



**Text Books:**

1. **Patel, A. S., Shah, D. L.,** (2007): Water Management: Conservation, Harvesting and Artificial Recharge, **New Age International**, ISBN: 9788122422245.
2. (2001): Standard Guidelines for Artificial Recharge of Ground Water, EWRI/ASCE 34-01 illustrated ed Edition, **American Society Of Civil Engineers**, ISBN: 9780784405482.
3. **Huisman, L.,** (1982): Artificial Groundwater Recharge (Monographs and surveys in water resources engineering) ISBN: 9780273085447.

**Additional Readings:**

1. **CGWB,** (2007): Manual on artificial recharge of ground water, Ministry of Water Resources, **Central Ground Water Board**.Govt. of India.

## Introduction to Environmental Impact Assessment

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code: ENV 548**

**Course Name: Introduction to Environmental Impact Assessment**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Introduce the students to basics of EIA
- Students will be familiarized with EIA methodology
- Students will also be exposed to functions of natural/anthropogenic activities on environment
- Students will learn about EIA policy, control and mitigation strategies

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%

(Depending upon the nature of the course, a teacher shall specify the breakup of each criterion into different components like written examination, assignment, field study, seminar/ presentation, class participation, problem solving exercises, practicals etc.)

## **Course Contents**

<b>UNIT (I): Basics of Environment</b>	<b>4 hrs</b>
Definition of Environment Physical, chemical and biological components Socio-Economic and cultural implications of environment	
<b>UNIT (II): Scope of Environment</b>	<b>4 hrs</b>
Natural and anthropogenic processes and their impact on local, regional and global scale Short and long-term impacts on Environment. Concepts of carrying capacity and strategies to address common goals.	
<b>UNIT (III): Scope of EIA</b>	<b>4 hrs</b>
Concept of Environment Impact Assessment (EIA) Aims and objectives of EIA National environmental policy and statutory requirements of EIA	
<b>UNIT (IV): Tools and Techniques used for EIA</b>	<b>4 hrs</b>
EIA-Methodology Scope of EIA and its implications	
<b>UNIT (V): Application of EIA</b>	<b>4hrs</b>
Environmental monitoring and audit Alternate strategies and mitigation measures Case studies	

**Prescribed Text Books:**

1. Peter Wathern (2002). Environmental Impact Assessment: Theory and Practice; Routledge; ISBN 0203409973, 9780203409978
2. Alan Gilpin (1995). Environmental Impact Assessment: Cutting Edge for the 21st Century. Cambridge University Press; ISBN 0521429676, 9780521429672

**Reference Books**

1. **Betty Marriott (1997)**. Environmental Impact Assessment: A Practical Guide. **McGraw Hill Professional**, 1997; ISBN 0070404100, 9780070404106
2. **Langmuir D. (2003)**. Environmental Impact Assessment: A Comparative Review. **Prentice Hall**; ISBN-058236969X, 9780582369696

## Microbial Ecology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 550

**Course Name:** Microbial Ecology

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Make novel inquiries into our current understanding of the microbial diversity over the globe that is growing exponentially with the discovery and implementation of Molecular Phylogenetic techniques to investigate different aspects of the Microbial World.
- Acquire knowledge about the microbes that occupy and adopt to niches within habitats in much the same way that animals and plants do, but their ability to acquire new metabolic functions through horizontal gene transfer can lead to dynamic niche boundaries.
- Enhance our understanding of the microbial communication, activities and interactions in order to achieve environmental stability in the face of global warming and climate change.
- Search for novel microbes inhabiting extreme environments and exhibiting immense genetic variability that may be of great significance for agriculture, medicine and industry.

**Attendance Requirement:**

Students are expected to attend all the lectures pertaining to the Course. To appear in the examination, a minimum of 75% attendance is compulsory.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Presentation/Quiz: 20%
  - Class attendance: 5%

### **Course Contents:**

#### **UNIT (I): Microbial Ecology: An Overview 2 hrs**

1. Introduction
2. Historical aspects
3. Current perspective and scope

#### **UNIT (II): Diversity of Microorganisms 6 hrs**

1. General characteristics of microorganisms
2. Structural aspects of Bacterial, Archeal, Fungal, Algal and Viral diversity.

#### **UNIT (III): The Microbial Habitat: An Ecological Perspective 5 hrs**

1. Introduction
2. The Microbial Niche
3. Aquatic, Soil, Rock, Cave and Atmospheric microbial habitats

#### **UNIT (IV): Microbial Population Ecology 2 hrs**

1. Population Growth and Dynamics
2. Horizontal Gene Transfer

#### **UNIT (V): Microbial Community Ecology 5 hrs**

1. Introduction
2. Dominant issues in Microbial Community Ecology
3. Metagenomics: A new tool to address the issues in Community Ecology
4. Biomats and Biofilms
5. Changes in Community structure during Biofilm Succession
6. Formation of organized Communities: Quorum Sensing

## Textbooks

1. Larry L. Barton, Diana E. Northup, 2011. Microbial Ecology, Wiley-Blackwell A John Wiley and Sons INC., Publications.
2. Environmental Microbiology, Raina M. Maier, Ian L. Pepper, Charles P. Gerba, 2009. (2<sup>nd</sup> Edition), Academic Press.

## Reference Books

- Prescott, Harley and Klein's 2008. Microbiology (seventh edition), McGraw Hill G. Bitton, 2005, Wastewater Microbiology (3<sup>rd</sup> Edition), John Wiley and Sons
- Text Book of Environmental Microbiology, Pradipta K. Mohapatra; Publisher: I.K. International Publishing House Pvt. Ltd. S-25, Green Park Extension Uphaar Cinema Market, New Delhi- 110016.
- Environmental Microbiology Alan H. Varnam & Malcolm G. Evans; Publisher- Manson Publishing Ltd. 73 Corringham Road London NW 11 7DL, UK.
- P. D. Sharma, 2011. Microbiology (2<sup>rd</sup> Edition), Rastogi Publications
- Journal : *Nature*

## Analytical Technique (Physical Sciences)

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 552

**Course Name:** Analytical Technique (Physical Sciences)

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to familiarize students with the:

- Analytical Techniques used for the analysis of Environmental Samples collected from Atmosphere, Hydrosphere and Lithosphere.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%

Break up of Continuous Internal Assessment:

Quiz 1: Before Mid-Semester Examinations: 7.5%

Quiz 2: After Mid-Semester Examination: 7.5%

Assignment & Presentation: Before End-Term Examination: 5% + 5%



## Course Contents

### Unit (I): Errors and Statistics

4 hrs

- Errors, Classification of Errors, Propagation of Errors
- Accuracy and Precision
- Minimization of Error
- Mean and Standard Deviation, Reliability of Results, Confidence Interval

### Unit (II): Potentiometry

4 hrs

- Introduction: Basics of Electrochemistry
- Reference Electrodes, Indicator Electrodes, Ion-Selective Electrodes
- Instrumentation and Measurement of Cell E.M.F.
- pH meter

### Unit (III): Colorimetry and Spectrophotometry

4 hrs

- Interaction of light with matter: Transmission, Absorption, Scattering
- Theory of Spectrophotometry: Beer-Lambert's Law
- Methods of Color Measurement
- Layout of instruments, Spectrophotometry, Derivative Spectrophotometry

### Unit (IV): Atomic Absorption / Emission Spectroscopy and Mass Spectrometry

4 hrs

- Atomic Absorption and Atomic Emission Spectra
- Atomic Absorption Spectroscopy (AAS)
- Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)
- Mass Spectrometry

### Unit (V): X-Ray Based Analytical Techniques

4 hrs

- ✓ **X-Ray Fluorescence**
  - X-Rays and Interaction of X-Rays with Matter
  - X-Ray Fluorescence – The Basic Process
  - X-Ray Fluorescence – Multiple Transitions and Intensity
  - Wavelength Dispersive (WD) XRF
  - Energy Dispersive (ED) XRF
- ✓ **X-Ray Diffractometer**
  - Bragg's Law

- Introduction to Powder/Polycrystalline Diffraction
- X-Ray Diffraction
- Application

**Text Books:**

1. G.H. Jeffery, J. Bassett, J. Mendham, R.C. Denney: Vogel's Text Book of Quantitative Chemical Analysis, Longman Scientific & Technical, ISBN: 0-582-44693-7

**Additional Readings:**

2. Ewing's Analytical Instrumentation Handbook, edited by Jack Cazes, CRC Press, 2004
3. The chemical educator, Springer-Verlag, New York, Inc., ISSN: 1430 - 4171
4. Analytical Chemistry, American Chemical Society, Web Edition ISSN: 1520-6882

## Environmental Thermodynamics

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 553

**Course Name:** Environmental Thermodynamics

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce fundamental concept of thermodynamics
- Give in-depth knowledge related to laws of thermodynamics.
- Give a brief concept about the application of thermodynamics in environment

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

Mid Term Examination: 25%

End Term Examination: 50%

Continuous Internal Assessment : 25% (Breakup is following)

- a. Quiz/Class test: 40%
- b. Presentation/ Assignment: 40%
- c. Project: 20%

**UNIT (I)**

**4 hrs.**

Fundamental concept; Thermodynamics Terms; state of equilibrium; state function; homogeneous function; integrating factor.

**UNIT (II)****4 hrs.**

First Law of thermodynamics; Work a path dependent function; heat capacity; enthalpy; relation between  $C_p$  and  $C_v$ ; Calculations of thermodynamic quantities.

**UNIT (III)****4 hrs.**

Thermochemistry; Concept of heat of reaction; laws of thermochemistry; Born-Haber cycle; variations of heat of reaction with pressure; interconversion of matter and energy.

**UNIT (IV)****4 hrs.**

Second law of thermodynamics; Concept of entropy; thermodynamic relation based on second law; concept of residual entropy; entropy at equilibrium; free energy functions;

**UNIT (V)****4 hrs.**

Thermodynamic equilibrium and free energy functions; coupled reactions; physical equilibrium involving phase transitions; entropy of vaporization and Trouton's rule; Thermodynamic equation of state; non-equilibrium states- linear thermodynamics of irreversible processes.

**TEXTBOOKS**

1. R.P. Rastogi and R.R. Mishra. An introduction to chemical thermodynamics; Vikas publishing house pvt. Ltd.
2. P.W. Atkins. The Laws of Thermodynamics

**REFERENCE LITERATURES**

1. Donald A. McQuarrie. Molecular Thermodynamics.
2. Richard E. Sonntag. Fundamentals of Thermodynamics.

## Environmental Conservation and Sustainable Development

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**COURSE CODE:** ENV 554

**COURSE NAME:** Environmental Conservation and Sustainable Development

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course has been designed for the following objectives:

- The concept of sustainability holds tremendous significance in the face of global warming and climate change. This course is devised to make novel scientific enquiries pertaining to various strategies that are in practice to attain environmental sustainability in the 21<sup>st</sup> century.
- Environment in terms of ecology has vital role for the survival of life on the Planet Earth. Numerous threats have been posed to the Environment in the current scenario. This course intends to highlight some of these issues.
- In the face of increasing threats to the Environment, many important plant and animal species have become extinct, whereas several others are at the verge of extinction. The only answer to address this issue is the conservation of Environment.
- The students will acquire analytical knowledge pertaining to various scientific strategies devised for addressing the current Environmental issues.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Presentation/class quiz : 20%
  - b. Attendance: 5%

**COURSE CONTENTS:**

**UNIT (I): INTRODUCTION TO ENVIRONMENT: GENERAL PERSPECTIVES** **6 hrs**

1. Environment
2. Global environmental problems
3. Environment priorities in India
4. Environmental Ethics
5. Man and Environment
6. Environmental crisis

**UNIT (II): ENVIRONMENTAL COMPONENTS** **5 hrs**

1. Atmosphere
2. Hydrosphere
3. Lithosphere
4. Biosphere

**UNIT (III): BIOLOGICAL RESOURCES: ASSESSMENT AND MANAGEMENT** **9 hrs**

1. Biological Diversity: Concept
2. Origin of Biodiversity
3. Values and loss of Biodiversity
4. Species extinctions, IUCN threat categories
5. Red data book
6. Needs for Biodiversity Conservation
7. Biodiversity Conservation Strategies: Global Scenario.

**UNIT (IV): CURRENT ENVIRONMENTAL ISSUES: GLOBAL WARMING AND GREENHOUSE EFFECT**

**10 hrs**

1. Greenhouse gases and global climate changes
2. Global Warming Potential
3. Possible Impact of Global Warming- Sea level Change, crop yield, water balance and human health
4. Global Ozone Problem

**UNIT (V): ENVIRONMENT AND AGRICULTURE**

**10 hrs**

1. Introduction
2. Failure of Green Revolution
3. Impact of Modernization in Agriculture
4. Alternatives
5. Sustainable Agriculture
6. Agriculturally important Soil Microbes-*Trichoderma*, *Pseudomonas* etc.

**TEXTBOOKS**

1. S.C. Santra, 2005, Environmental Science, New Central Book Agency (P) Ltd 8/1 Chintamani Das Lane, Kolkata- 700009

**REFERENCE BOOKS**

1. Rana S. V. S. 2005, Essentials of Ecology and Environmental Science, Prentice Hall of India Pvt. Ltd. New Delhi.
2. Ecology and Environment-P.D. Sharma, 2011 Eleventh Revised Edition
3. Journals: Nature; International Journals of Biotechnology and Microbiology

## Bio resources and Environmental Biotechnology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ENV 557

**Course Name:** Bio resources and Environmental Biotechnology

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce concept of biotechnology and its role in development and sustainability
- Give in-depth knowledge related to modern techniques in biotechnology.
- Give a brief concept how to improve our environment in future by using biotechnology.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

Mid Term Examination: 25%

End Term Examination: 50%

Continuous Internal Assessment : 25% (Breakup is following)

- a. Quiz/Class test: 40%
- b. Presentation/ Assignment: 40%
- c. Project: 20%



**Course Contents:****UNIT (I)****4 hrs**

Environmental biotechnology- definition, scope; role of biotechnology in development and sustainability;

**UNIT (II)****8 hrs**

Bioremediation: Environmental Xenobiotics and human health; principles of bioremediation; Microbial and phytoremediation processes; degradation of Xenobiotics in environment, and degradation pathways.

**UNIT (III)****10 hrs**

Basic Techniques in biotechnology: DNA finger printing – RFLP, Plasmid profiles, PCR based finger printing – RTPCR, 16S rDNA amplification, cloning, transformation, DNA sequencing, gene probes; Blotting and hybridization;

**UNIT (IV)****12 hrs**

Recombinant DNA technology: Early discoveries, restriction endonucleases, ligases, modification enzymes, DNA and RNA markers, cloning and expression vectors (plasmids, bacteriophage, phagmids, cosmids, artificial chromosomes), selection of recombinant clones, CDNA synthesis and cloning (mRNA enrichment, reverse transcription, DNA primers, linkers, adaptors and their chemical synthesis, library construction and screening).

**UNIT (V)****6 hrs**

Genetic engineering: Release of genetically engineered microorganisms, genetically modify corps-safety and environmental risks.

**Text Books:**

1. Comprehensive Biotechnology, Vol 4, M. Moo-young (Ed. InChief) pergamon, press, Oxford.
2. An Introduction to environmental biotechnology, AK Challerre, prentice Hall publication, New Delhi
3. An Introduction to Environmental Biotechnology by Milton Wainwright: Kluwer, Academic Press, 1999.

**Suggested Additional Readings:**

1. Environmental biotechnology theory and Application by G.M. Evans and J.C. Furlong, John Wiley and sons, 2004.
2. Environmental biotechnology, SK Agarval, APH publ. House, New Delhi-2006.
3. Mohapatra. P. K., 2006, Text Book of Environmental Biotechnology. I K International.
4. Waste water treatments (5th edition) M N Roa and A K Dutta, Oxford IBH Publ. Co. Pvt. Ltd., New Delhi-2003.

5. Rittman, B. E., and McCarty, P. L., 2001, Environmental Biotechnology. Principles and applications. McGraw-Hill, New York.
6. Olguin, E., Sanchez, G. and Hernandez, E., 1999, Environmental biotechnology and cleaner bioprocesses, Taylor & Francis, London.
7. Glazer AN, Nikaido H. (1994) Microbial Biotechnology – Fundamentals of Applied Microbiology, WH Freeman and Company, New York.
8. Bio-remediation Technologies, Technomic Publishing Co., USA. S.K. Sikdur & R.L. Irvine.

C U H I M A C H A L

## Environmental Geophysics

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course code: ENV 559**

**Course Name: Environmental Geophysics**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Aim:** The main thing is to introduce the student to concepts and applications of geophysics to solving environmental and engineering problems.

**How course activities and course structure help students achieve these goals:**

The course is designed to give them the background knowledge and practice using several methods in order to encourage them to think about the utility of geophysics in the solution to problems of an environmental nature.

**Course Objective**

The student will identify which geophysical methods are used by industry and academia to solve environmental problems, and be able to associate seismic, potential field, electrical and electromagnetic methods with the particular problems to which the methods are best suited. The student will analyze and integrate the physical theory, field methodology, and interpretation of each method with geologic and engineering information to solve problems using real data sets. The student will also summarize and critique recent publications in the fields of engineering and environmental geophysics.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25% (Breakup is following)
  - a. Assignment/Quiz/Term Paper: 20%
  - b. Presentation/Seminar/Field work: 20%
  - c. Practical: 60%

**Course Contents:****Unit-1**

Hazards definition of hazards, introduction to landslide hazard, earthquakes, flash floods and floods Himalayan orogeny, Structure and Tectonics of Himalaya.

Introduction to Applied Geophysics: what are applied and environmental geophysics, matching geophysical methods to applications, planning a geophysical survey, planning survey and survey constraints, survey design, optimum configuration

Introduction to Applied Seismology: Introduction, seismic waves, Raypath geometry in layered ground, reflection and refraction of obliquely incident rays, Critical reflection, diffraction, seismic energy source detection and recording of seismic waves, geophones and accelerometers, seismographs

**5 hrs**

**Unit 2**

Seismic Refraction Surveying: Introduction, General principles, Snells law, Field survey arrangements, geometry of refracted ray paths, Interpretational methods, applications and case histories.

Seismic Reflection Surveying Introduction, reflection survey general considerations, reflection principles, reflection data processing (pre-processing, static correction, convolution and deconvolution, stacking, filtering and migration

**5hrs**

**Unit-3**

Introduction to Shear wave methods: Spectral analysis of surface waves (SASW); Continuous surface waves methods (CSWS) and Cross hole method

Multichannel analysis of surface waves (MASW), active and passive seismic methods, field configuration, optimum field configuration, source receiver geometry, data acquisition, data analysis using seismic software, dispersion analysis, data interpretation and its applications.

**5 hrs**

#### **Unit-4**

Introduction to Ground Penetration Radar (GPR), Principle of GPR, , propagation of radiowaves, dielectric properties of earth material, modes of data acquisition, data processing, interpretational techniques and Applications of GPR

**5 hrs**

#### **Unit-5**

##### **Site amplification:**

What is site response, Site response studies, and application of MASW in site response, Shake analysis, its applications, Cases study, training of students in Grapher and Surfer, SHAKE softwares

**5 hrs**

##### **Books Recommended:**

1. **An introduction to applied and Environmental Geophysics by John M. Reynolds Wiley-Blackwell publications**
2. Principles of applied Geophysics by D.S.Parasnis **Springer publications**
3. Telford, W.M. et.al. Applied Geophysics: **Cambridge publication**
4. Geotechnical Earthquake Engineering by Sreven L. **Kramer**
5. Earthquakes (forecasting and mitigation by H.N. Srivastava
6. Recent advances in Earthquake geotechnical Engineering and microzonation by Atila Ansal, 2004

## Meteorology and Climatology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Name: Meteorology and Climatology**

**Course Code: ENV 560**

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to impart students an extended understanding of

- The Earth's Atmospheric Dynamics
- The Earth's Climate System and
- The Earth's Climate Variability

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
  2. End Term Examination: 50%
  3. Continuous Internal Assessment: 25%
- Break up of Continuous Internal Assessment:

Quiz 1: Before Mid-Semester Examinations: 7.5%

Quiz 2: After Mid-Semester Examination: 7.5%

Assignment & Presentation: Before End-Term Examination: 5% + 5%

## Course Contents

### UNIT (I): Physical Meteorology (1): Thermodynamics

8 hrs

- Thermal structure of the atmosphere and its composition, Gas Laws, Virtual Temperature, The Hydrostatic Equation, Geopotential Height, Scale Height
- The First Law of Thermodynamics, Joule's Law, Specific Heats, Enthalpy, Adiabatic Processes
- Concept of an Air Parcel, The Dry Adiabatic Lapse Rate, Potential Temperature, Thermodynamic Diagrams
- Water Vapor in Air, Moisture Parameters, Latent Heats, The Saturated Adiabatic Lapse Rate, Equivalent Potential Temperature and Wet-Bulb Potential Temperature, Normand's Rule
- Static Stability, Unsaturated Air, Saturated Air, Conditional and Convective Instability

### UNIT (II): Physical Meteorology (1): Radiative Transfer

8 hrs

- The Spectrum of Radiation, Blackbody Radiation, The Planck Function, Wien's Displacement Law, The Stefan-Boltzmann Law, Kirchhoff's Law, The Greenhouse Effect
- Radiation from the Sun, Solar Constant
- Rayleigh and Mie scattering, Multiple scattering: Scattering by Air Molecules and Particles
- Absorption by Particles, Absorption and Emission by Gas Molecules
- Radiative Transfer in Planetary Atmospheres
- Beer's Law, Reflection and Absorption by a Layer of the Atmosphere
- Absorption and Emission of Infrared Radiation in Cloud-Free Air
- Earth's Radiation Balance (Radiation Balance at the Top of the Atmosphere)

### UNIT (II): Dynamic Meteorology (1): Basic equations and fundamental forces

8 hrs

- Pressure, Gravity, Centripetal and Coriolis Forces,
- Continuity equation in Cartesian and isobaric coordinates for conservation of momentum
- Geostrophic and gradient winds, thermal wind
- Radiative Forcings, feedback processes

### UNIT (IV): Dynamic Meteorology (1): Climate Variability and Climate Modelling

8 hrs

- Low frequency climate variability: MJO (Madden-Julian oscillation), ENSO, QBO (quasi-biennial oscillation) and sunspot cycles
- Basic principles of General Circulation Modelling

### UNIT (V): Climatology

8 hrs

- Latitudinal and Seasonal Variation of Insolation
- Temperature, Pressure, Wind Belts, Humidity
- Cloud Formation, Condensation Nuclei, Growth of Cloud Drops and Ice-Crystals Cloud Classification

- Precipitation mechanisms, artificial precipitation, hail suppression, fog and cloud – dissipation
- Air Masses, Fronts, Jet Streams, Tropical Cyclones, Indian Monsoon, El-Nino and ENSO
- Classification of Climates – Koppen’s and Thornthwaite’s scheme of classification.

**Text Books:**

1. Wallace John M. Jr., Peter V. Hobbs: Atmospheric Science: An Introductory Survey, 2nd Edition, Academic Press, ISBN: 978-0127329512
2. John H. Seinfeld, Spyros N. Pandis: Atmospheric Chemistry and Physics, John Wiley & Sons, Inc., ISBN: 978-0-471-72018-8
3. Alan H. Strahler, Arthur Strahler: Physical Geography, John Wiley & Sons Inc, ISBN: 9788126511921

**Additional Readings:**

1. Frederick K. Lutgens, Edward J. Tarbuck: The Atmosphere: An Introduction To Meteorology, Phi (Prentice-hall New Arrivals), ISBN: 978-8120344150
2. Murry L. Salby: Physics of the Atmosphere and Climate, Cambridge University Press, ISBN: 978-0521767187
3. Mark Z. Jacobson: Fundamentals of Atmospheric Modeling, Cambridge University Press, ISBN: 978-0521548656
4. Howard J. Critchfield: General Climatology, PHI Learning, ISBN: 978-81-203-0476-5



## Science of Climate Change

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**Course Code:** ENV 561

**Course Name:** Science of Climate Change

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to impart students an extended understanding of Climate Change and the Science behind the processes and factors responsible for the Earth's Climate Change.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%  
Break up of Continuous Internal Assessment:  
Quiz 1: Before Mid-Semester Examinations: 7.5%  
Quiz 2: After Mid-Semester Examination: 7.5%  
Assignment & Presentation: Before End-Term Examination: 5% + 5%

### Course Contents

#### UINT 1 The Climate System: an overview

[4 Hours]

- a) The Driving Forces of Climate
- b) Anthropogenic Climate Change
- c) Climatic Response
- d) Observed Climate Change
- e) Prediction and Modelling of Climate Change

**UNIT 2 Human and Natural Drivers of Climate Change****[4 Hours]**

- a) Solar Variability
- b) Green House Effect
- c) Radiative Forcing
- d) Climate Sensitivity
- e) Relative Radiative Forcing Indices

**UNIT 3 Radiative Forcing****[4 Hours]**

- a) Greenhouse gases
  - I. Halocarbon radiative forcing
  - II. Radiative forcing due to stratospheric ozone changes
- b) Tropospheric Aerosols
  - I. Direct forcing due to sulphate aerosols resulting from fossil fuel emissions and smelting
  - II. Soot aerosols
  - III. Other aerosol types and sources
  - IV. Effect of aerosols on cloud properties
- c) Stratospheric Aerosols

**UNIT 4 Observations of Changes in Climate****[4 Hours]**

- a) Atmospheric Changes: Instrumental Record
- b) Changes in the Ocean: Instrumental Record
- c) Changes in the Cryosphere: Instrumental Record
- d) A Palaeoclimatic Perspective
- e) Extreme Weather Events, Orbital Forcing

**UNIT 5 Projections of Future Changes in Climate****[4 Hours]**

- a) Hierarchy of Global Climate Models
- b) Understanding Near-Term Climate Change
- c) Large-Scale Projections
- d) Regional-Scale Projections
- e) Implications of Climate Processes and their Time Scales for Long-Term Projections

**Text Books:**

1. Intergovernmental Panel on Climate Change (1995), Climate Change 1995: The Science of Climate Change, Edited by J.T. Houghton, L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattenberg and K. Maskell, Cambridge University Press, ISBN: 0 521 56436 0
2. Intergovernmental Panel On Climate Change (2007), Specifications of Climate Change 2007 - The Physical Science Basis, Cambridge University Press, ISBN: 9780521705967

Additional Readings:

4. John H. Seinfeld, Spyros N. Pandis: Atmospheric Chemistry and Physics, John Wiley & Sons, Inc., ISBN: 978-0-471-72018-8

CUHP

# School of Education

## Department of Teacher Education

### School of Education

Name of the Department: **Department of Teacher Education**

Name of the Programme of Study: **MA (Education)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. Of Pre-requisite/Co-requisites if any	Teacher
1.	TTR 402	Philosophical Foundations of Education	2	NA	Dr. Navneet Sharma
2.	TTR 409	Education in Emerging Indian Society	2	NA	Ms. Prakrati Bhargava
3.	TTR 419	Advanced Educational Psychology	4	NA	Dr. Anu G.S. / Ms. Renu Bhandari
4.	TTR 421	Educational Measurement & Evaluation	2	NA	Dr. Manoj K Saxena
5.	TTR 413	Action Research in Education	2	NA	Dr. Anu G.S.

#### University Wide Courses

Sr. No.	Course Code	Course Name	Credits	Code No. Of Pre-requisite/ Co-requisites if any	Teacher
1.	CSR 401	Human Values and Ethics	2	NA	Dr. Arbind K Jha
2.	SWR 405	Basics of Research Methodology	2	NA	Dr. Arbind K Jha
3.	TTR 504	Research Report Writing	2	NA	Dr. Arbind K Jha
4.	TTR 608	Philosophy of Educational Research	4	NA	Dr. Arbind K Jha
5.	TTR 602	Development & Standardization of Research Tools	4	NA	Dr. Manoj K Saxena
6.	TTR 412	ICT in Education	2	NA	Dr. Manoj K Saxena
7.	TTR 610	Values & Ethics in	4	NA	Dr. Navneet

		Education			Sharma
<b>8.</b>	TTR 416	Education for Women Empowerment	2	NA	Dr. Navneet Sharma
<b>9.</b>	TTR 414	Education for Values & Human Rights	4	NA	Dr. Navneet Sharma
<b>10.</b>	TTR 606	Quantitative Research in Education	4	NA	Dr. Anu G.S.
<b>11.</b>	HRM 407	Emotional Intelligence	2	NA	Dr. Anu G.S.
<b>12.</b>	TTR 501	Research Methods and Statistics in Education – Part – II	2	NA	Dr. Anu G.S.
<b>13.</b>	TTR 605	Qualitative Research in Education	4	NA	Ms. Prakrati Bhargava
<b>14.</b>	TTR 502	Comparative Education	2	NA	Ms. Prakrati Bhargava
<b>15.</b>	TTR 603	Politics and Economics in Education	4	NA	Ms. Prakrati Bhargava
<b>16.</b>	TTR 410	Educational and Vocational Guidance	4	NA	Ms. Renu Bhandari
<b>17.</b>	TTR 411	Education of Children with Special Needs	4	NA	Ms. Renu Bhandari
<b>18.</b>	TTR 415	Environmental Education	2	NA	Ms. Renu Bhandari

## Action Research in Education

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Course Code: TTR 413

### Course Name: Action Research in Education

**Credits Equivalent: 2 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** On completion of this course, the students will be able to:

- Explain the fundamental concepts of Action Research
- Apply various methods for collecting Data Action Research
- Develop the skill of analysis and interpretation of action research data
- Understand the different process of evaluation of action research
- Able to conduct independent action research in required situation.

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Attendance/Participation: 5 marks
  - Seminar: 10 marks
  - Assignments: 15 marks

## **Course Content**

### **Unit I- Action Research: An Introduction (4 Hours)**

The Nature of Educational Research- Principles of Research- Quantitative Versus Qualitative Research- Action Research Principles-History of Action Research-Action Research Model-Statement of the Problem (Initial Diagnosis)-Developing an Action Research Proposal-Benchmarking-Ethical and Legal Considerations.

### **Unit II- Data Collection Methods in Action Research (5 Hours)**

The Nature of Data Collection-Observing-Interviewing-Surveying-Assessing-Processing- Different Data Collection Tools-Interview Protocol Form -Preparation Checklist for an Interview-Time Sampling Form-Individual Event Sampling Form-Group Event Sampling Form-Group Skills Checklist-Individual Skills Checklist -Field Notes -Professional Journal -Professional Log -Anecdotal Notes Form -Sociogram -Photo Log -Running Records Form-Retelling Form-Forced-Choice Checklist -Likert-Type Scale - Ranking Form-Open-Ended Question

### **Unit III- Data Analysis and Interpretation in Action Research (4 Hours)**

Threats to Validity-Using Descriptive Statistics- Significance Levels and Tests of Significance - Using Graphs and Diagrams- Writing Narrative Reports-Solving Problems and Taking Action-Barriers to Problem Solving-Steps in Solving Problems-Managing Change-Planning and Initiating Action- Data-driven Decision Making (DDDM)

### **Unit IV- Evaluating Action Research (3 Hours)**

Areas for Evaluation-  
Methods for Evaluating Results-  
Evaluating Action Research Studies

### **Unit V- Conducting Action Research (4 Hours)**

Sample Research Study Analysis -Collaborative Process Intervention: An Action Research Study - Modifying Discussion and Assessment Techniques to Increase-Student Understanding and Teacher Reflective Practices



## Essential Reading

- Daniel R. Tomal (2010). *Action Research for Educators (2<sup>nd</sup> Edition)*. Plymouth , United Kingdom: Rowman & Littlefield Education.
- Lin S. Norton (2009). *Action Research in teaching and learning*. New York, NY: Routledge.
- Sandra M. Alber (2011). *A toolkit for Action Research*. Plymouth, United Kingdom: Rowman & Littlefield Publishers, Inc.

## Suggested Reading

- Arhar, J., Holly, J., & Kasten, W. (2001). *Action research for teachers: Traveling the yellow brick road*. Upper Saddle River, NJ: Merrill.
- Mills, G. (2000). *Action research: A guide for the teacher researcher*. Upper Saddle River, NJ: Prentice-Hall.
- Keemis, S., & McTaggart, R. (Eds.). (1998). *The action research planner (3rd ed.)*. Geelong, Victoria, Australia: Deakin University Press.
- Hoffke, S. E., & Stevenson, R. B. (Eds.). (1995). *Educational action research: Becoming practically critical*. New York: Teacher College Press.

## Advanced Educational Psychology

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Course Code: TTR 419

### **Course Name: Advanced Educational Psychology**

**Credits Equivalent: 4 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial/ teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** On completion of the course, the students will be able to:

- Understand the concept of thinking, reasoning and problem solving.
- Identify and utilize existing resources for promoting inclusive practice.
- Explain the interrelationship among adjustment and mental health.
- Describe various theories and assessment of personality.
- Understand the difficulties encountered by children with special needs.
- Suggest measures for fostering good mental health among students.
- Develop the advanced concepts of memory- remembering and forgetting.

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Attendance/Participation: 5 marks

- Seminar: 10 marks
- Assignments: 15 marks

### **Unit I- Psychology of Thinking, Reasoning and Problem-solving (8 hours)**

Thinking- Nature of Thinking- Theories of Thinking ( behaviouristic, Gestalt & Holistic, Piaget, Sullivan's, Bruner, Information Processing, Freud's Psychoanalytic)- types of Thinking (Perceptual, Conceptual, Reflective, Creative, Critical & Associate Thinking)- Development of Thinking- Reasoning –Meaning & Definition- Types of Reasoning ( Inductive and Deductive)- Problem Solving-Meaning & Definition- Factors affecting Problem Solving- Strategies for Effective Problem solving

### **Unit II Adjustment and mental health (8 hours)**

Concept and types of adjustment-Concept and characteristics of good mental health- Defence mechanisms – mechanism of denial, mechanisms of escape, mechanism of substitution-Maladjustment: neurotism and psychotism- Principles of mental hygiene: preventive, constructive and curative measures for mental health of students, teachers and school personnel.

### **Unit III- Personality (8 hours)**

Meaning and Nature- Features and Characteristics of Personality- Theories of Personality- Type cum Trait Approach- Eysenck's Theory of Personality-Psychoanalytical Approach- Freud's Psychodynamic Theory of Personality- Humanistic Approach- Abraham Maslow Self-actualisation theory-Carl Roger's Self Theory-Learning Theories of Personality- Dollard and miller's learning theory of personality-Assessment of Personality- Projective Techniques- Rorschach Inkblot Test-TAT-CAT- Word Association Test

#### **Unit IV Educating exceptional children (8 hours)**

Children with special needs: concept, classification, Historical perspective.

Concept, characteristics, identification and education of children with Learning disability, giftedness, backward children, juvenile delinquency.

Brief account of existing special, integrated and inclusive education services in India.-

Overcoming the barriers for inclusion-Creating and sustaining inclusive practices.

#### **Unit V- Memory- Remembering and Forgetting (8 hours)**

Memory- Mechanism of the process of memorization- Remembering and Memory- Models of Memory (Storage and Transfer Model)- Types of Memory ( Sensory, Short-term, Long Term, episodic and semantic, photographic and paranormal))- Training in Memory- Forgetting- Ebbinghaus's Curve of Forgetting- Types of Forgetting- Theories of Forgetting ( Trace Decay theory , Interference and Repression Theory)

#### **Essential Readings**

- Woolfolk, A. et.al. (2012). Fundamentals of Educational Psychology Pearson Education, New Delhi.
- Baron, R.A. (2001) Psychology, Pearson Education Inc., New Delhi.
- Dandapani, S.,(2010). A Textbook of Advanced Educational Psychology 4<sup>th</sup> edition. Anmol Publications Pvt. Ltd New Delhi.
- Position Paper **National Focus Group** on Education of Children with special Needs. NCERT

### **Suggested Readings**

- a. Allport, G.W, (1960). *Personality: A psychological Interpretation* .New York: Henry Holt and Company.
- b. Ainscow, M., Booth. T (2003): *The Index for Inclusion: Developing Learning and Participation in Schools*. Bristol: Center for Studies in Inclusive Education.
- c. Mangal, S.K. (2006): *Advanced Educational Psychology*, New Delhi : Prentice-Hall of India.

C U H I M A C H A L

## Philosophical Foundations of Education

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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Course Code: TTR 402

**Course Name: Philosophical Foundations of Education**

**Credits Equivalent: 2 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** on completion of the course, the student will be able to:

- To develop capability and capacity to reflect upon Education - Theory and Praxis philosophically.
- To perceive the Inter - relationship amongst Teaching, Learning, Knowledge and Pedagogy
- To understand how class room processes and contemporary concerns influence educational theorization

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100

- Seminar: 10 marks
- Assignments: 15 marks

Course Contents:

Unit 1 Education and Philosophy of: **03 hrs**

Problems, Scope and Logic

Introduction to Philosophy of Education

Thinking Philosophy

**Unit 2 Epistemology:** **03 hrs**

Knowledge – JTB and its alternatives

Discipline and Epistemology

Knowledge, Truth and Education

**Unit 3 Epistemology and Education:** **03 hrs**

Knowledge – Origin and Dissemination

Production of Knowledge and Schooling

Epistemology

**Unit 4 Teaching and Learning: Philosophical Perspective: 03 hrs**

Experience and Learning

Teaching, Learning and Education

Human Learning

**Unit 5 Thinker(s)** **08 hrs**

John Dewey, Paulo Friere

MK Gandhi, RN Tagore

## Prescribed Texts

Barrow and Woods, (1988), An Introduction to Philosophy of Education, London, Routledge and Kegan Paul.

Carr, D. (Ed.)(1998), Education, Knowledge and Truth, London, Routledge and Kegan Paul.

Carr. D. (Ed.)(1998), Education, Knowledge and Truth, Routledge, London.

Curren, Randall, (1998), Education Philosophy of, in E. Craig (Ed.) Routledge Encyclopaedia of Philosophy, Routledge, London.

Dewey, John, (1916), Democracy and Education, New York, MacMillan

Friere, Paulo, (1970), Pedagogy of the Oppressed, Penguin Books, England

## Suggested Readings

Blake and et al (Ed.)(2003), The Blackwell Guide to Philosophy of Education, Blackwell, Oxford.

Hirst and Peters, (1970), The Logic of Education, London, Routledge and Kegan Paul.

Hirst and White (Ed.)(1998),Philosophy and Education: Major themes in the Analytic Tradition Vol. I

Kumar and Shukla, (1985), Sociological Perspectives in Education, New Delhi, Chanakya Publications.

Kumar Krishna, (1992), What is Worth Teaching, New Delhi, Oriental Longman.

Winch. C. (1998), The Philosophy of Human Learning, Routledge and Kegan Paul, London



## Education for Women Empowerment

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code: TTR 416**

**Course Name: Education for Women Empowerment**

**Credits Equivalent: 2 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** on completion of the course, the student will be able to:

- To critically examine the conceptions of Gender and inequalities emerging from it.
- To understand the difference between Sex, Gender and Sexuality using feminist theoretical frameworks.
- To map stereotyping in the process of education.
- To develop and perceive visualize for intervention for sexuality egalitarian society.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Seminar: 10 marks
  - Assignments: 15 marks

## **Course Contents:**

### **Unit 1 Sex and Gender:**

- Hetero-normativity
- Sex Roles
- Gendering Sex

### **Unit 2 Gender and Society:**

- Patriarchy
- Gender and Religion
- Gender and Caste

### **Unit 3 Sexuality:**

- Growing up Male
- The LGBT's
- Androgyny and Education

### **Unit 4 Theoretical Perspective:**

- Feminism and Feminist Theories
- Nature, Nurture and Culture
- Women and Change

### **Unit 5 Gender and School:**

- Social Construction of Gender
- Gender Inequality in Schooling
- Interventions and Possibilities

## **Prescribed Texts**

1. Bhasin, Kamala, (1986), what is Patriarchy? Kali for Woman, New Delhi
2. Chanana, Karuna (1988), Socialization, Education and Woman, Orient Longman, New Delhi.
3. Sarkar, Tanika and UrvashiButalia, (Eds.)(1999), Women and the Hindu Right: A Collection of Essays, Kali for Women, New Delhi.

## **Suggested Readings**

1. Kumar, Krishna, (1986), Growing up Male, Seminar, No. 387, Feb, PP 53-55.
2. Reddy, Gayatri, (2006), With respect to Sex, Yoda Press, New Delhi.
3. Roy, Rahul, (2007), A little book on Men, Yoda Press, New Delhi.

## Education in Emerging Indian Society

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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**Course title: Education in Emerging Indian Society**

**Course code: TTR 409**

**Course credit: 2**

**Credits Equivalent: 2 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objective

The course will accomplish following objectives:

- To introduce the ideological debates on colonial education in India.
- To critically examine the development of colonial education in the early nineteenth century through colonial policy documents.
- To understand the impact of swadeshi movement on Indian education.
- To know the impact of First World War on colonial policy regarding science, technology and industrialization.
- To understand the new development in Indian education with the ongoing freedom struggle.

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Attendance/Participation: 5 marks
  - Seminar: 10 marks
  - Assignments: 15 marks

## Course Outline

### Unit 1 Themes Concern and Approaches towards Modern Education in Nineteenth Century

- Anglicist- Orientalist discourse
- Medium of instruction
- Liberal-utilitarian education
- Education and colonialism

### Unit 2 Education and State

- Bentinck, Macaulay and the introduction of English Education in India
- Dalhousie, Charles Wood and the Education Dispatch of 1854
- The Hunter Commission

### Unit 3 Education and Swadeshi Movement

- Swadeshi movement and its impact on education.
- Curzon university reform.
- The discourse on national education.

### Unit 4 First World War and its aftermath

- Indian industrial commission and its impact on science and technology
- Establishment of new universities: Banaras, Aligarh, Lucknow, Dacca and Osmania.
- Education under diarchy

### Unit 5 Education and National Movement

- Institutionalization of national schools, Vidyapithas, Azad Schools and Jamia Milia Islamia
- Zakir Husain Committee's Report
- The period (1935-50) of big science- M.N. Saha, Homi Bhabha and S.S. Bhatnagar contribution to Indian science.

## Suggested Readings

- Basu Aparna. 1974. The Growth of Education and Political Development in India 1898-1920, Delhi.
- Ghosh S.C. 2001, Birth of a New India, Delhi, Originals.
- Kumar Krishna. 1987. Political Agenda of Education, New Delhi.
- Mukerji S.N. History of Education in India Modern India, Gandhi Nagar, Acharya Book Depot.
- Mukherjee Haridas & Mukherjee Uma, A Phase of the Swadeshi Movement (National Education 1905-10), Calcutta.
- Nurullah & Naik 1962 A Students' History of Education in India (1800-1961), Bombay, Macmillan and Co. Ltd.
- Raina & Habib, 2004. Domesticating Modern Science A Social History of Science and Culture in Colonial India, New Delhi.

## Environmental Education

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code: TTR 415**

**Course Name: Environmental Education**

**Credits Equivalent: 2 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** On completion of the course, the students will be able to:

- Develop an understanding of processes and components of environment.
- Understand the role of environmental education in sustainable development.
- Apply the knowledge of environmental ethics in inculcating environmental values.
- Aware people for the preservation and conservation of environment.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Attendance/Participation: 5 marks
  - Seminar: 10 marks
  - Assignments: 15 marks

**Unit I Environmental concepts and degradation (3hrs)**

- Concept of environmental processes and systems
- Global environmental issues.
- Factors of degradation of environment: adverse socio-economic impacts of degradation of environment.

## **Unit II Environmental Education (3 hrs)**

- Concept, importance, and scope of environmental education
- Aims and Objectives of environmental education
- Guiding principles and foundations of environmental education
- Methods of teaching environment education (field visits, discussion, demonstration, observation, project method).

## **Unit-III Environmental Ethics (4hrs)**

- Environmental ethics: concept, need, scope, nature of values related to environmental conservation.
- Learning from nature, Indian culture and environmental conservation.
- Strategies for inculcating environmental values among the students at various levels of education.

## **Unit IV International Efforts and Environmental Movements (5 hrs)**

The Stockholm conference 1972 ,Brundtland commission 1983, Nairobi conference 1982 , The Rio Summit 1992 – the Rio Declaration at the earth charter – Major achievements of the Rio Summit – Main features of the Rio Declaration – Kyoto Conference and part on Global Warming 1997.

- Environmental movements in India: Silent valley movement, Chipko movement, Narmada bachao andolon, National Test Range at Baliupal, Orissa – conditions for achieving the goals of sustainable development – Strategies for sustainable development in India.

## **Unit V. Sustainable Development (5 hrs)**

- Sustainable Development- concept, dimensions & principles
- International Institutions and programmes affecting the process of sustainable development- IUCN (International Union for conservation of Nature and Natural Resources) and UNEP (United Nations Environmental Programme)
- Education for sustainable Development- concept, scope, Need of an Interdisciplinary Approach.

### **Essential Readings**

1. Hilgenkamp Kathryn (2006). *Environmental Health –Ecological Perspectives* London :Jones & Bartlett Publishers.
2. Iyer, Gopal (1996). *Sustainable Development Ecological & Socio-cultural dimension*. New Delhi : Vikas Publishing House Ltd.
3. Dayani, S. N., (1993). *Management of Environmental Hazards*. New Delhi : 110 014. Vikas Publishing House, Pvt. Ltd.

### **Suggested readings**

1. Ashthana Vandanna, (1992). The Politics of Environment. New Delhi : Ashish Publishing, Houses, Punjabi Bagh.
2. James, George (1999). Ethical Perspectives on Environmental Issues in India. New Delhi- 100002 : APH Publishing.
3. <http://www.unep.org/>
4. <http://www.envfor.nic.in/>

C U H I M A C H A L P

## Advanced Educational Psychology

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**Course Code: TTR 419**

**Course Name: Advanced Educational Psychology**

**Credits Equivalent: 4 Credits** (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** On completion of the course, the students will be able to:

- Understand the concept of thinking, reasoning and problem solving.
- Identify and utilize existing resources for promoting inclusive practice.
- Explain the interrelationship among adjustment and mental health.
- Describe various theories and assessment of personality.
- Understand the difficulties encountered by children with special needs.
- Suggest measures for fostering good mental health among students.
- Develop the advanced concepts of memory- remembering and forgetting.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100



- Attendance/Participation: 5 marks
- Seminar: 10 marks
- Assignments: 15 marks

### **Unit I- Psychology of Thinking, Reasoning and Problem-solving (8 hours)**

Thinking- Nature of Thinking- Theories of Thinking ( behaviouristic, Gestalt & Holistic, Piaget, Sullivan's, Bruner, Information Processing, Freud's Psychoanalytic)- types of Thinking (Perceptual, Conceptual, Reflective, Creative, Critical & Associate Thinking)- Development of Thinking- Reasoning –Meaning & Definition- Types of Reasoning ( Inductive and Deductive)- Problem Solving-Meaning & Definition- Factors affecting Problem Solving- Strategies for Effective Problem solving

### **Unit II Adjustment and mental health (8 hours)**

Concept and types of adjustment-Concept and characteristics of good mental health- Defence mechanisms – mechanism of denial, mechanisms of escape, mechanism of substitution-Maladjustment: neurotism and psychotism- Principles of mental hygiene: preventive, constructive and curative measures for mental health of students, teachers and school personnel.

### **Unit III- Personality (8 hours)**

Meaning and Nature- Features and Characteristics of Personality- Theories of Personality- Type cum Trait Approach- Eysenck's Theory of Personality-Psychoanalytical Approach- Freud's Psychodynamic Theory of Personality- Humanistic Approach- Abraham Maslow Self-actualisation theory-Carl Roger's Self Theory-Learning Theories of Personality- Dollard and miller's learning theory of personality-Assessment of Personality- Projective Techniques- Rorschach Inkblot Test-TAT-CAT- Word Association Test

#### **Unit IV Educating exceptional children (8 hours)**

Children with special needs: concept, classification, Historical perspective.

Concept, characteristics, identification and education of children with Learning disability, giftedness, backward children, juvenile delinquency.

Brief account of existing special, integrated and inclusive education services in India.-

Overcoming the barriers for inclusion-Creating and sustaining inclusive practices.

#### **Unit V- Memory- Remembering and Forgetting (8 hours)**

Memory- Mechanism of the process of memorization- Remembering and Memory- Models of Memory (Storage and Transfer Model)- Types of Memory ( Sensory, Short-term, Long Term, episodic and semantic, photographic and paranormal))- Training in Memory- Forgetting- Ebbinghaus's Curve of Forgetting- Types of Forgetting- Theories of Forgetting ( Trace Decay theory , Interference and Repression Theory)

#### **Essential Readings**

- Woolfolk, A. et.al. (2012). Fundamentals of Educational Psychology Pearson Education, New Delhi.
- Baron, R.A. (2001) Psychology, Pearson Education Inc., New Delhi.
- Dandapani, S.,(2010). A Textbook of Advanced Educational Psychology 4<sup>th</sup> edition. Anmol Publications Pvt. Ltd New Delhi.
- Position Paper **National Focus Group** on Education of Children with special Needs. NCERT

### **Suggested Readings**

- a. Allport, G.W, (1960). *Personality: A psychological Interpretation* .New York: Henry Holt and Company.
- b. Ainscow, M., Booth. T (2003): *The Index for Inclusion: Developing Learning and Participation in Schools*. Bristol: Center for Studies in Inclusive Education.
- c. Mangal, S.K. (2006): *Advanced Educational Psychology*, New Delhi : Prentice-Hall of India.

C U H I P

## Educational Technology

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Course Code: TTR408 Credit: 4

**Course Name: Educational Technology**

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** On completion of the course, the students will be able to:

- Describe meaning and need of Educational Technology.
- Understand various approaches of Educational Technology.
- Explain principles of Classroom Communication.
- Define various levels of teaching.
- Develop competency in using Flanders' Interaction Analysis.
- Discuss Programmed Instruction Material
- Use Multimedia in Education.

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Seminar: 10 marks
  - Assignments: 15 marks

Course Contents:

**UNIT I:**

Educational Technology- Its Meaning, Nature and Scope, Significance , Approaches of Educational Technology- Hardware approach, Software approach and System approach.

**UNIT II:**

Communication: Concept, Nature, Process, Components, Types, Classroom Communication, Factors affecting classroom communication, Mass Media approach in Educational Technology.

**UNIT III:**

Levels of teaching, Phases of teaching, Micro teaching, Flanders' Interaction Analysis, Simulation, Team Teaching

**UNIT IV:**

Basic Principles of Programmed Instruction, Origin and Types : Linear, Branching and Mathetics Model, Steps in the Development of Programmed Instructional Materials, Content Analysis, Writing frames, Tryout, Editing and Validation

**UNIT V:**

Multimedia – Concept, Use, Role of Teachers in Using Multimedia, Importance of Multimedia in Education

**Suggested Readings:**

- ❖ Adam, D.M. (1985).*Computers and Teacher Training: A Practical guide*, The Haworth Pren, Inc., N.Y.
- ❖ Behera, S.C. (1991).*Educational Television Programmes*, Deep and Deep Publications, New Delhi.
- ❖ Coburn, P. et al. (1985).*Practical Guide to Computers in Education*, Addison – Wesley Publishing Company, Inc.
- ❖ Das, R.C. (1993).*Educational Technology – A Basic Text*, Sterling Publishers Pvt. Ltd.
- ❖ Evaut, M. *The International Encyclopedia of Educational Technology*.

- ❖ Graeme, K. (1969). *Blackboard to Computers: A Guide to Educational Aids*, London, Ward Lock.
- ❖ Haas, K.B. & Packer, H.Q. (1990). *Preparation and Use of Audio Visual Aids*, 3<sup>rd</sup> Edition, Prentice Hall, Inc.
- ❖ Kumar, N. & Chandiram, J. (1967). *Educational Television in India*, New Delhi: Arya Book Depot.
- ❖ Kumar, K.L. (2008). *Educational Technology*, New Age International Pvt. Ltd. Publishers, New Delhi (Second Revised Edition).
- ❖ Mukhopadhyay, M. (1990). *Educational Technology – Year Book 1988*, All India Association for Educational Technology, New Delhi.
- ❖ Mukhopadhyay, M. (1990). *Educational Technology – Challenging Issues*, Sterling Publishers Pvt. Ltd., New Delhi.
- ❖ Sampathet. al. (1981). *Introduction to Educational Technology*, Sterling Publishers Pvt. Ltd.
- ❖ Sharma, B.M. (1994). *Media and Education*, New Delhi: Commonwealth Publishers.
- ❖ Venkataiah, N. (1996). *Educational technology*, New Delhi: APH Publishing Corporation.
- ❖ AnandRao, B. & Ravishankar: *Readings in Educational Technology*, Himalay Publishing House, Ramdoot Dr. Bhalerao Marg, Bombay – 04.
- ❖ Chauhan S. S. *A Text Book of Programmed Instruction*. (2<sup>nd</sup> Ed). Sterling Publishers Pvt Ltd., New Delhi / Bangalore.
- ❖ Dharma, O.P. & Bhatnagar O.O. *Educational and Communication for Development*, Oxford and IBG, New Delhi.
- ❖ Goldberg, Alvin & Carl, E. *Group Communication*, Prentice Hall, Inc. New Jersey.

- ❖ H.Keith. Introducing CAL – Practical guide to writing CAL Programmes, Chapman and Hall, London.
- ❖ Patel I.J et al., A Hand Book of Programmed Learning, CASE, Baroda.
- ❖ Ronald H Anderson: Selecting and Developing Media for Instruction, Van Nostrand Reinhold, New York.
- ❖ Ruhela S. P. (2001): Some Aspects of Educational Technology.
- ❖ Sharma R.A. Programmed Instruction – An Instructional Technology, Loyal Bank Depot, Meerut (UP).
- ❖ Sharma R.A. Programmed Instruction – An Instructional Technology, Goyal Book Depot, Meerut.
- ❖ Walter A.W.& Charles F.S. Instructional Technology - its nature and use of A.V. Materials (5<sup>th</sup> Ed), Harper and Row Publishers, New York.

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Course Code: TTR412

Course Name: **ICT in Education**

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** on completion of the course, the students will be able to:

- Understand Significance of ICT in Education.
- Explain Factors Affecting and Facilitating ICT Learning.
- Use the various accessories of computer for educational purpose.
- Transact the curriculum through ICT.
- To understand the ethical and legal issues related to ICT.
- Use search engines for their research purpose.

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Seminar: 10 marks
  - Assignments: 15 marks



Course Contents:

UNIT-I: (7 hrs)

- Concept, Characteristics, Advantages, Uses, Scope of ICT in Education, Factors Affecting and Facilitating ICT Learning, Challenges in Integrating ICT in Education

UNIT-II: (5 hrs)

- Computers as an educational tool, computer generations, Types of computers, Computer Accessories for educational purpose, Hardware, Software, Storage devices, Curriculum transaction through ICT

UNIT-III: (6 hrs)

- Internet: concept, History and its Uses in education, Intranet: Concept, its need and benefits, Search Engines and their workings, Legal and Ethical Issues

UNIT-IV: (2 hrs)

- Concepts of E-Learning, Web Based Learning, Virtual Classroom.

**Suggested Readings:**

1. Manju, Gehlawat (2012). Information Technology in Education, Pearson Publication, Delhi, Total PAGE 378
2. Pandey, V.C. (2005). Framework of ICT and Teacher Education, Isha Books, Delhi, Rs. 890 Total Page 318
3. Sareen, N. (2005). Information and Communication Technology, Anmol Publication, New Delhi, Rs. 175 Total Page 389.
4. Sharma, B.M. (2005). Net Oriented Education, Akshansha Publication House, New Delhi, Rs. 160 Total Page 294.
5. Siddiqui, M.H. (2004). Technology in Higher Education, APH Publication, Delhi, Rs. 220 Total Page 354.
6. Tinio, Victoria, L. ICT in Education, [http://www.saigontre.com/FDFiles/ICT\\_in\\_Education.PDF](http://www.saigontre.com/FDFiles/ICT_in_Education.PDF)

## Educational Measurement & Evaluation

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: TTR - 421

Credit: 2

### Course Name: Educational Measurement & Evaluation

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** on completion of the course, the students will be able to:

- Understand concept, scope, need and relevance of educational measurement and evaluation.
- Develop tools of educational measurement & evaluation like questionnaires, schedules, inventories, anecdotal records, observations and interview.
- Explain the concepts of reliability, validity and norms.
- Use computer in evaluation.
- Explain new trends like Grading System, CBCS, and CGPA.
- Understand various statistical concepts.

### Attendance Requirements:

Students are expected to attend all lectures in order to be fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Seminar: 10 marks
  - Assignments: 15 marks

### Course Contents:

#### Unit 1: Educational Measurement & Evaluation:

Educational Measurement and Evaluation, Concept, Functions, Principles, Difference between Measurement and Evaluation

**Unit 2: Tools of Educational Measurement & Evaluation:**

Subjective and Objective tools, Tests: Essay tests, Objective tests, Questionnaires, schedules, observation, interviews

**Unit 3: Characteristics of a Good Measuring instrument:**

Reliability: Methods of establishing reliability, factors affecting, interpretation and improving reliability, Validity: Types, factors affecting, interpretation and improving validity, Norms: types and characteristics

**Unit 4: New Trends in Measurement and Evaluation**

Grading System, Semester system, Choice Based Credit System (CBCS), Cumulative Grade Point Average (CGPA), Question banks, Use of computer in evaluation

**Unit 5: Statistical Concept in Measurement & Evaluation**

Measures of Central Tendency, Variability, Correlation, Test scores and their transformation – Z scores, T-scores, Stannie Scores, Percentiles

**Suggested Readings:**

- Anastasi, A (1982), Psychological Testing, Mac Millan, New York.
- Cronbach, L.J. (1964), Essentials of Psychological Testing, Harper and Row, New York.
- Ebel, R.L. and Frisbel, D.A. (1990), Essentials of Educational Measurement, Prentice Hall, New Delhi.
- 8. Freeman, F.S. (1965), Theory and Practice of Psychological Testing, Holt, Rinehart & Winston, 1965.
- Gareet, H.E. (1973), Statistics in Education and Psychology, Vakils, Feffer and Simons, Bombay.
- Chavan C.P.S. (1993) Emerging trends in Educational Evaluation, New Delhi: Commonwealth publishers
- J.Swarupa Rani. (2004) Educational Measurement and Evaluation
- Discovery Publishing House Norman Edward. Measurement and Evaluation in teaching
- Gilbert S. (1974). Principles of Education Measurement and Evaluation
- Journals
- Newspapers

## Development and Standardization of Research Tools

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Course Code: TTR 602

**Course Name: Development and Standardization of Research Tools**

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** on completion of the course, the students will be able to:

- Describe meaning and need of research tools.
- Understand various types of research tools.
- Explain principles of tool construction.
- Select the appropriate type of research tools for their respective study.
- Develop competency in writing the items for research tool.
- Edit the items of the research tool.
- Standardize the research tool.
- Prepare the manual for research tool

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - Seminar: 10 marks
  - Assignments: 15 marks

Course Contents:

**UNIT-I: (10 hrs)**

Meaning of Research tools, Characteristics of good measuring research tools, Factors Influencing Test Scores Types of Tools - Essay type and different forms of objective type test items

**UNIT-II (10 hrs)**

Questionnaires, Schedules, Check-lists, Rating Scales, Opinionnaire,

**UNIT-III (12 hrs)**

Writing objective type test items, scrutinizing and editing, Reliability and Validity, their meaning, different methods of establishing reliability and validity, Factors affecting Reliability and Validity

**UNIT-IV (4 hrs)**

Items Analysis

**UNIT-V (4 hrs)**

Norms, their types and characteristics, Preparation of Manual and Administration procedure

**Suggested Readings:**

1. Garrett, H.E. (1981). *Statistics in Psychology and Education (Tenth Indian Reprint)*, Vails, Feffer & Simmons Ltd.
2. Kaul, L. (2011). *Methodology of Educational Research*, Vikas Publishing House Pvt. Ltd., Noida
3. Best, J. W. and Kahn, J. (1997) *Research in Education*. (7th ed.) New Delhi: Prentice -Hall of India Ltd.
4. Ansari, M.S. (2007). *Essentials of Measurement and Evaluation*, International Publishing House, Meerut

## Basics of Research Methodology

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**Course Code: SWR-405**

**Course Name: Basics of Research Methodology**

**Credits Equivalent: 2**

**Course Objectives:** After completing this course the students should be able to:

1. Develop an understanding about the scientific approach to human inquiry.
2. Understand the meaning, importance, function and bases of research and research methodology.
3. Develop a scientific attitude towards the bases of research methodology.
4. Understand purpose and nature of statistics and statistical inferences.
5. Explore new areas of research.
6. Acquire the skills for data collection, analyses and research writing

**Attendance Requirements:**

Students are expected to attend all the lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - a. Presentation 5%
  - b. Assignment 10%
  - c. Project Work 10%

## **COURSE CONTENTS:**

### **UNIT -1: Introduction to research and research problem, variables and hypothesis**

1. Knowledge and its sources.
2. Research and scientific inquiry.
3. Application to research.
4. Types of research design.
5. Function of research design.
6. Research report.
7. Research problems, variables and hypothesis.

### **UNIT -2: Review of related literature and using the internet for research**

8. Locating and reviewing the related literature.
9. Purposes of review of related literature.
10. Steps of review of related literature.
11. Using the internet for research.

### **UNIT -3: Sampling and Measurements in research**

12. Subject, participant and sampling.
13. Types of sampling and its procedure.
14. Types of sampling techniques.
15. Uses of probability and non- probability in sampling.
16. How subject and sampling effect result.
17. What is Measurement and Evaluation.
  - a) Descriptive statistics.
  - b) Normal distribution.
  - c) Measures of central tendency.
  - d) Measures of variability.
  - e) Validity and Reliability.

### **UNIT-4: Research design –non experimental, quantitative, experimental, qualitative and mixed method**

18. Educational measures: norm reference and criterion reference test,
  - a) Types of educational measures: test, questionnaire, observation, interview
19. Non- Experimental research design.
  - a) Descriptive design, relationship design, co-relation design, comparing-comparative and co-relation design, causal comparative design, using survey in non experimental design, steps in designing survey.
20. What is experimental research- experimental validity: internal and external validity.
  - a) Experimental design
  - b) Single subject research design.

21. Qualitative research: characteristics, assumptions, types of qualitative research, credibility of qualitative research, resources of qualitative research.

**UNIT- 5: Statistics and statistical inferences in research and interpretations, conclusions and its implications.**

22. Purpose and nature of statistical inferences.

23. Inferential test: Parametric: t-Test, ANOVA, Factorial ANOVA, ANCOVA.

24. Non-parametric test: chi-square, comparison of means and relationship.

25. Purpose and nature of discussion: session of research report, interpretation of result, conclusion, recommendations and implications.

26. Intelligent consumer: questions for qualitative and quantitative research.

**Prescribed Text:**

1. Introduction to Research in Education  
([http://wps.ablongman.com/ab\\_mcmillan\\_edresearch\\_4/16/4150/1062448.cw/index.html](http://wps.ablongman.com/ab_mcmillan_edresearch_4/16/4150/1062448.cw/index.html))
2. Best and Kahn (1993) Research in Education. New Delhi: PHI
3. Trochin and Donnelly (2006). Research Method Knowledge Base. Atomic Dog  
(<http://anatomyfacts.com/Research/ResearchMethodsKnowledgeBase.pdf>)
4. Garrett, H. E. (1982). Statistics in Psychology and Education. Amazon: Paragon International Publisher

**Supplementary Books:**

1. Andrews, Richard (South Asia edition 2005): Research Questions, London: Continuum
2. Bailey, Kenneth D. (1978) Methods of Social Research, New York: Mcneil Pub.
3. Black, James A & Champion, Dean J. (1976) Methods and Issues in Social Research, New York : John Wiley
4. Gillham, Bill (2000) Case Study Research Methods, London: Continuum
5. Gillham, Bill (2000) The Research Interview, London: Continuum



## Research Report Writing

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**Course Code: TTR 504**

**Course Name: Research Report Writing**

**Credits Equivalent: 2**

**Course Objectives:** After completing this course the students will be able to:

1. Understand the significance of research report writing and identify the trends of presentation of writing a research paper
2. Write references in various styles.
3. Prepare manuscripts and format papers
4. Learn how to solve various questions such as value of publishing, key elements of publishing, structure and components of paper, writing abstracts and cite references etc.
5. Know how and where to submit articles, research papers (online submissions) to get it published

**Attendance Requirements:** Students are expected to attend all the lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - a. Presentation 5%
  - b. Assignment 10%
  - c. Project Work 10%

## **Course Contents**

**Unit -1 Introduction:** Research report writing – An Introduction; What, why, how, and for whom; General guidelines

**Unit -2 Framing the Writing Task:** The step and form of Research Writing; The nature of Research Writing; Purpose, planning and presentation, Writing a Ph.D. thesis;

**Unit-3 Listing Data and Text:** Approaches (Feminist etc;) Interpretative Research-weaving a phenomena, logical text; Life history-the integrity of her voice; Writing critical research

**Unit -4 Corrective Measures:** Reporting of findings of review of Manuscript; Measures to be taken while writing research report writing; Discussing the Reading material; Varieties of references style: APA; MLA; Chicago style; Harvard; Vancouver; Improving one's own manuscript; Criterion for evaluating manuscript/ research article; Peer review of improvements made in one's own manuscript; Reporting possible edition/ Alternatives to be made in own manuscript.

**Unit -5 Writing and Peer Evaluation:** Reviewing Printing Articles (in respective of SS, Science, management etc.); Supervised study of Articles in few journals (reputed national as well as foreign journals.); Writing abstract of a paper; Peer evaluation of the correlated references; Peer evaluations of Abstract written; Project work. Review of Various Research Articles already published in the Journals of different field of study such as Education, Environment Science, Management, Social Work etc. in workshop mode

### **Prescribed Texts:**

- Self developed relevant materials.
- Clare, J & Hamilton, H (2003) "Writing research transforming Data into Text", Churchill Livingstone (ISBN 0443071829).
- Davis, Martha (2005) "Scientific Papers and Presentations", 2<sup>nd</sup> Edition. Academic Press (ISBN 0-12-088424-0)

### **Supplementary Sources:**

- Katz, Michael Jay (2009) From Research to Manuscript: A Guide to Scientific Writing. Springer Verlag
- Grossman, Michael (2004) "Writing and Presenting Scientific Papers", 2nd edition, Nottingham University Press, (ISBN 1-897676-12-3).
- HINARI Publishing Skills Web-bibliography
- Essential Health Links/Publishing Skills

<http://www.healthnet.org/essential-links/publishing-skills.html>

## Philosophy of Educational Research

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**Course Code: TTR-608**

**Course Name: Philosophy of Educational Research**

**Credits Equivalent: 4**

**Course Objectives:** After completing this course the students should be able to:

1. Develop an understanding about the philosophy of research in general
2. Understand the meaning, importance, function and bases of philosophy of research methodology.
3. Develop an understanding of development of epistemology in general and science and mathematics in particular.
4. Explore and explicate Epistemological Foundations of Mathematics and Sciences with relation to how does disciplinary knowledge develop and what are the implications for the design of instruction in math and science?
5. Acquaint with epistemic culture of research in mathematics and science

**Attendance Requirements:**

Students are expected to attend all the lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 marks out of 100
  - a. Presentation 5%
  - b. Assignment 10%
  - c. Project Work 10%

## **COURSE CONTENTS:**

### **UNIT -1: Introduction: Purpose and Perspective**

Philosophy of Research

Development of Epistemology: Thinkers and Thoughts

Philosophy of Science and Mathematics;

3.1 What is Science?

3.2 Science and Non-Science / Pseudo-Science

3.3 The Aims and Claims of Science

3.4 The Limitations of Science

3.5 Description, Causality, Prediction, and Explanation

3.6 Realism and Instrumentalism

3.7 Mathematics and Science

Social Epistemology

### **UNIT -2: Epistemological Foundation of Mathematics, Sciences and Social Sciences**

2.1 Why Epistemology Matters for Science, Social Science and Mathematics Education

2.2 Study and analysis of Works of Kuhn, Popper, Lakatos, Feyerabend, Earnst, etc.

### **UNIT -3: Method and Methodology in Scientific Research**

3.1 Scientific Statements: their Justification and Acceptance

3.2 Measurement

3.3 Experimentation & Observation

3.4 Scientific Method and the Design of Research

3.5 Uncertainty, Probability & Statistics in Research

### **UNIT -4: Epistemic-developmental Psychology and Epistemically Oriented Instruction (Studies of Conceptual Change) in:**

Science, Social Science and Mathematics Education

### **UNIT- 5: Ethics Responsibility in Scientific Research**

a. Ethics in Research: Guidelines for Ethical Practices in Research;

b. From UnEthics to Ethics in Research

c. The Responsibility of Scientists & of Science as an Institution

d. Science and Spirituality: The Concept of Truth as it is used in Science & Spirituality;  
GAIA theory & Consciousness

### Prescribed Text:

1. Introduction to Research in Education  
([http://wps.ablongman.com/ab\\_mcmillan\\_edresearch\\_4/16/4150/1062448.cw/index.html](http://wps.ablongman.com/ab_mcmillan_edresearch_4/16/4150/1062448.cw/index.html)).
2. Jha, A. K. (2005). *Nyaya Philosophy: Epistemology and Education*. New Delhi: Standard Publishers (India)
3. Chalmers, A. F. (1999). *What is This Thing Called Science?*. Queensland: University of Queensland Press.
4. Kuhn, T. (1996). *The Structure of Scientific Revolutions*(4th ed.). Chicago: University of Chicago Press.
5. Popper, K. (1983). *The Logic of Scientific Discovery*. London: Hutchinson
6. Feyerabend, P. ( ). *Against Method. Science in Free Society*.
7. Pruzan, P. *Perspectives on Research* (Unpublished).

### Supplementary Books:

1. Bazerman, C. (1988). *Shaping written knowledge. The genre and activity of the experimental article in science*. Madison: University of Wisconsin Press.
2. Gooding, D. C. (1990). *Experiment and the making of meaning*. Dordrecht: Kluwer.
3. Knorr Cetina, K. D. (1999). *Epistemic cultures: How the sciences make knowledge*. Cambridge: Harvard University Press.
4. Lakatos, I. *Proofs and refutations. The logic of mathematical discovery*. Cambridge: Cambridge University Press.
5. Knorr Cetina, K. (1999). *Epistemic cultures. How the sciences make knowledge*. Cambridge, MA: Harvard University Press.
6. Hodson, D. (2008). *Towards scientific literacy. A teachers' guide to the history, philosophy and sociology of science*. Rotterdam: Sense Publishers.
7. Lakoff, G., & Nunez, R. E. (2000). *Where mathematics comes from. How the embodied mind brings mathematics into being*. New York: Basic Books.
8. Knorr Cetina, K. (1999). *Epistemic cultures. How the sciences make knowledge*. Cambridge, MA: Harvard University Press.
9. Latour, B. (1999). *Pandora's hope. Essays on the reality of science studies*. Cambridge, MA: Harvard University Press.
10. Earnst, P.
11. Gowers, T. (2008). *The Princeton Companion to Mathematics*. New Jersey: Princeton University Press.

## Alternatives in Education

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**Course Code: TTR 611**

**Course Name: Alternatives in Education**

**Credits Equivalent: 4**

**Course Objective:** After completing this course the students will be able to:

1. Develop an understanding about Alternatives Education.
2. Identify and acquaint themselves with Philosophical Alternatives in Education.
3. Develop and Explain perspectives on Psychological and Sociological alternatives in Education.
4. Make a difference between the approaches of Behaviourism, Cognitivism, Constructivism in Education

**Attendance Requirements:** Students are expected to attend all the lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - a. Presentation 5%
  - b. Assignment 10%
  - c. Project Work 10%

### Unit -1

1. **Introduction, Purpose and Perspective:** Facets of Alternatives, Constructivist Epistemology and Pedagogy with relation to knowing, teaching – learning and Assessment.

## Unit -2

### 1. The Origins of Alternative Education:

- a. John Lock and Tabula Rasa
- b. Rousseau and romantic notion of Childhood.
- c. The dawn on progressive Education – John Dewey.
- d. Steener and Woldorf Schools.

## Unit -3

### 1. Philosophical Alternative in Education:

- a. Idealism, Naturalism, Realism and Pragmatism (Western Perspective).
- b. Buddhism, Jainison, Vedanta Philosophy, Upanishad and Sankhya Darshan (Indian Perspective).

## Unit -4

### 1. Sociological alternatives approach in Education:

- a. Works of Paulo Frere, Ivan Illich, Reimer, Jyotiba phule and M. Gandhi etc.

## Unit -5

### 1. Alternative to Schooling – Models and Stories:

- a. Independent School – Charter School – Homeschooling.
- b. Free School Movement, Montessori School, Sudbury Valley School.
- c. Summer Hill and A. S Neil.
- d. John Dewey and the UCLA lab School.
- e. Shantiniketan and Tagore,
- f. Naitalim and Gandhiji.
- g. Krishna Murti Foundation of India, Auribindo School.
- h. The Peepal Grove School (Andhra Pradesh)

## Prescribed Text:

1. Jha, A. K. (2009). Constructivist Epistemology and Pedagogy: Insight into Teaching Learning and Knowing. New Delhi: Atlantic Publishers and Distributors
2. Frere, P. (1968). Pedagogy of the Oppressed.
3. Illich, I. (1971). Deschooling Society.
4. Reimer, E. (1971). The School is Dead.
5. Aglave,S (2005) Jotiba Phule ka samajik Darshan
6. Deshantari,D(2001) Bharat ke Sanmajik Krantikari

**School of Humanities & Languages**



## Department of English & European Languages

### School of Humanities & Languages

Name of the Department: **Department of English & European Languages**

Name of the Programme of Study: **MA (English Language & Literature)**

#### Courses for Semester 2

Sr. No.	Course Code	Name of Course	Credit	Code No. of Pre-requisite/ Co-requisites if any	Name of Teacher
1.	EEL 408	Literature and Gender: Global Perspectives	2	NA	Ms. Shaweta Nanda (SN)
2.	EEL 418	Studying the Canon: Shakespeare	4	NA	Dr. Khem Raj Sharma(KRS)
3.	EEL 432	Mystical Literature in English Translation	2	NA	Dr. Roshan Lal Sharma (RLS)
4.	EEL 435	Popular Literature	2	NA	Ms. Shaweta Nanda (SN)
5.	EEL 442	Teaching Language through Literature	2	NA	Dr. Roshan Lal Sharma & Dr. KBS Krishna (KBS)
6.	EEL 501	Romanticism	4	NA	Mr. Hem Raj Bansal (HRB)
7.	EEL 502	Victorianism	4	NA	KBS

#### Courses for Semester 4

Sr. No.	Course Code	Name of Course	Credit	Code No. of Pre-requisite/ Co-requisites if any	Name of Teacher
1.	EEL 416	Introduction to Translation Studies	2	NA	Dr. Khem Raj Sharma
2.	EEL 509	Australian Literature	4	NA	Mr. Hem Raj Bansal
3.	EEL 511	Modern Literary Theory	4	NA	Dr. Roshan Lal Sharma
4.	EEL 512	Indian Writing in English	4	NA	KBS
5.	EEL 515	African Literature	4	NA	Ms. Shaweta Nanda
6.	EEL 499	Dissertation	4	NA	SN; KRS; KBS; HRB; RLS

### University Wide Courses

Sr. No.	Course Code	Name of Course	Credit	Code No. of Pre-requisite/ Co-requisites if any	Name of Teacher
1.	EEL 410	Literature and Filmic Adaptation	2	NA	KBS & SN
2.	EEL 411	Advanced Reading and Comprehension	2	NA	RLS & KBS
3.	EEL 412	Academic Writing	2	NA	SN; KRS; KBS; HRB
4.	EEL 438	Short Stories from around the World	2	NA	HRB & SN
5.	EEL 413	Advanced Analytical English	2	NA	RLS & KBS
6.	EEL 432	Mystical Literature in English Translation	2	NA	RLS
7.	EEL 435	Popular Literature	2	NA	SN

## Literature and Gender: Global Perspectives

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**Course Code:** EEL 408

**Course Name:** Literature and Gender: Global Perspectives

**Credit Equivalents:** 02 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid -Term Examination: 25%
  2. End -Term Examination: 50%
  3. Continuous Internal Assessment: 25%
- Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Credits Equivalent:** 02 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course has been designed to:

Understand Gender as a historically constructed category.

Unearth the role that various institutions such as Religion, Law, and Medicine play in construction and dissemination of our primary assumptions about different conceptions of gender and prescribed gender roles.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Course Content:**

**UNIT – I: Introduction**

**(2 Hours)**

- a) Introduction to the discipline of Gender Studies?
- b) Social, political, intellectual and literary background to Gender Studies
- c) Significance of a course on Gender Studies

**UNIT – II: Construction of Popular Conceptions of Gender in Literature**

**( 3 Hours)**

- i) Alfred Tennyson “The Lady of Shallot”

- ii) Grim Brothers "Rapunzel"
- iii) Rudyard Kipling "The White Man's Burden"

**UNIT - III: Novel**

Alice Walker's *The Color Purple* (1992)

**( 4 Hours)**

- Introduction: Author, Genre (Autobiography)
- The Text: *The Color Purple*
- Critical Analysis/Interpretation of various ideas concerning Gender

: masculinity in family, black masculinity, white masculinity, gender roles, construction of femininity (white and black), sexuality

**Unit - IV: Prose Readings**

**(6 Hours)**

- a) Michel Foucault : Selections from *History of Sexuality* Volume 1.
- b) Judith Butler: Selections from *Gender Trouble*
- c) Simone De Beauvoir Selections from *The Second Sex*
- d) Gayle Rubin: "Thinking Sex: Notes for a Radical Theory"

**UNIT - V:**

**( 5 Hours)**

- a) Adrienne Rich: Selections from "Compulsory Heterosexuality and Lesbian Existence"
- b) Sonali : "Sum Total: A Matrimonial"
- c) Devdutt Pattnaik: "Death of a Gay Man"
- d) R.W Conell James W. Messerschmidt: Selections from "Hegemonic Masculinities: Rethinking the Concept."

**Prescribed Text Books:**

1. Walker, Alice. *The Color Purple*. New York: Harvest Books, 1982.
2. Michel Foucault. *History of Sexuality* Volume 1.
3. Judith Butler. *Gender Trouble: Feminism and the Subversion of Identity*. New York: Routledge, 2006. Print.
4. Simone De Beauvoir .*The Second Sex*. New York: Vintage, 1989. Print.
5. Gayle Rubin: "Thinking Sex: Notes for a Radical Theory." *Pleasure and Danger: Exploring Female Sexuality*. Ed. Carol Vance. Boston: Routledge, 1984. Print.

6. R.W Conell and James W. Messerschmidt. Hegemonic Masculinities: Rethinking the Concept." *Gender and Society*. 16.9.
7. Alfred Tennyson "The Lady of Shallot." *Ten Major Victorian Poets*. Ed. Robert Bernard Martin. Random House, 1964. Print.
8. Grim Brothers "Rapunzel." *The Complete Grimm's Fairy Tales*. Pantheon Books, 1982. Print.
9. Rudyard Kipling . "The White Man's Burden." Rudyard Kipling: Complete Verse. Michigan: Anchor Press, 1989. Print.
10. Downs, Laura Lee. *Writing Gender History*. London: Bloomsbery Academic, 2004. Print.
11. Because I have a Voice. Ed . Arvind Narrain and Gautam Bhan. New Delhi: Yoda Press, 2005. Print.
12. Rich, Adrienne. *Adrienne Rich's Poetry : Texts of Poems, the Poet on Her Works*. Ed. Barbara Gelpi and Albert Gelpi. New York: Norton, 1975. Print.

## Immigrant and Diasporic Writings

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** EEL 409

**Course Name:** Immigrant and Diasporic Writings

**Credits Equivalent:** 02 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed towards defining and differentiating the concept of immigrant, exile, the diaspora and the expatriate with reference to individual and collective histories, imagined and actual journeys, home and homelessness, and reconstruction of time and space.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Quiz : 5%
  - Presentations: 5%

**Course Contents:**

**UNIT – I: Introduction (2 Hours)**

- Concept of Diaspora
- Indian Diaspora
- World Diaspora

**UNIT – II: Chitra Banerjee Divakaruni : *Arranged Marriage* (5 Hours)**

- Introduction: The Author, The Novel
- The Text
- Critical Analysis/Interpretation

**UNIT – III: Dalai Lama: *Freedom in Exile* (5 Hours)**

- Introduction: The Author, The Biography
- The Text
- Critical Analysis/Interpretation

**UNIT – IV: Derek Walcott: *Poems* (5 Hours)**

- Introduction: The Poet, The Poems
- A City's Death By Fire
- The Sea is History
- A Far Cry from Africa
- Love After Love
- Critical Analysis/Interpretation

**UNIT – V: The Making, Development and Unmaking of Diaspora (3 Hours)**

- Proliferation of Incipient Diasporas
- Impact of Globalization
- Migrants as Social Actors



**Prescribed Text Books:**

1. Divakaruni, Chitra Banerjee. *Arranged Marriage*. New Delhi: Black Swan, 1997.
2. Lama, Dalai (2009). *Freedom in Exile*. Abacus, London.
3. Walcott, Derek (1986). *Collected Poems (1948-1984)*. Faber and Faber, London.
4. Cohen, Robin (2008). *Global Diasporas: An Introduction*. Routledge, London.
5. Sheffer, Gabriel (2003). *Diaspora Politics At Home Abroad*. Cambridge, UK.

**Suggested Reading:**

1. Said, Edward W. (2001). *Reflections on Exile and Other Literary and Cultural Essays*. Penguin, New Delhi.
2. Ashcroft, Bill (2005). *The Empire Writes Back*. Routledge, Chennai.

## Academic Writing

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**Course Code:** EEL 412

**Course Name:** Academic Writing

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:**

1. To train students to enhance their skills in written communication through practical conduct of this course.
2. This course will help students in understanding the principles & techniques of professional academic writing skills.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i Subjective Assignment: 10%
  - ii Classroom Presentations: 10%
  - iii Attendance: 5%

**Course Content:****UNIT 1:      **Basics of Research****

Research and writing, Plagiarism, The Mechanics of Writing, Format of Research Paper, Documentation

**UNIT-2:      **Fundamentals of professional Writing****

Adaption and the Selection of Words, Construction of Clear Sentences and Paragraphs, Writing for Effect.

**UNIT-3:      **Basic Patterns of Professional Messaging****

The Writing Process and an Introduction to Business Messages, Persuasive Written Messages, Strategies (Direct or Indirect) in Messaging.

**Unit-4: Fundamentals of Report Writing**

Basics of Report Writing, Short Reports and Proposals, Long and Formal Reports.

## **Unit-5      The Job Application Process—The Written Job Presentation**

Self-assessment, Resume, Cover Letters to Resume.

### **Prescribed Text Books:**

1. Lesikar, Raymond V et al. (2009). *Business Communication*. Tata McGraw Hill, New Delhi.
2. *MLA Handbook for Writers of Research Papers (2009)*. East-West Press, New Delhi.
3. Murphy, Herta A. et al (2010). *Effective Business Communication*. Tata McGraw Hill, New Delhi.

### **Suggested Extra Readings:**

1. Monipally, Matthukutty M. (2010). *Business Communication Strategies*. Tata McGraw Hill, New Delhi.
2. Sethi, Anjane, Bhavana Adhikari. *Business Communication*. Tata McGraw Hill, New Delhi.
3. Hynes, Geraldine E. (2010). *Managerial Communication*. Tata McGraw Hill, New Delhi.
4. Weiss, (2010). *The Elements of International English Style— A Guide to Writing Correspondence, Reports, Technical Documents, and Internet Pages for a Global Audience*. PHI Learning, Delhi.

## Introduction to Translation Studies

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**Course Code:** EEL 416

**Course Name:** Introduction to Translation Studies

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to understanding the development of translation studies with reference to text, translatability and canonization, theory and practice of translation, cross cultural inter connections on the levels of language, literature and society.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Course Contents:**

**UNIT – I: Introduction**

**(2Hours)**

- Translation Studies: A Brief Historical Purview
- Translation Studies: Meaning, Nature and Scope

**UNIT – II: Select Essays by Noted Translation Studies Theorists (8 Hours)**

- “The Task of the Translator” by Walter Benjamin
- “Principles of Correspondence” by Eugene Nida
- “The Politics of Translation” by Gayatri Chakravorty Spivak
- “Translation, Community, Utopia” by Lawrence Venuti

**UNIT – III: On Reading a Translated Text: “Mitsav” a Short Story (4Hours)**

- Source Text
- Translated Text
- Theoretical issues involved

**Unit – IV: On Translating a Text (4 Hours)**

- Source language vs. Target Language : Issues and Challenges
- Issues of Translatability

**Unit – V: Translation Studies Today (2 Hours)**

- Issues Involved
- Future of Translation Studies

**Prescribed Text Books:**

1. Bassnett, Susan (2002). *Translation Studies*. Methuen, London.
2. Venuti, Lawrence, ed. (2003). *The Translation Studies Reader*. Routledge, London. (Select Essays)
3. Phull, Sushil K. “Mitsav”. *Short Stories of Himachal Pradesh*. Meenakshi F. Paul (transl.). (2007) New Delhi: Indus Publishing Company, Delhi. 43-53.

**Suggested Extra Readings:**

1. Baker, Mona, and Gabriela Saldanha eds. (1998). *The Routledge Encyclopaedia of Translation Studies*. Routledge, London. (Select Sections)
2. Bassnett, Susan and Harish Trivedi (1999). *Postcolonial Translation: Theory and Practice*. Routledge, London. (Select Sections)
3. Catford J. C. (1965). *A Linguistic Theory of Translation*. OUP: London.
4. Gentzler, Edwin (1993). *Contemporary Translation Theories*. Routledge, London.
5. Mukherjee, Sujit (2004). *Translation as Recovery*. Pencraft International, Delhi.
6. Nair, Sreedevi K. (1996). *Aspects of Translation*. Creative Books, New Delhi.
7. Niranjana, Tejaswini (1995). *Siting Translation: History, Post-structuralism and the Colonial Context*. Orient Longman, Hyderabad.
8. Singh, Avadhesh K (1996). *Translation: Its Theory and Practice*. Creative Books: New Delhi.
9. St.Pierre, Paul and Prafulla C. Kar, eds. (2009) *In Translation: Reflections, Refractions, Transformations*. Pencraft International, Delhi.
10. Venuti, Lawrence (1995). *The Translator’s Invisibility*. Routledge, London.

## Writings from the Margins

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**Course Code:** EEL 417

**Course Name:** Writings from the Margins

**Credit Equivalents:** 02 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid -Term Examination: 25%
2. End -Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Credits Equivalent:** 02 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course has been designed to:

Understand the idea of the margin and the marginalized as a historically constructed identity, varieties of marginal representations, and variations in language, image making and representation, rise of new literary culture and rejection of the canon.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Course Content:**

**UNIT – I: Introduction** **(2 Hours)**

- d) What constitutes voices from the margins?
- e) Why study literatures from the margins?
- f) Social, political, intellectual and literary background

**UNIT – II: Novel**

Alice Walker: *The Color Purple* (1982) **(7 Hours)**

- Introduction: Author, Genre (Novel)
- The Text: *The Color Purple*(1982)
- Critical Analysis/Interpretation

**UNIT – III: Autobiography** **(7 Hours)**

Bama: *Karukku* (1992)

- Introduction: Author, Genre (Autobiography)



- The Text: *Karukku*
- Critical Analysis/Interpretation

**UNIT – IV: Poetry**

**(2 Hours)**

a) Adrienne Rich : two poems from *Twenty- One Love Poems* (1977)

- Introduction: Author, Genre (Poetry)
- The Text
- Critical Analysis/Interpretation

**Unit – V: Prose Readings**

**(2 Hours)**

- e) bell hooks : *Aint I a Woman: Black Women and Feminism*. “Introduction” (pages 1-13)(1982) **(1 Hour)**
- f) Adrienne Rich: Selections from “Compulsory heterosexuality and Lesbian Existence” (1980) **(1 Hour)**

- Introduction: Author, Intellectual context
- The Text
- Critical Analysis/Interpretation

**Prescribed Text Books:**

1. Walker, Alice. *The Color Purple*. New York: Harvest Books, 1982.
2. Bama. *Karukku*. New Delhi: Oxford India, 1992.
3. Gelpi, Barbara Charlesworth and Albert Gelpi (ed). *Adrienne Rich's Poetry and Prose*. New York: W. W. Norton & Company, 1993.
4. Hooks, Bell. *Ain't I a Woman: Black Women and Feminism*. Boston: South End Press, 1982.

**Suggested Reading:**

1. Gates, Henry Louis (ed). *Reading Black, Reading Feminist: A Critical Anthology*. New York: Penguin, 1990.
2. Bloom, Harold. *Modern Critical Interpretations: Alice Walker's The Color Purple*. New York: Chelsea, 2000.
3. Mukherjee, Alok (trans.). *Sharan Kumar Limbale: Towards an Aesthetic of Dalit Literature: History, Controversies and Considerations*. Mumbai : Orient Longman, 2004
4. Foucault, Michel. *The History of Sexuality, Volume 1*(trans. Robert Hurley). New York: Vintage, 1990.

## Studying the Canon: Shakespeare

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 418

**Course Name:** Studying the Canon: Shakespeare

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to understanding and defining the canon with reference to British dramatic and poetic tradition, Shakespeare's individual talent, contemporaneity, impact and reception.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Course Contents:**

**UNIT – I: The Tempest**

**(9 Hours)**

- Introduction: The Author, The Play
- The Text
- Critical Analysis/Interpretation

**UNIT – II: Merchant of Venice**

**(9 Hours)**

- Introduction to the Play
- The Text
- Critical Analysis/Interpretation

**UNIT – III: Julius Caesar**

**(9 Hours)**

- Introduction to the Play
- The Text
- Critical Analysis/Interpretation

**Unit – IV: Richard II**

**(9 Hours)**

- Introduction to the Play
- The Text
- Critical Analysis/Interpretation

**Unit – V: Sonnets & Poems**

**(4 Hours)**

- Introduction to Shakespearean Sonnets & Poem
- Sonnets: 3, 18, 64, 116
- Poem: Mercy
- Critical Analysis/Interpretation

**Prescribed Text Books:**

1. Shakespeare, William (2008). *Julius Caesar*. Atlantic Distributors, New Delhi.
2. Shakespeare, William (2008). *Merchant of Venice*. Atlantic Distributors, New Delhi.
3. Shakespeare, William (2009). *Richard II*. Atlantic Distributors, New Delhi.
4. Shakespeare, William (2009). *The Complete Sonnets and Poems*. Oxford University Press, New Delhi.
5. Shakespeare, William (2009). *The Tempest*. Pearson-Longman, New Delhi.

**Suggested Reading:**

1. Selleck, Nancy (2008). *The Interpersonal Idiom in Shakespeare, Donne, and Early Modern Culture*. Palgrave Macmillan, Hampshire.
2. Bloom, Harold ed. (2008). *Bloom's Shakespeare Through the Ages: The Sonnets*. Infobase Publishing, New York.
3. Ashcroft, Bill (2009). *Caliban's Voice: The Transformation of English in Post-colonial Literatures*. Routledge, New York.

C U H M P

## Short Stories from around the World

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 438

**Course Name:** Short Stories from around the World

**Credits Equivalent:** 02 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to make students aware about

- The genre of short story and its historical evolution across continents.
- The best short stories around the globe, picking at least one from major authors of the world.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Quiz : 5%
  - Presentations: 5%

**Course Contents:**

**UNIT – I: Introduction**

**(2 Hours)**

- A Historical Overview
- Short Story: Its points of departure/ variance from other literary genres.

**UNIT – II: Indian/Pakistani Short Stories**

**(4 Hours)**

- Sadat Hasan Manto
- “The Reunion”
- Bama
  
- “Scorn”
- Humera Afridi
- “The Price of Hubris”

**UNIT – III: British/ American Short Stories**

**(4 Hours)**

- Agatha Christie
- “ The Kidnapped Prime Minister”
- Kate Chopin
- “The Story of an Hour”

**UNIT – IV Russian/ French Short Stories Short Stories**

**(4 Hours)**

- Tolstoy, Leo
- “How Much Land does a Man Need?”
- Guy de Maupassant
- “The Necklace”

**UNIT – V: South African/ African - American: Columbian Short Stories**  
**(6 Hours)**

- Nadani Gordimer
- “The Ultimate Safari”
- James Baldwin
- “Sonny’s Blues”
  
- Gabriel Garcia Marquez
- A very Old Man With Enormous Wings”

**Prescribed Text Books:**

1. Manto, Saadat Hasan. *Manto: Selected Short Stories*. Trans. Aatish Taseer. Delhi: Random House/Vintage, 2012. Print
2. Bama. “Scorn.” *The Little Magazine*. 6.4. Web.  
<http://www.littlemag.com/reservation/bama2.html>.
3. Afridi, Humera. “The Price of Hubris.” *And the World Changed*. Ed. Muneeza Shamsee. New York: Feminist Press at The City University of New York, 2008. Print. Tolstoy, Leo. *The Greatest Short Stories of Leo Tolstoy*. Mumbai: Jaico Publishing House, 2009. Print.
4. Christie, Agatha. “The Kidnapped Prime Minister”. *Fiction 100: An Anthology of Short Stories*. Ed. James H. Pickering. New York: Macmillian Publishing Company, 1992. Print.
5. Chopin, Kate. “The Story of an Hour.” *Fiction 100: An Anthology of Short Stories*. Ed. James H. Pickering. New York: Macmillian Publishing Company, 1992. Print.
6. Tolstoy, Leo. *The Greatest Short Stories of Leo Tolstoy*. Mumbai: Jaico Publishing House, 2009. Print.
7. Maupassant, Guy de. *The Complete Short Stories*. Delhi: Rupa Publications, 2000. Print.
8. Baldwin, James. “Sonny’s Blues.” *Fiction 100: An Anthology of Short Stories*. Ed. James H. Pickering. New York: Macmillian Publishing Company, 1992. Print.
9. Gordimer, Nadine. *Jump and Other Stories*. UK: Bloomsbury Publishing, 2013. Print.
10. Marquez, Gabriel Garcia. “A Very Old Man With Enormous Wings”. *Fiction 100: An Anthology of Short Stories*. Ed. James H. Pickering. New York: Macmillian Publishing Company, 1992. Print.
11. Boynton, Robert W. *Introduction to the Short Story*. Sandton : Heinemann Educational Books, 1992 Print.

## Romanticism

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** EEL 501

**Course Name:** Romanticism

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to understand the role and nature of Romantic imagination – new themes and techniques and the role of the individual in a liberal space. It shows how Romantic poets, novelists and essayists enlarged the scope of literature by drawing on the philosophy of Rousseau. It aims to study literature with a new perspective, contrasting it with Neo classicism and Enlightenment.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.



**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Course Contents:**

**UNIT – I: Introduction to the Period**

**(3 hours)**

- Romanticism : Philosophical Origin
- Philosophers: Kant, Hegel, Schiller, Voltaire, Goethe, Lessing
- The French Revolution

**UNIT –II: Poetry of the First Generation of the Romantic Poets**

**(11 hours)**

- William Wordsworth – ‘The Prelude: Book 2’, ‘I Wandered Lonely as a Cloud’, ‘The Rainbow’
- Samuel Taylor Coleridge – ‘Kubla Khan’, ‘Rime of the Ancient Mariner’

**UNIT – III: Poetry of the Second Generation of the Romantic Poets**

**(12 hours)**

- John Keats – ‘Endymion’, ‘Ode on a Grecian Urn’, ‘Ode on Melancholy’
- P.B. Shelley – ‘Adonais’, ‘Ode to the West Wind’, ‘The Cloud’
- Lord Byron – ‘Prometheus’, ‘She Walks in Beauty’, ‘When We Two Parted’

**UNIT – IV: Mary Shelley: *Frankenstein***

**(8 hours)**

- Introduction: Author

- The Text
- Critical Analysis/Interpretation

**UNIT – V: Essays**

**(6 hours)**

- Introduction to the Genre of Essay & the Essayists
- Essays of Charles Lamb
- Essays of William Hazlitt

**Prescribed Text Books:**

1. Shelley, Marry. *Frankenstein*. Puffin Books. 2011.
2. Keynes, Geoffrey, ed. (2004). *Selected Essays of William Hazlitt 1778 to 1830*. Kessinger Publishing House, Montana.
3. Lamb, Charles (2009). *Essays of Elia*. Hesperus Press, London.
4. Wordsworth, Jonathan, Jessica Wordsworth, eds. (2005). *The Penguin Book of Romantic Poetry*. Penguin, New Delhi.

**Suggested Reading:**

1. [Abrams](#), M. H. (1973). *Natural Supernaturalism: Tradition and Revolution in Romantic Literature*. W.W. Norton & Company, New York.
2. Curran, [Stuart \(1993\)](#). *The Cambridge Companion to British Romanticism*. Cambridge University Press, Cambridge.
3. [Chandler](#), James (1984). *Wordsworth's Second Nature: A Study of the Poetry and Politics*. University of Chicago Press, Chicago.
4. Frederick, [Burwick](#) (2009). *The Oxford Handbook of Samuel Taylor Coleridge*. OUP, Oxford.
5. [O'rourke](#), James (1998). *Keats's Odes and Contemporary Criticism*. University Press of Florida, Florida.
6. Sanders, [Andrew \(2004\)](#). *The Short Oxford History of English Literature*. OUP, Oxford.
7. Abrams, M.H. ed. (2012). *The Norton Anthology of English Literature, 9<sup>th</sup> ed.* W.W. Norton & Company, New York.
8. Johanna M.Smith. Ed. *Frankenstein : Case Studies in Contemporary Criticism*. Bedford/St. Martin 2<sup>nd</sup> edition, 2000.
9. Huntington, Williams. *Rousseau and Romantic Autobiography*. OUP. 1983.

## Literature of the Indian Sub-Continent

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 506

**Course Name:** Literature of the Indian Sub-Continent

**Credit Equivalents:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to:

Introduce major developments in the literature of the Indian Sub-Continent by introducing them to the works of significant authors hailing from India, Pakistan and Bangladesh and sensitizing students about the rich cultural history and background of the Indian Sub-Continent.

To acquaint students with different literary genres deployed by different male and female writers in order to understand the impact of Colonization, Partition, Independence apart from unpacking issues of class, gender and identity.

#### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

1. Mid -Term Examination: 25%
2. End -Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

Course Content:

UNIT – I: Introduction (2 Hours)

- Introduction to the significant historical moments along with the social, political and economic condition of different parts the Indian Sub-continent from the 19<sup>th</sup> century to the Present
- Introduction to the important literary movements and phases of the Indian Sub-continent

UNIT – II: (12 Hours)

1. Munshi Premchand :“The Chess Players” ( short story)
2. Rabindra Nath Tagore: *The Home and the World* ( novel)
3. Rabindra Nath Tagore :“Nationalism in India” (prose )
4. Namvar Singh :“Decolonising the Indian Mind” (Prose)

Introduction: Author, Genre  
Close Reading of the text  
Critical Analysis/Interpretation

UNIT – III: Short Stories and Prose works (8 Hours)

- i) Sadat Hassan Manto :“Toba Tek Singh”
- ii) Sadat Hassan Manto: “Open It”
- iii) Rajinder Singh Bedi: “Lajwanti”
- iv) Bapsi Sidwa: “Defend yourself Against Me”
- v) “Blood”. Urvasho Bhutalia ( Prose works)
- vi) “Recovery, Rupture, Resistance: Indian State and Abduction of Women during Partition”. Ritu Menon and Kamla Bhasin ( Prose works)

- Introduction: Author, Genre
- Close Reading of the text
- Critical Analysis/Interpretation

UNIT – IV: (12 Hours)

- i) Mahashweta Devi: *Mother of 1084* (Drama)
- ii) Selections from Yasmin Saikia: *Women, War, and the Making of Bangladesh: Remembering 1971* (Prose)
- ii) Humera Afridi: “ The Price of Hubris” (Short story)
- iii) Selections from Malala Yousafzi: *I Am Malala: The Girl Who Stood Up for Education and Was Shot by the Taliban* ( Prose works)

Unit V: Poetry (6 Hours)

- i) Aga Shahid Ali. “Postcard from Kashmir”;

- ii) G.J.V Prasad. "Desperately Seeking India"
- iii) Tenzin Tsundue . "The Tibetan in Mumbai"
- iv) Robin S. Ngangom. "15<sup>th</sup> August 2008, North East India"
- v) Jean Arasanayagam. Poems from *Apocalypse '83* (1984)

Prescribed Books:

1. Premchand, Munshi. *The Chess Players and Other Stories*. Hind Pocket Books, 1987.
2. Tagore, Rabindranath. *The Home and the World*. New Delhi:Doaba Publications, 2002. Print.
3. Tagore, Rabindranath . "Nationalism in India." *Nationalism*. Macmillan Company, 1917. Print.
4. Singh, Namvar. "Decolonising the Indian Mind." *Indian Literature: Sahitya Academy*. 35.5. Web.
5. *Orphans of the Storm: Stories on the Partition of India*. Ed. Saros Cowasjee and K.S. Duggal. New Delhi:UBSPD, 1995. Print.
6. *Granta 57: India! The Golden Jubilee*, 1997. Print.
7. Devi, Mahashweta. *Mother of 1084* .*Calcutta: Seagull Books*,1997. Print
8. Saikia, Yasmin. *Women, War, and the Making of Bangladesh: Remembering 1971* Duke University Press Books, 2001. Print.
9. *And the World Changed: Contemporary Short Stories by Pakistani Women*. Ed. Muneeza Shamsie. New York: The Feminist Press, 2008. Print.
10. Yousafzi, Malala *I Am Malala: The Girl Who Stood Up for Education and Was Shot by the Taliban*. Little Brown and Company, 2013.
11. *Sixty Indian Poets*. Ed. Jeet Thayil. New Delhi: Penguin Books, 2008. Print.
12. Arasanayagam, Jean. *Apocalypse '83*. International Centre for Ethnic Studies, 2003. Print.

## Australian Literature

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 509

**Course Name:** Australian Literature

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to

- Make students aware about literature of the First Nations with a focus on Australian Indigenous literature.
- Explore the settler and native narratives to know about the initial contact of Colonizers and the colonized.
- Acquaint them with major literary writers of Australia and their works

### **Attendance Requirements:**

Students are expected to attend all lectures in order to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%

- Seminar: 5%
- Presentations: 5%

**Course Contents:**

**Unit – I: A Historical Overview**

**(6 Hours)**

- The Concept of ‘Terra Nullius’
- Resistance of the Settlers
- Devastating Effect of the So Called Civilizing Mission
- Australian Unjust and Discriminatory Policies
- The Policy of Assimilation, Aborigines Protection Acts, Stolen Generations

**Unit- II: The Genre of Drama**

**(10 Hours)**

- Jack Davis
- *No Sugar*
- Hannie Rayson
- *Hotel Sorrento*

**Unit-III: The Genre of Fiction**

**(10 Hours)**

- Peter Carey
- *True History of Kelly Gang*
- Patrick White
- *A Fringe of Leaves*

**Unit-IV: Short Stories/Poetry**

**(8 hours)**

- Tim Winton
- *Scission and other stories*
- Judith Wright
- *Human Pattern: Selected Poems*

**Unit-V: Autobiography**

**(6 hours)**

- Autobiography: Questioning through Self-Narrative
- Sally Morgan
- *My Place*

### Prescribed Text Books:

- Morgan, Sally. *My Place*. New Delhi: Indialog Publishers Private Limited, 2011.
- Davis, Jack. *No Sugar*. Sydney: Currency Press Pvt. Limited, 1986.
- Wright, Judith. *Human Pattern: Selected Poems*. Sydney: Carcanet Pvt. Ltd., 2011.
- Rayson, Hannie. *Hotel Sorrento*. Sydney: Currency Press, 2011.
- Winton, Tim. *Scission*. Australia: Penguin Australia, 1998.
- Carey, Peter. *True History of the Kelly Gang*. Delhi: Penguin India, 2001.
- White, Patrick. *A Fringe of Leaves*. Australia: Penguin Classics, 2003.
- Bennett, Bruce and Jennifer Strauss. Eds. *The Oxford Literary History of Australia*. Melbourne: OUP, 1998. Print.
- Clark, Manning. *A Short History of Australia*. New York: New American Library, 1980. Print.

### Suggested Extra Reading:

1. Webby, Elizabeth. *The Cambridge Companion to Australian Literature*. Ed. Cambridge: UP, 2000. Print.
2. Sabbioni, Jennifer, Kay Schaffer and Sidonie Smith. Eds. *Indigenous Australian Voices: A Reader*. New Brunswick: Rutgers UP, 1998. Print.
3. Casey, Maryrose. *Creating Contemporary Frames: Indigenous Theatre (1967-1990)*. Queensland: UP, 2004. Print.
4. Shoemaker, Adam. *Black Words, White Page*. Brisbane: Queensland University Press, 1989. Print.



## Modern Literary Theory

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 511

**Course Name:** Modern Literary Theory

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to:

- make students understand nature and definition of literary criticism and theory through select critical writings
- to particularly understand the 'modern' shift in language, text and author in meaning making process

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Library Work Assignment: 5%
  - Subjective Assignment: 10%
  - Group Discussion: 5%
  - Presentations: 5%

**Course Content:**

**UNIT – I: Introduction (4 Hours)**

- From Liberal Humanism to Formalism

**UNIT – II: Criticism and Theory after the World War II (7 Hours)**

- Ferdinand de Saussure : ‘Nature of Linguistic Sign’
- Roland Barthes: ‘Work to Text’

**UNIT – III: Poststructuralism and Marxism (7 Hours)**

- Jacques Derrida: ‘Structure, Sign and Play in the Discourse of the Human Sciences’
- Terry Eagleton: ‘What is Literature?’

**Unit – IV: Postmodernism and Modern Feminism (7 Hours)**

- Jean-Francois Lyotard: ‘Defining the Postmodern’
- Lisa Lowe : ‘Work, Immigration, Gender: New Subjects of Cultural Politics’

**Unit – V: Postcolonial Criticism (7Hours)**

- Ashcroft, Bill et al: Introduction to *The Empire Writes Back*
- Chinua Achebe: ‘An Image of Africa: Racism in Conrad’s *Heart of Darkness*’
- Edward Said: ‘Introduction’ to *Orientalism*

**Unit – V: Cultural Studies (8 Hours)**

- J. Hillis Miller: ‘Cultural Studies and Reading’
- Raymond Williams: ‘Literature’

**Prescribed Text Books:**

1. Barry, Peter. (2002). *Beginning Theory*. Manchester: Manchester UP.
2. Habib, M. A. R. (2008). *A History of Literary Criticism and Theory: A History*. Blackwell Publishing, Delhi.
3. Leitch, Vincent B, et al, eds. (2010). *The Norton Anthology of Theory and Criticism*. New York: W. W. Norton. 845-867; 1895-1910.
4. Lodge, David (1988). *Modern Criticism and Theory: A Reader*. Longman: New Delhi.
5. Ashcroft, Bill et al, eds. (2003). *The Empire Writes Back*. London: Routledge, 2002. 1-11.
6. Eagleton, Terry (1996). *Literary Theory: An Introduction*. 2nd ed. Minneapolis: U of Minnesota.

## Research Methodology

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 601

**Course Name:** Research Methodology

**Credits Equivalent:** 04 credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objective:

Training the RD Students in

- Understanding Research Methodology, Meaning of Research and Its Process in Literary Studies
- Developing a Research Problem, Style Sheet
- Reviewing of Primary and Secondary Literature, Reading Diverse Texts
- Studying Critical Approaches to Literature Alongside their Praxis

#### Attendance Requirement:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - iv Assignments: 10%
  - v Class participation: 10%
  - vi Presentations: 5%

**Course Contents:**

**UNIT- 1 Introduction: Fundamentals of Research Methodology (7 Hours)**

- Research: Meaning, Nature, Objectives, Relevance
- Research Methods/Types of Research: Basic Research, Applied Research, Quantitative Research, Qualitative Research, Descriptive Research, Fundamental Research, Analytical Research, Conceptual Research, Empirical Research, Historical Research, Literary Research

**UNIT-2 The Research Process (7 Hours)**

- Selection of Genre: Poetry, Fiction, Short Fiction, Drama, Prose, Biographical and Autobiographical Writings, Travelogues
- Collection of Primary Source Material
- Reading: Method of Reading, Preparing Notes, Analysis to form a Broad Idea of Research Proposal
- Review of Secondary Source Material
- Preparing a Working Bibliography
- Formulating the Research Problem/ Topic and Delimiting It
- Critical Survey of the Work Concerning the Topic of Research/ Viability of Research Topic
- Writing the Research Proposal (Synopsis)

**UNIT-3 Research Ethics, Mechanics of Writing, and Documentation (7 Hours)**

- Plagiarism, Unintentional Plagiarism, Forms of Plagiarism, Responsibility, Confidentiality, Codes of Ethics, Permissions to Research, Integrity and Scholarship, Importance of Documentation
- Spelling, Punctuation, Italics, Names of Persons, Number, Titles of Works in Research Papers, Quotations, Capitalization and Personal Names, Abbreviations
- Format of the Research Paper: Margins, Text Formatting, Heading and Title, page numbers, Paper and Printing, Corrections and Insertions, Binding, Electronic Submission
- Preparing the List of Works Cited as per MLA Stylesheet

**UNIT-4 Modes of Literary Interpretation/Critical Approaches to Study Literature-I (9 Hours)**

- Pre-critical Response
- Textual Scholarship and Source Study
- Historical and Biographical Approaches
- Moral and Philosophical Approaches
- Formalist Approach

**UNIT-5 Modes of Literary Interpretation/Critical Approaches to Study Literature-II (10 Hours)**

- Psychological Approach
- Mythological and Archetypal Approaches
- Reader-Response Criticism
- Critical Approach in Praxis: Paper Presentation

**Prescribed Text Books:**

1. *MLA Handbook for Writers of Research Papers (2009)*. East-West Press, New Delhi. Print.
2. Guerin, Wilfred L. *A Handbook of Critical Approaches to Literature*. New Delhi: OUP, 2005. Print.
3. Guthrie, Gerard. *Basic Research Methods*. New Delhi, SAGE, 2010. Print.

**Suggested Readings:**

1. David Daiches. *Critical Approaches to Literature*. Hyderabad: Orient Longman Limited, 1967.
2. Kothari, C.R. *Research Methodology: Methods and Techniques*. New Delhi: New Age International PVT Limited Publishers, 2004. Print.
3. Creswell, John W. *Research Design*. New Delhi, SAGE, 2011. Print.
4. Gupta K. Shashi and Praneeti Rangi. *Research Methodology*. Mumbai: Himalaya Publishing House, 2009. Print.

## Modern and Contemporary Theory

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 603

**Course Name:** Modern and Contemporary Theory

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- undertake an in-depth study of modern and contemporary theories, their application in literary studies
- interrogate language, text, author and ideological formations
- equip students with essential tools of literary research and also to introduce them to the major concerns of contemporary literary theory alongside basic postulates of different theoretical positions regarding literary and cultural studies

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i Subjective Assignment: 5 %
  - ii Seminar: 5%
  - iii Library Work: 5 %
  - iv Presentations and Class Tests: 5 %
  - v Attendance: 5 %

**Course Content:**

**Unit I: Structuralism and Post-structuralism (10 Lectures)**  
Introduction  
Ferdinand de Saussure: 'Nature of the Linguistic Sign'  
Roland Barthes: 'Work to Text'  
Jacques Derrida: 'Structure, Sign and Play in the Discourse of Human Sciences'

**Unit II: Feminist Theory (10 Lectures)**

Introduction  
Monique Wittig: 'One is Not Born a Woman'  
Judith Butler: 'Gender Trouble'

**Unit III: Modernism and Postmodernism (10 Lectures)**

Introduction  
Jean Francois-Lyotard: 'Defining the Postmodern'  
Jean Baudrillard: 'The Precession of Simulacra'

**Unit IV: Cultural Studies (10 Lectures)**

Introduction  
Jurgen Habermas: 'The Public Sphere: An Encyclopedia Article'  
Terry Eagleton: 'What is Literature?'

**Unit V: Postcolonial Theory (10 Lectures)**

Introduction  
Ngugi wa Thiong'o: 'Quest for Relevance'  
Michael Hardt and Antonio Negri: 'Empire'

**Prescribed Text Books:**

1. Leitch, Vincent B, et al, eds. (2010). *The Norton Anthology of Theory and Criticism*. New York: W. W. Norton. 845-867; 1895-1910.
2. Eagleton, Terry (1983). *Literary Theory: An Introduction*. Blackwell, Oxford.
3. Thiong'o, Ngugi wa (1986). *Decolonizing the Mind: The Politics of Language in African Literature*. London: Oxford. 87-109.
4. Lodge, David (1988). *Modern Criticism and Theory: A Reader*. Longman: New Delhi

**Suggested Extra Readings:**

5. Ashcroft, Bill, et al (2002). *The Empire Writes Back: Theory and Practice in Post-Colonial Literatures*. Routledge, London.
6. Barry, Peter (1999). *Beginning Theory: An Introduction to Literary and Cultural Theory*. Manchester University Press, Manchester and New York.

## Victorianism

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** EEL 502

**Course Name:** Victorianism

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to:

- Make students understand the characteristic features of Victorianism
- Show the extent of Victorianism
- And enable them to think and work on research topics from Victorian Literature

### Attendance Requirements:

Students are expected to attend all lectures to fully benefit from the course.

A minimum of 75% attendance is a must; failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Quiz exams – based on texts: 10%
  - 1000 word Term Paper to be submitted before May 1<sup>st</sup> : 10%
  - Presentations: 5%

### Course Content:

#### UNIT – I: Defining Victorianism

(8 Hours)

##### Texts:

Charles Dickens – “Chapter XXXVII” from *A Child’s History of England* [Essay]

G.K. Chesterton – “The Victorian Compromise and its Enemies” from *The Victorian Age in Literature* [Essay]

George Landow – “Victorian and Victorianism” [Essay]

Gerard Manley Hopkins – “The Caged Skylark” [Poem]

William Ernest Henley – “Invictus” [Poem]

John Ruskin – “Modern Education” from *Stones of Venice* [Essay]

William Thackeray – “Prefatory Remarks” from *The Book of Snobs* [Essay]



**UNIT – II: Victorian Era: An Age of Contradictions****(8 Hours)****Texts:**

Robert Browning – “My Last Duchess” [Poem]  
Matthew Arnold – “The Study of Poetry” [Essay]  
Matthew Arnold – “Dover Beach” [Poem]  
Walter Pater – “Preface” from *The Renaissance* [Essay]  
D.G.Rossetti – “The Blessed Damozel” [Poem]  
Charlotte Bronte – *Jane Eyre* [Novel]  
George Eliot – “Silly novels by Lady Novelists” [Essay]

**UNIT – III: The Victorian Compromise****(8 Hours)****Texts:**

Wilkie Collins – *The Woman in White* [Novel]  
Thomas Hardy – “The Withered Arm” [Short Story]  
Oscar Wilde – *The Importance of Being Earnest* [Play]  
Alfred Lord Tennyson – “Ulysses” [Poem]  
Jerome K. Jerome – “Uncle Podger Hangs a Picture” from *Three Men in a Boat* [Short Story]

**UNIT – IV: The Other Victorians****(8 Hours)****Texts:**

Thomas Carlyle – “Occasional Discourse on the Negro Question” [Essay]  
John Stuart Mill – “The Negro Question” [Essay]  
Rudyard Kipling – *Kim* [Novel]  
S.C.Dutt – “India” [Poem]  
Henry Lawson – “A Neglected History” [Essay]

**UNIT – V: Victorianism Now****(8 Hours)****Texts:**

Christopher Clausen – “Victorian Literature: Can These Bones Live?” [Essay]  
John Sutherland – “How old is Kim?” [Essay]  
Anne Humpherys -- “The Afterlife of the Victorian Novel: Novels about Novels” [Essay]  
Jean Rhys -- *Wide Sargasso Sea* [Novel – Prequel to Charlotte Bronte’s *Jane Eyre*]  
Joss Marsh and Kamilla Elliott -- “The Victorian Novel in Film and on Television” [Essay]  
Raj Khosla – *Naqab* [Film – Indian movie adaptation of Wilkie Collins’ *The Woman in White*]  
Philip Davis – “The Victorian Bump and Where to Find it” [Essay]

**Prescribed Text Books:**

1. Dickens, Charles. *A Child’s History of England*. 1854. London: Chapman and Hall, 1880. Print.
2. Chesterton, G.K. *The Victorian Age in Literature*. New York: Henry Holt, 1913. Print.
3. Landow, George. “Victorian and Victorianism”. *Victorianweb*. N.p. 2 August 2009. Web. 2 December 2013.
4. Hopkins, Gerard Manley. *Poems of Gerard Manley Hopkins*. London: Humphrey Milford, 1918. Print.
5. Untermeyer, Louis, Ed. *Modern British Poetry*. New York: Harcourt, Brace and Howe, 1920. Print.
6. Ruskin, John. “Modern Education”. *Stones of Venice Volume III*. Gutenberg. Web. 28 June 2013.
7. Thackeray, William Makepeace. *The Book of Snobs*. Rockville: Arc Manor, 2009. Print.
8. Browning, Robert. “My Last Duchess”. *Poetsorg*. N.p. 3 October 1994. Web. 19 December 2013.
9. Arnold, Matthew. “The Study of Poetry”. *poetryfoundation*. N.P. 13 October 2009. Web. 23 December 2013.

10. Culler, Dwight, ed. *Poetry and Criticism of Matthew Arnold*. Boston: Houghton Mifflin, 1961. Print.
10. Pater, Walter. *The Renaissance*. Gutenberg. Web. 28 June 2013.
11. Rossetti, D.G. "The Blessed Damozel". The Victorian Web. Web. 28 June 2013.
12. Bronte, Charlotte. *Jane Eyre*. 1847. London: Penguin, 1994. Print.
13. Eliot, George. "Silly Novels by Lady Novelists." *Readbooksonline*. N.p. N.d. Web. 15 December 2013.
14. Collins, Wilkie. *The Woman in White*. Hertfordshire: Wordsworth, 1993. Print.
15. Hardy, Thomas. *The Withered Arm and Other Stories 1874-1888*. London: Penguin, 2006. Print.
16. Wilde, Oscar. *The Importance of Being Earnest*. Gutenberg. Web. 28 June 2013.
17. Eliot, Charles William. Ed. *English Poetry III: from Tennyson to Whitman*. Vol. XLII. The Harvard Classics. New York: P.F. Collier & Son, 1909–14. Print.
18. Jerome, Jerome K. *Three Men in a Boat*. Hertfordshire: Wordsworth Classics, 1993. Print.
19. Carlyle, Thomas. "Occasional Discourse on the Negro Question". 1849, *Fraser's Magazine for Town and Country*. February 1849. Print.
20. Mill, John Stuart. *On Liberty*. London: Longman, Roberts & Green, 1869. Print.
21. Kipling, Rudyard. *Kim*. 1901. Zohreh T. Sullivan, ed. New York: W. W. Norton & Company, 2002. Print.
22. Gokak, Vinayak Krishna. Ed. *The Golden Treasury of Indo-Anglican Poetry 1828-1965*. New Delhi: Sahitya Academi, 1970. Print.
23. Lawson, Henry. "A Neglected History". *Telib*. N.p. N.d. Web. 2 December 2013.
24. Clausen, Christopher. "Can These Bones Live?". *The Sewanee Review*. 96 (2000): 2, 220-235. Print.
25. Sutherland, John. *Is Heathcliff a Murderer: Puzzles in 19<sup>th</sup>-Century Fiction*. Oxford: Oxford University Press, 1996. Print.
26. Humphreys, Anne. "The Afterlife of the Victorian Novel: Novels about Novels". *A Companion to the Victorian Novel*. Ed. Brantlinger, Patrick & William B. Thesing. Oxford: Blackwell Publishing, 2002. Print.
27. Rhys, Jean. *Wide Sargasso Sea*. 1996. New York: W.W. Norton and Company, 1992. Print.
28. Marsh, Joss & Kamilla Elliott. "The Victorian Novel in Film and on Television". *A Companion to the Victorian Novel*. Ed. Brantlinger, Patrick & William B. Thesing. Oxford: Blackwell Publishing, 2002. Print.
29. *Naqab*. Dir. Raj Khosla. Perf. Rishi Kapoor, Farha Naaz, Rakesh Bedi. 1989. Raj Khosla Films, 2003. VCD.
30. Davis, Philip. "Introduction: The Victorian Bump and Where to Find It". *Why Victorian Literature Still Matters*. Chichester: Wiley-Blackwell, 2008. Print.

#### **Suggested reading:**

1. Ashley, Leonard R.N. ed. *Nineteenth-Century British Drama*. NY: Scott, Foresman, 1967. Print.
2. Avery, Gillian. *Victorian People in Life and Literature*. London: Collins; New York: Holt, Rinehart, and Winston, 1970. Print.
3. Durant, Will. "Comte and Darwin". *The Story of Philosophy*. New York: Garden City, 1926. Print.
4. Ford, James L., Mary K. Ford. ed. *Every Day in the Year: A Poetical Epitome of the World's History*. New York: Dodd, Mead & Co., 1902. Print.
6. Himmelfarb, Gertrude. *The Idea of Poverty: England in the Early Industrial Age*. New York: Knopf, 1984. Print.
7. McLeod, Hugh. *Religion and the People of Western Europe: 1789-1970*. Oxford: OUP, 1981. Print.
8. Newman, Cardinal. *The Idea of a University*. Washington: Regnery, 1997. Print.
9. Stedman, Edmund Clarence, ed. *A Victorian Anthology, 1837–1895*. Cambridge: Riverside Press, 1895. Print.

## World Literature

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Name:** World Literature

**Course Code:** EEL 407

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The course is designed to:

Make students understand the meaning and significance of World Literature

To introduce them to writings in various genres by writers from around the world

#### Attendance Requirements:

Students are expected to attend all lectures to fully benefit from the course.

A minimum of 75% attendance is a must; failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Response Papers – based on texts: 10%
  - 1500 word Term Paper to be submitted before May 1<sup>st</sup> : 10%
  - Presentations: 5%

#### Course Content:

##### UNIT – I: World Literature: Meaning & Significance

**(4 Hours)**

###### Texts:

Joseph Remenyi – “The Meaning of World Literature” [Essay]

David Damrosch – “Introduction” from *How to read World Literature?* [Essay]

Franco Moretti – “Conjectures on World Literature” [Essay]

B Frank Sedwick – “The Literary Movements Defined” [Essay]

**UNIT – II: World Literature: Poetry****(4 Hours)****Texts:**

Rainer Maria Rilke – “Fire’s Reflection” [Poem]  
Rainer Maria Rilke – “The Poet” [Poem]  
Octavio Paz – “No More Clichés” [Poem]  
Octavio Paz – “Between Going and Coming” [Poem]  
Charles Baudelaire – “Correspondences” [Poem]  
Charles Baudelaire – “Sorrows of the Moon” [Poem]  
Wole Soyinka – “Abiku” [Poem]  
Wole Soyinka – “Telephone Conversation” [Poem]

**UNIT – III: World Literature: Fiction****(4 Hours)****Texts:**

Guy de Maupassant – “Ball of Fat” [Short Story]  
Albert Camus – *The Stranger* [Novel]  
Gabriel Garcia Marquez – *No One Writes to the Colonel* [Novel]  
Mo Yan – “Bull” [Short Story]

**UNIT – IV: World Literature: Drama****(4 Hours)****Texts:**

Henrik Ibsen – *Doll’s House* [Play]  
Anton Chekhov – *Cherry Orchard* [Play]

**Unit – V: World Literature: Conclusion****(4 Hours)****Texts:**

Linda Milanese Kerschner – “Teaching World Literature: Preparing Global Citizens” [Essay]  
James D. Reese – “Learning for Understanding: The Role of World Literature” [Essay]  
William Atkinson – “The Perils of World Literature” [Essay]  
Robert J. Clements – “World Literature Tomorrow” [Essay]

**Prescribed Texts:**

Atkinson, William. “The Perils of World Literature.” *World Literature*. 80:5. (Sep-Oct 2006) 43-47. Print.

Baudelaire, Charles. “Correspondences”. *doctorhugo*. n.P. N.D. Web. 13 December 2013.

Baudelaire, Charles. “Sorrows of the Moon”. *Poemhunter*. N.P. 3 January 2003. Web. 27 December 2013.

Camus, Albert. *The Stranger*. New York: Vintage Books, 1942. Print.

Clements, Robert J. “World Literature Tomorrow.” *World Literature Tomorrow*. 51:2. (Spring 1977) 181-186. Print.

Damrosch, David. "Introduction" from *How to read World Literature*. New Jersey: Wiley-Blackwell, 2008. Print.

Kerschner, Linda Milanese. "Teaching World Literature: Preparing Global Citizens." 91:5, *The World of Literature*, (May 2002) 76-81. Print.

Marquez, Gabriel Garcia. *No One Writes to the Colonel and other stories*. New York: Harper Perennial, 2005. Print.

Maupassant, Guy de. "Ball-of-Fat." *The Works of Guy de Maupassant: Short Stories*. London: M Walter Dunne, 1903. Print.

Moretti, Franco. "Conjectures on World Literature." *New Left Review* 1 (January-February 2000): 54-68, Print.

Paz, Octavio. "Between Going and Coming". *Poemhunter*. n.P. 3 November 2011. Web. 22 December 2013.

Paz, Octavio. "No More Clichés". *Poemhunter*. n.P. 3 April 2004. Web. December 2013.

Reese, James D. "Learning for Understanding: The Role of World Literature." *The English Journal*. 91:5, *The World of Literature*, (May 2002) 63-69. Print.

Remenyi, Joseph. "The Meaning of World Literature". *The Journal of Aesthetics and Art Criticism*, 9.3 (Mar 1951), 244-251. Print.

Rilke, Rainer Maria. "Fire's Reflection". *Poemhunter*. n.P. 13 January 2013. Web. 20 December 2013.

Rilke, Rainer Maria. "The Poet". *Poemhunter*. n.P. 3 January 2003. Web. 20 December 2013.

Sedwick, Frank, B. "The Literary Movements Defined". *Hispania*. 37:4 (Dec 1954) 466- 471. Print.

Soyinka, Wole. "Abiku." *Allpoetry*. N.P. N.D. Web. 30 December 2013.

Soyinka, Wole. "Abiku." *ctdams*. N.P. N.D. Web. 31 December 2013.

Yan, Mo. "Bull." *New Yorker*. N.P. November 26, 2012. Web. 13 January 2014. Print.

### **Suggested Reading:**

Beckett, Samuel. *Dante and the Lobster. Geocities*. N.P. N.D. Web. 23 December 2013.

Borges, Jorge Luis. *Ficciones*. New York: Grove Press, 1994. Print.

Brecht, Bertolt. *The Caucasian Chalk Circle*. Oxford: Heinemann Publishers, 1960.

Brecht, Bertolt. "The Modern Theatre Is the Epic Theatre: Notes to the Opera *Aufstieg und Fall der Stadt Mahagonny*". *Brecht on Theatre: The Development of an Aesthetic*. Ed. and trans. John Willett. London: Methuen, 1964. Print.

Dostoevsky, Fyodor. "Notes from the Underground." *Gutenberg*. N.P. N.D. Web. 14 December 2013.

Kafka, Franz. *The Metamorphosis and Other Stories*. New York: Barnes & Noble, 1996. Print.

Sophocles. "Oedipus the King". *Internet Classics Archive*. N.P. N.D. Web. 16 December 2013.

## Department of Hindi & Indian Languages

### School of Humanities & Languages

Name of the Department: **Department of Hindi & Indian Languages**

Name of the Programme of Study: **MA (Hindi)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	HIL401	Khadi boli k purva ka kavya : Neeti kavya ram kavya,Krishna kavya,sufi	4	NA	Chandrakant Singh
2	HIL403	Khadi boli ka kavya : Rashtra aur kavita	2	NA	Chandrakant Singh
3.	HIL409	Upanyaas	4	NA	Dr. Sayema Bano
4.	HIL430	Sahityik siddhant: prachin	2	NA	Dr. Sayema Bano

#### University Wide Courses

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	HIL418	Hindi Sahitya aur Cinema: Hindi ki Kritiyon aur Sahityakaron par film	4	NA	Chandrakant Singh Dr. Sayema Bano
2	HIL451	Hindi Geet,Navgeet aur Ghazal	2	NA	Chandrakant Singh Dr. Sayema Bano

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पाठ्यक्रम कूट-संकेत-- एच. आई. एल. 427 (HIL 427)

पाठ्यक्रम शीर्षक -- तुलनात्मक साहित्य : हिन्दी और विश्व साहित्य

पाठ्यक्रम विषय-वस्तु -

इकाई-1 तुलनात्मक साहित्य का परिचय -1 (2 घंटे)

- क) तुलनात्मक साहित्य : अर्थ एवं स्वरूप
- ख) तुलनात्मक साहित्य : अध्ययन के उपादान एवं प्रविधि

इकाई-2 तुलनात्मक साहित्य का परिचय - 2 (3 घंटे)

- क] तुलनात्मक साहित्य के प्रकार
- ख] तुलनात्मक साहित्य का क्षेत्र
- ग] तुलनात्मक अध्ययन और अनुवाद की भूमिका

इकाई-3 हिन्दी साहित्य (5 घंटे)

- क) हिन्दी साहित्य का स्वरूप और विकास
- ख) कबीर
- ग) प्रेमचंद
- घ) छायावादी काव्य

इकाई-4 विश्व साहित्य (5 घंटे)

- क) विश्व साहित्य की अवधारणा
- ख) रूमी
- ग) तालिस्ताय
- घ) अंग्रेजी का रोमैंटिक काव्य

- क) कबीर और रूमी
- ख) प्रेमचंद और तालिस्ताय
- ग) छायावादी काव्य और रोमैंटिक काव्य

सन्दर्भ ग्रन्थ :

1. साहित्य सिद्धांत ,आस्टिन एवं रेनेवेलक, लोकभारती प्रकाशन,इलाहाबाद
2. तुलनात्मक अध्ययन: स्वरूप और समस्याएं, राजूरकर तथा राजमल बोरा (संपादक)
3. तुलनात्मक साहित्य, डॉ नगेन्द्र
4. तुलनात्मक साहित्य की भूमिका, इंद्रनाथ चौधरी
5. कबीर ग्रंथावली, श्यामसुन्दर दास (सम्पादन), लोकभारती प्रकाशन ,211001-इलाहाबाद,
6. विचार का अनंत, डॉ. पुरुषोत्तम अग्रवाल, राजकमल प्रकाशन, दिल्ली-110002
7. मानसरोवर ,प्रेमचंद,राजकमल प्रकाशन,दिल्ली-110002
8. प्रेमचंद और उनका युग, डॉ. रामविलास शर्मा,राजकमल प्रकाशन,दिल्ली-110002
9. *The Greatest short stories of Leo Tolstoy, Mumbai : Jaico Publishing House*  
2009,print
10. छायावाद , डॉ.नामवर सिंह,राजकमल प्रकाशन,दिल्ली-110002
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खड़ी बोली का काव्य : राष्ट्र और कविता (HIL 403 )

श्रेय तुल्यमान: 2 श्रेय

व्याख्यान ,संगठित कक्षा गतिविधि और व्यक्तिगत संपर्क के 10 घंटे ;प्रयोगशाला या / व्यावहारिक कार्य,ट्यूटोरियल,शिक्षक नियंत्रित गतिविधियों/ कार्य के 5 घंटे;और अन्य कार्य जैसे स्वतन्त्र व्यक्तिपरक कार्य, सामूहिक कार्य,निर्धारित अनिवार्य/ वैकल्पिक कार्य,साहित्य समीक्षा,पुस्तकालय कार्य,तथ्य संग्रह,शोधपत्र लेखन,सेमिनार,प्रबंध लेखन,इत्यादि के 15 घंटे के समान है ।

**पाठ्यक्रम का उद्देश्य:** एम.ए स्तर के विद्यार्थियों को हिन्दी नवजागरण की जातीय चेतना से परिचित कराते हुए राष्ट्रियतावादी काव्यधारा से जोड़ना है । यही नहीं हिन्दी की जो साहित्यिक समझ बनी, उसे बनाने एवं गढ़ने में राष्ट्रीय कवियों की क्या देन रही उसे रेखांकित करना भी इस पाठ्यक्रम का उद्देश्य है । प्रायः काव्य-बोध के मिजाज की चर्चा करते हुए 'राष्ट्र और कविता' की मूल वैचारिकी को विस्मृत कर दिया जाता है । इस पाठ्यक्रम की सहायता से 'राष्ट्रीयतावादी कविताओं की मूल चिन्ता एवं साहित्यिक सरोकारों पर भी चर्चा की जाएगी,जिससे कि एम.ए (हिन्दी ) का विद्यार्थी हिन्दी के विकासमान इतिहास को उसके सही परिप्रेक्ष्य में समझ सके ।

**उपस्थिति अनिवार्यता:** पूर्ण एवं सुनिश्चित लाभ हेतु विद्यार्थी का सभी कक्षाओं में भागीदार होना अनिवार्य है । न्यूनतम 75% कक्षाओं में उपस्थिति दर्जा ना होने पर विद्यार्थी को परीक्षा में बैठने से वंचित किया जा सकता है ।

<b>मूल्यांकन मापदंड :</b>	क) मध्यावधि परीक्षा -	25%
	ख ) सत्रांत परीक्षा -	50%
	ग) सतत आंतरिक मूल्यांकन -	25%
	*पुस्तकालय कार्य -	5%
	*प्रायोगिक कार्य -	5 %
	*गृह-कार्य -	5%
	* कक्षा परीक्षा -	5%
	*कक्षा-प्रस्तुतियां	5%

**पाठ्यक्रम विषयवस्तु -**

- इकाई - 1** भारतीय राष्ट्रवाद और भाषा-साहित्य (2 घंटे)  
भारतीय भाषा-साहित्य में राष्ट्रवादी चेतना  
भारतीय राष्ट्रवाद का उद्भव और विकास
- इकाई - 2** खड़ी बोली की राष्ट्रीय कविता का आरंभिक स्वरूप (2 घंटे)  
द्विवेदी युगीन राष्ट्रीय कविता  
भारतेन्दुयुगीन राष्ट्रीय कविता
- इकाई - 3** खड़ी बोली की राष्ट्रीय कविता का विकास (4 घंटे)  
छायावादोत्तर राष्ट्रीय कविता  
छायावादी राष्ट्रीय कविता
- इकाई - 4** खड़ी बोली के प्रमुख राष्ट्रीय कवि और उनकी कविताएँ (6 घंटे)  
गया प्रसाद शुक्ल 'सनेही'  
मैथिलीशरण गुप्त  
माखनलाल चतुर्वेदी  
बालकृष्ण शर्मा 'नवीन'  
सुभद्राकुमारी चौहान  
रामधारी सिंह 'दिनकर'
- इकाई - 5** खड़ी बोली के अन्य कवियों की राष्ट्रीयतावादी कविताएँ (6 घंटे)  
भारतेंदु हरिश्चंद्र  
श्रीधर पाठक  
सत्यनारायण कविरत्न  
रामनरेश त्रिपाठी  
जयशंकर प्रसाद  
सूर्यकांत त्रिपाठी 'निराला'

**आधार ग्रन्थ :**

नंदकिशोर नवल	स्वतंत्रता पुकारती, साहित्य अकादमी, जनवरी 2006
माखनलाल चतुर्वेदी	माखनलाल चतुर्वेदी रचनावली, वाणी प्रकाशन, नई दिल्ली-110002
नरेशचन्द्र चतुर्वेदी (संपादन)	बालकृष्ण शर्मा 'नवीन' काव्य रचनावली, प्रकाशन संस्थान, नई दिल्ली-110002
कृष्णदत्त पालीवाल (संपादन)	मैथिलीशरण गुप्त ग्रन्थावली, वाणी प्रकाशन, नई-दिल्ली, संस्करण 2008

**संदर्भ ग्रन्थ :**

सुधीर रंजन सिंह -हिन्दी समुदाय और राष्ट्रवाद,राजकमल प्रकाशन,नई दिल्ली-110002

डॉ. रामविलास शर्मा -भारतेंदु हरिश्चंद्र और हिन्दी नवजागरण की समस्याएँ,राजकमल प्रकाशन,नई दिल्ली

कृष्णदत्त पालीवाल -मैथिलीशरण गुप्त : प्रासंगिकता के अन्तःसूत्र,वाणी प्रकाशन,नई दिल्ली-110002

प्रेमशंकर -हिन्दी स्वच्छन्दतावादी काव्य,वाणी प्रकाशन,नई-दिल्ली-110002

डा. विश्वनाथ प्रसाद तिवारी (संपादन )-बीसवीं सदी का हिन्दी साहित्य, भारतीय ज्ञानपीठ,दिल्ली

डॉ.शम्भुनाथ -धूप छाँही दिनकर,भारतीय ज्ञानपीठ,नई दिल्ली- 110003

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**हिन्दी साहित्य और सिनेमा : हिन्दी कृतियों और साहित्यकारों पर फ़िल्म 418 (HIL 418) श्रेय- 4**

व्याख्यान,संगठित कक्षा गतिविधि और व्यक्तिगत संपर्क के 10 घंटे; प्रयोगशाला या / व्यावहारिक कार्य, ट्यूटोरियल, शिक्षक नियंत्रित गतिविधियों /कार्य के 5 घंटे; और अन्य कार्य जैसे स्वतन्त्र व्यक्तिपरक कार्य, सामूहिक कार्य, निर्धारित अनिवार्य /वैकल्पिक कार्य, साहित्य समीक्षा, पुस्तकालय कार्य, तथ्य संग्रह, शोधपत्र लेखन, सेमिनार, प्रबंध लेखन, इत्यादि के 15 घंटे के समान है।

**पाठ्यक्रम का उद्देश्य:** 'यूनिवर्सिटी वाईड' पाठ्यक्रम के तौर पर विकसित इस पाठ्यक्रम का उद्देश्य हिंदीतर विद्यार्थियों को साहित्यकारों की कृतियों और उन पर आधारित फिल्मों से रूबरू कराना है। समकालीन समय में सिनेमा के द्वारा भारतीय सामाजिक यथार्थ की जो जीवंत प्रस्तुति हमें देखने को मिलती है उसकी पड़ताल करते हुए उसकी सार्थक भूमिका पर प्रकाश डालना है। साहित्य और सिनेमा दोनों ही सशक्त विधाएं हैं जिनमें व्यक्ति,समाज एवं राष्ट्र समग्रता से रूपायित होते हैं। इस पाठ्यक्रम के द्वारा हिन्दी की समृद्ध कृतियों से विद्यार्थियों को परिचित कराना और उनकी साहित्यिक अभिरुचि को बढ़ाना है।

**उपस्थिति अनिवार्यता:** पूर्ण एवं सुनिश्चित लाभ हेतु विद्यार्थी का सभी कक्षाओं में भागीदार होना अनिवार्य है। न्यूनतम 75% कक्षाओं में उपस्थिति दर्जा ना होने पर विद्यार्थी को परीक्षा में बैठने से वंचित किया जा सकता है।

<b>मूल्यांकन मापदंड :</b>	क) मध्यावधि परीक्षा -	25%
	ख) सत्रांत परीक्षा -	50%
	ग) सतत आंतरिक मूल्यांकन -	25%
	*पुस्तकालय कार्य -	5%
	*प्रायोगिक कार्य -	5%
	*गृह-कार्य -	5%
	* कक्षा परीक्षा -	5%
	*कक्षा-प्रस्तुतियां	5%

**पाठ्यक्रम विषयवस्तु -**

**इकाई-1** हिन्दी साहित्य और सिनेमा : एक परिचय (6 घंटे)

साहित्य : अर्थ, स्वरूप, विशेषताएं

सिनेमा : अर्थ, स्वरूप, विशेषताएं

साहित्य और सिनेमा का अंतर्संबंध

**इकाई-2** हिन्दी सिनेमा का ऐतिहासिक विकास (6 घंटे)

क) हिन्दी सिनेमा की विकास-यात्रा

ख) वर्तमान परिदृश्य और हिन्दी सिनेमा

ग) हिन्दी सिनेमा की समस्याएँ और चुनौतियाँ

**इकाई-3** सामाजिक परिप्रेक्ष्य और हिन्दी सिनेमा (6 घंटे)

अस्मितावादी विमर्श और हिन्दी सिनेमा

सामाजिक समरसता और हिन्दी सिनेमा

हिन्दी सिनेमा का लोकवादी यथार्थ

**इकाई-4** हिन्दी की प्रमुख कृतियों का अध्ययन (6 घंटे)

प्रमुख कहानियाँ : कफ़न,सद्गति,तीसरी कसम,मोहनदास

प्रमुख उपन्यास : गोदान,गबन,तमस,

**इकाई-5** हिन्दी की प्रमुख फिल्मों का अध्ययन (6 घंटे)

हिन्दी कृतियों पर आधारित फिल्में : कफ़न,सद्गति,गोदान,गबन,तीसरी कसम,सारा आकाश,मोहनदास

महत्वपूर्ण फिल्में : मदर इंडिया, मुग़ले-आज़म, स्वदेश, पिंजर, तमस

**आधार ग्रन्थ:**

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6. भीष्म साहनी - तमस, राजकमल प्रकाशन, नई दिल्ली-110002, सातवाँ संस्करण :1992

**सन्दर्भ ग्रन्थ :**

7. देवीशंकर अवस्थी - साहित्य विधाओं की प्रकृति, राधाकृष्ण प्रकाशन, नई दिल्ली-110002, पहला संस्करण : 1993
8. अनुपम ओझा - भारतीय सिने-सिद्धांत, राधाकृष्ण प्रकाशन, नई दिल्ली-110002
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11. ब्रजेश्वर मदान - सिनेमा नया सिनेमा, पुस्तकायन, नई दिल्ली-110002

खड़ी बोली के पूर्व का काव्य: नीति काव्य, राम काव्य, कृष्ण काव्य, सूफ़ी काव्य

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खड़ी बोली के पूर्व का काव्य: नीति काव्य, राम काव्य, कृष्ण काव्य, सूफ़ी काव्य

HIL 401 तुल्यमान: 4 श्रेय

व्याख्यान, संगठित कक्षा गतिविधि और व्यक्तिगत संपर्क के 10 घंटे; प्रयोगशाला या / व्यावहारिक कार्य, ट्यूटोरियल, शिक्षक नियंत्रित गतिविधियों / कार्य के 5 घंटे; और अन्य कार्य जैसे स्वतन्त्र व्यक्तिपरक कार्य, सामूहिक कार्य, निर्धारित अनिवार्य / वैकल्पिक कार्य, साहित्य समीक्षा, पुस्तकालय कार्य, तथ्य संग्रह, शोधपत्र लेखन, सेमिनार, प्रबंध लेखन, इत्यादि के 15 घंटे के समान हैं।

**पाठ्यक्रम का उद्देश्य:** पाठ्यक्रम का उद्देश्य विद्यार्थियों को (एम.ए. हिन्दी ) भक्तिकाव्य की स्वर्णिम परम्परा से परिचित करना है। भक्तिकाव्य ने न केवल सामाजिक एका स्थापित किया बल्कि साहित्यिक भागीदारी भी प्रस्तुत की। सामाजिक समरसता स्थापित करने एवं लोक को प्रश्रय देने के लिए भी यह काव्य जाना जाता है। प्रस्तुत पाठ्यक्रम की सहायता से विद्यार्थियों की भाव-संवेदना को भक्ति-काव्य से जोड़कर उनके भीतर अतीत की संतुलित समझ का विकास करना है, जिससे कि वे जागरूक अध्येता बन सकें।

**उपस्थिति अनिवार्यता:** पूर्ण एवं सुनिश्चित लाभ हेतु विद्यार्थी का सभी कक्षाओं में भागीदार होना अनिवार्य है। न्यूनतम 75% कक्षाओं में उपस्थिति दर्जा ना होने पर विद्यार्थी को परीक्षा में बैठने से वंचित किया जा सकता है।

<b>मूल्यांकन मापदंड :</b>	क) मध्यावधि परीक्षा -	25%
	ख ) सत्रांत परीक्षा -	50%
	ग) सतत आंतरिक मूल्यांकन -	25%
	*पुस्तकालय कार्य -	5%
	*प्रायोगिक कार्य -	5%
	*गृह-कार्य -	5%
	* कक्षा परीक्षा -	5%
	*कक्षा-प्रस्तुतियां	5%

**पाठ्यक्रम विषयवस्तु -**

- इकाई -1** खड़ी बोली के पूर्व काव्य की रूपरेखा (8 घंटे)  
भक्ति: स्वरूप एवं अवधारणा  
भक्ति आन्दोलन का उद्भव एवं विकास  
विभिन्न सम्प्रदाय एवं भक्ति की अवधारणा
- इकाई -2** खड़ी बोली के पूर्व का नीतिकाव्य (8 घंटे)  
क) नीतिकाव्य की सामाजिक, सांस्कृतिक पृष्ठभूमि  
ख) नीतिकाव्य के प्रमुख कवि और उनकी रचनाएं
- इकाई -3** खड़ी बोली के पूर्व का सूफ़ीकाव्य (8 घंटे)  
सूफ़ीकाव्य की सामाजिक, सांस्कृतिक पृष्ठभूमि  
सूफ़ीकाव्य के प्रमुख कवि और उनकी रचनाएं
- इकाई -4** खड़ी बोली के पूर्व का रामकाव्य (8 घंटे)  
रामकाव्य की सामाजिक, सांस्कृतिक पृष्ठभूमि  
रामकाव्य के प्रमुख कवि और उनकी रचनाएं
- इकाई -5** खड़ी बोली के पूर्व का कृष्ण काव्य (8 घंटे)  
कृष्णकाव्य की सामाजिक, सांस्कृतिक पृष्ठभूमि  
कृष्णकाव्य के प्रमुख कवि और उनकी रचनाएं



**आधार ग्रन्थ :**

- श्यामसुन्दर दास ( सम्पादन) - 'कबीर ग्रन्थावली', लोकभारती प्रकाशन, इलाहाबाद-211001, द्वितीय संस्करण: 2011  
डा. बलदेव वंशी (संपादन) - 'दादू ग्रन्थावली', प्रकाशन संस्थान, नई दिल्ली-110002, संस्करण: 2010  
आचार्य रामचन्द्र शुक्ल - 'जायसी ग्रन्थावली', लोकभारती प्रकाशन, इलाहाबाद, प्रथम संस्करण: 2012  
सुधाकर पाण्डेय (संपादन) - 'कवितावली', लोकभारती प्रकाशन, इलाहाबाद-1, संस्करण: 2009  
डॉ. हरदेव बाहरी एवं डॉ. राजेन्द्र कुमार (संपादन) - 'सूर सागर' सटीक, लोकभारती प्रकाशन, इलाहाबाद

**संदर्भ ग्रन्थ :**

- देवीशंकर अवस्थी - भक्ति का सन्दर्भ, वाणी प्रकाशन, नई दिल्ली-110002 द्वितीय संस्करण: 2005  
प्रेमशंकर - 'भक्तिकाव्य का समाज-दर्शन', वाणी प्रकाशन, नई दिल्ली-110002  
आचार्य हजारी प्रसाद द्विवेदी - 'कबीर', राजकमल प्रकाशन, नई दिल्ली  
आचार्य रामचंद्र शुक्ल - 'गोस्वामी तुलसीदास, वाणी प्रकाशन, नई दिल्ली-110002 द्वितीय संस्करण: 2011  
आचार्य हजारी प्रसाद द्विवेदी - 'सूर साहित्य', राजकमल प्रकाशन, नई-दिल्ली, तीसरा संस्करण: 1989  
डॉ. नरेश - 'सूफीमत और हिन्दी सूफी-काव्य', वाणी प्रकाशन, नई दिल्ली-110002, पहला संस्करण: 2007

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पाठ्यक्रम कूट-संकेत : एच.आई.एल. 430 [ HIL 430 ]

पाठ्यक्रम शीर्षक : साहित्य सिद्धांत : प्राचीन

**क्रेडिट : 2** [एक क्रेडिट व्याख्यान , संगठित कक्षा गतिविधि और व्यक्तिगत सम्पर्क के 10 घंटे के बराबर, प्रयोगशाला / व्यावहारिक कार्य / ट्यूटोरियल / शिक्षक नियंत्रित गतिविधियाँ के 5 घंटे और अन्य कार्य जैसे स्वतन्त्र व्यक्तिपरक कार्य, सामूहिक कार्य, निर्धारित अनिवार्य / वैकल्पिक कार्य, साहित्य समीक्षा, पुस्तकालय कार्य, तथ्य संग्रह, शोध-पत्र लेखन, सेमीनार, प्रबंध लेखन इत्यादि के 15 घंटे के सामान हैं ]

**पाठ्यक्रम उद्देश्य :** पाठ्यक्रम का उद्देश्य साहित्य - सिद्धांत की प्राचीन परंपरा से छात्रों को परिचित कराना है ताकि वे संस्कृत साहित्य सिद्धांतों से न केवल परिचित हों बल्कि उसके संग्रहणीय तत्त्वों से लाभान्वित हों तथा साहित्य के मूल्यांकन की विवेकपूर्ण दृष्टि उनमें विकसित हो सके ।

**उपस्थिति अनिवार्यता :** पूर्ण एवं सुनिश्चित लाभ हेतु छात्र का सभी कक्षाओं में उपस्थित होना अनिवार्य है । न्यूनतम 75% कक्षाओं में उपस्थिति दर्ज न होने पर छात्र को परीक्षा में बैठने से वंचित किया जा सकता है ।

**मूल्यांकन मापदंड :**

क.] मिड टर्म परीक्षा -	25%
ख.] एंड टर्म परीक्षा -	50%
ग.] सतत आंतरिक मूल्यांकन -	25%
* पुस्तकालय कार्य -	5%
* गृह कार्य -	5%
* कक्षा परीक्षा -	10%
* कक्षा प्रस्तुतियां -	5%

**पाठ्यक्रम विवरण -**

**इकाई -1** प्राचीन साहित्य सिद्धांत - 1 घंटे -2

साहित्य का अर्थ एवं स्वरूप

भारतीय साहित्य चिंतन परम्परा का ऐतिहासिक विकास

**इकाई - 2** प्राचीन साहित्य सिद्धांत - 2 घंटे- 3

काव्य लक्षण

काव्य हेतु

काव्य प्रयोजन

**इकाई - 3** प्राचीन साहित्य सिद्धांत -3 घंटे- 5

रस का स्वरूप एवं वर्गीकरण

रस निष्पत्ति एवं साधारणीकरण

**इकाई - 4** प्राचीन साहित्य सिद्धांत -4 घंटे -5

ध्वनि का स्वरूप एवं वर्गीकरण

अलंकार का स्वरूप एवं वर्गीकरण

**इकाई -5** प्राचीन साहित्य सिद्धांत -5 घंटे -5

रीति सिद्धांत

वक्रोक्ति सिद्धांत

औचित्य सिद्धांत

**सन्दर्भ ग्रन्थ :**

रस मीमांसा आचार्य राम चन्द्र शुक्ल

संस्कृत आलोचना बलदेव उपाध्याय

काव्यशास्त्र की भूमिका डॉ.नगेन्द्र

काव्यशास्त्र भागीरथ मिश्र

भारतीय काव्य विमर्श राममूर्ति त्रिपाठी

भारतीय काव्यशास्त्र गणेश त्रयम्बक देशपांडे

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(HIL 409)

उपन्यास

श्रेय तुल्यमान: 4 श्रेय

(1 श्रेय व्याख्यान, संगठित कक्षा गतिविधि और व्यक्तिगत संपर्क के 10 घंटे; प्रयोगशाला या / व्यावहारिक कार्य, ट्यूटोरियल, शिक्षक नियंत्रित गतिविधियों /कार्य के 5 घंटे; और अन्य कार्य जैसे स्वतन्त्र व्यक्तिपरक कार्य, सामूहिक कार्य, निर्धारित अनिवार्य / वैकल्पिक कार्य, साहित्य समीक्षा, पुस्तकालय कार्य, तथ्य संग्रह, शोधपत्र लेखन, सेमिनार, प्रबंध लेखन, इत्यादि के 15 घंटे के समान हैं।

**पाठ्यक्रम का उद्देश्य:** पाठ्यक्रम का उद्देश्य छात्रों को हिन्दी साहित्य की विशिष्ट और समृद्ध विधा उपन्यास से परिचित कराना है, तथा उसका सम्पूर्णता से मूल्यांकन विश्लेषण करना है। उपन्यास की ऐतिहासिक परंपरा के साथ छात्र विभिन्न युगों के उपन्यासों की विशेष प्रवृत्तियों का अध्ययन कर सकेंगे, साथ ही कुछ कालजयी उपन्यासों के पाठ-विश्लेषण के माध्यम से साहित्य के अध्ययन की विशिष्ट दृष्टि अर्जित कर सकेंगे।

**उपस्थिति अनिवार्यता:** पूर्ण एवं सुनिश्चित लाभ हेतु विद्यार्थी का सभी कक्षाओं में भागीदार होना अनिवार्य है। न्यूनतम 75% कक्षाओं में उपस्थिति दर्ज ना होने पर विद्यार्थी को परीक्षा में बैठने से वंचित किया जा सकता है।

<b>मूल्यांकन मापदंड :</b>	क) मध्यावधि परीक्षा -	25%
	ख ) सत्रांत परीक्षा -	50%
	ग) सतत आंतरिक मूल्यांकन -	25%
	*पुस्तकालय कार्य -	5%
	*प्रायोगिक कार्य -	5%
	*गृह-कार्य -	5%
	* कक्षा परीक्षा -	5%
	*कक्षा-प्रस्तुतियां	5%

**पाठ्यक्रम विषयवस्तु -**

**इकाई-1** हिन्दी उपन्यास : उद्भव और विकास (5 घंटे)

हिन्दी में उपन्यास का आरम्भ

भारतेन्दुयुगीन प्रमुख उपन्यास और उनकी प्रवृत्तियां

**इकाई-2** प्रेमचन्दयुगीन हिन्दी उपन्यास (7 घंटे)

प्रेमचंदयुगीन प्रमुख उपन्यास और उनकी प्रवृत्तियां

गोदान का पाठ-विश्लेषण

**इकाई-3** प्रेमचंदोत्तर हिन्दी उपन्यास -1 (9 घंटे)

प्रेमचंदोत्तर युग के प्रमुख उपन्यास और उनकी प्रवृत्तियां

शेखर एक जीवनी

बाणभट्ट की आत्मकथा

**इकाई-4** प्रेमचंदोत्तर हिन्दी उपन्यास -2 (9 घंटे)

क] झूठा सच

ख] मैला आंचल

ग] प्रेमचंदोत्तर हिन्दी उपन्यासों की भाषा

**इकाई-5** समकालीन हिन्दी उपन्यास (10 घंटे)

समकालीनता की अवधारणा

रागदरबारी

आधा गाँव

तमस

सूरजमुखी अँधेरे के

**आधार ग्रन्थ -**

- |                       |                       |
|-----------------------|-----------------------|
| 1. गोदान              | प्रेमचंद              |
| 2. शेखर एक जीवनी      | अज्ञेय                |
| 3. बाणभट्ट की आत्मकथा | हजारी प्रसाद द्विवेदी |
| 4. झूठा सच            | यशपाल                 |
| 5. तमस                | भीष्म साहनी           |
| 6. आधा गाँव           | राही मासूम रज़ा       |
| 7. रागदरबारी          | श्रीलाल शुक्ल         |
| 8. सूरजमुखी अँधेरे के | कृष्णा सोबती          |
| 9. मैला आँचल          | फणीश्वर नाथ रेणु      |

**सन्दर्भ ग्रन्थ -**

- |                                      |                |
|--------------------------------------|----------------|
| 10. प्रेमचंद और उनका युग             | रामविलास शर्मा |
| 11. अज्ञेय के उपन्यास                | गोपाल राय      |
| 12. अठारह उपन्यास                    | राजेन्द्र यादव |
| 13. उपन्यास का विकास                 | मधुरेश         |
| 14. उपन्यासकार हजारी प्रसाद द्विवेदी | त्रिभुवन सिंह  |

**School of Journalism Mass Communication & New Media**

## Department of Journalism & Creative Writing

### School of Journalism, Mass Communication & New Media

Name of the Department: **Department of Journalism & Creative Writing**

Name of the Programme of Study: **MA (Journalism & Creative Writing)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1.	JCW 404	News Report Writing	4	NA	Dr. M.Rabindranath
2.	JCW 526	Science and Technology Journalism	2	NA	Dr. Archna Katoch
3.	JCW 510	Legislature Journalism	4	NA	Dr. Archna Katoch
4.	JCW 523	Media and Social Issues	2	NA	Mr. Harsh Mishra
5.	JCW 403	Evolution of Communication and Journalism	4	NA	Mr. Harsh Mishra
6.	JCW 525	Film Studies	2	NA	Mr. Harikrishnan B.
7.	JCW 506	Web Journalism & Designing	4	NA	Mr. Harikrishnan B.
8.	JCW 502	Photojournalism	4	NA	Mr. Harikrishnan B.

#### Courses for Semester 4

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1.	JCW 505	Advertising	4	NA	Dr.M.Rabindranath
2.	JCW 407	Media Management and News Paper Production	4	NA	Dr. Archna Katoch
3.	JCW 408	Media and Gender	2	NA	Dr. Archna Katoch
4.	JCW 513	Business Journalism	4	NA	Mr. Harsh Mishra
5.	JCW 519	Sports Journalism	4	NA	Mr. Harsh Mishra
6.	JCW 515	Art and Culture Journalism	4	NA	Mr. Harikrishnan B.
7.	JCW 405	Computer Applications for Journalism	4	NA	Mr. Harikrishnan B.
8.	JCW 524	Education Journalism	2	NA	Mr. Harikrishnan B.



**University Wide Courses**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Code No of Pre-requisite/ Co-requisites if any</b>	<b>Teacher</b>
1.	JCW 404	News Report Writing	4	NA	Dr.M.Rabindranath
2.	JCW 505	Advertising	4	NA	Mr. Harsh Mishra
3.	JCW 523	Media and Social Issues	2	NA	Mr. Harsh Mishra
4.	JCW 403	Evolution of Communication and Journalism	4	NA	Mr. Harsh Mishra
5.	JCW 513	Business Journalism	4	NA	Mr. Harsh Mishra
6.	JCW 519	Sports Journalism	4	NA	Mr. Harsh Mishra
7.	JCW 528	Science and Environment Journalism	2	NA	Dr. Archna Katoch
8.	JCW 406	Feature and Creative Writing	2	NA	Dr. Archna Katoch
9.	JCW 529	Editorial Writing	2	NA	Dr. Archna Katoch
10.	JCW 407	Media Management and News Paper Production	4	NA	Dr. Archna Katoch
11.	JCW 408	Media and Gender	2	NA	Dr. Archna Katoch
12.	JCW 405	Computer Applications for Journalism	4	NA	Mr. Harikrishnan B.
13.	JCW 506	Web Journalism & Designing	4	NA	Mr. Harikrishnan B.
14.	JCW 515	Art and Culture Journalism	4	NA	Mr. Harikrishnan B.
15.	JCW 502	Photojournalism	4	NA	Mr. Harikrishnan B.
16.	JCW 525	Film Studies	2	NA	Mr. Harikrishnan B.

## Science and Technology Journalism

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**Course Code:** JCW 526

**Course Name:** Science and Technology Journalism

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To impart the basic journalistic skills and techniques and to provide the students hands-on experience in critical areas of science journalism.
- To equip the students with the requisite expertise so that they can popularise Science & Technology and can also communicate effectively through different media with a view to simulate scientific outlook.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 10%
  - Home Assignments: 5%
  - Role Play: 5%

## Course Contents:

### **UNIT-I: Need for Science and Technology Journalism** (4 Hours)

- What is science and technology?
- Science communication, brushing up understanding of science
- The basics of reporting, sourcing of science and technology news
- Institutions of research and development in India, persons who matter in science and technology, Impact of science and technology on social attitudes

### **UNIT - II: Writing Science News Stories** (4 Hours)

- Understand the jargon, words, sentences and readability
- Report structure, human interest
- [Do not overload with figures, write brightly](#), do not sensationalise
- Illustrate your story, the importance of rewriting

### **UNIT - III: Writing of Science Features** (4 Hours)

- Media's role and importance in disseminating of information and public awareness
- Writing features and articles on science and technology
- New research trends in various fields, information communication technology
- Writing and producing science based programs on radio, television and internet

### **UNIT- IV: Environment Protection and Disaster Management** (4 Hours)

- Environmental pollution, causes, effects and control measures, role of media in prevention of pollution
- Role of media in disaster management: floods, earthquakes, cyclones and landslides
- Climate change and global warming
- Emergent need of energy, conventional and non-conventional sources

### **UNIT- V: Science Journalism and Human welfare** (4 Hours)

- Communicating for family welfare
- Human health, smoking and cancer, HIV/AIDS,
- Women and child welfare
- Weather and agriculture

**Text Books:**

1. J. V. Vilanilam,(1992). Science Communication and Development through Media, Sage Publication, New Delhi.
2. N. K. Uberoi, (2010). Environmental Studies, Excel Books, New Delhi.
3. IGNOU, (2008). Specialised Reporting, Communication Division, New Delhi.

**Additional Readings:**

1. P. C Joshi & Namita Joshi (2009). A Text Book of Environmental Science, A. P. H. Pub. New Delhi.
2. Dr B. S. Chauhan, (2008), Environmental Studies, Laxmi Publication, University Science Press, New Delhi.
3. AnubhaKaushik & C. P. Kaushik(2010). Environmental Studies, New Age International.
4. Hindi and English Newspapers and Journals.

## Media and Social Issues

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**COURSE CODE:** JCW 523

**COURSE NAME:** Media and Social Issues

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours writing assignments / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work/ house journals; obligatory/ optional work placement; literature survey/ library work; writing of papers/ presentations/ seminars, etc.)

**Course Objectives:** The Course is designed to:

- Assist the students in understanding the effects of media on the society.
- Acquaint the students with the contemporary issues pertinent to the representations of various sections of the society in the media.
- Explain to the students the manner in which various sections of the society are affected by the media in light of the theories of media effects.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 Marks out of 100
  - Surprise Progress Review Tests (Two) : 10 marks (The tests may be oral or written)
  - Presentation: 5 marks
  - Assignments: 10

**Course Contents:**

**UNIT I: Media Effects**

**(04 hours)**

- Role of Media in a Society.
- Media and Society: Concept of the Media Effects.
- Mass Society and Media Audiences.
- Perspectives on Media Effects: Pro-Social vs. Anti-Social.
- Theories of Media Effects: An Overview.

**UNIT II: Representation Issues in Media**

**(04 hours)**

- Perspectives on Stereotyping.
- Gender Representations in Media.
- Media and Representation of Minorities.
- Media Representations of Differently Abled Persons.

**UNIT III: Media and Cultural Issues**

**(04 hours)**

- Media Culture: Concept and Contemporary Issues.
- Perspectives on Phenomenon of Cultural Imperialism.
- Media and Cultural Integration vs. Cultural Disintegration.
- Media Content in Multi-Ethnic Societies.

**UNIT IV: Media and Human Rights**

**(04 hours)**

- Human Rights: Concept and Contemporary Issues.
- United Nations Declaration on Human Rights.
- Representation of Human Rights Issues in Media.
- Role of Media in Propagation of Human Rights.

**UNIT V: Media and Socio-Economic Development (04 hours)**

- Media and National Integration.
- Media and Education.
- Media and Public Health.
- Media and Rural Development.

**Prescribed Text Books:**

- Kumar, K. J. (2010). *Mass Communication in India*. Mumbai: Jaico Publication.
- Giles, D. (2003). *Media Psychology*. New Jersey: Lawrence Erlbaum Associates, Inc.

**Suggested Additional Reading:**

- Morley, D., & Robins, K. (1995). *Spaces of Identity: Global Media, Electronic Landscapes and Cultural Boundaries*. London: Routledge.
- Cottle, S. (Ed.). (2000). *Ethnic Minorities and the Media: Changing Cultural Boundaries*. Philadelphia: Open University Press.
- Hartley, J. (2002). *Communication, Cultural and Media Studies: The Key Concepts* London: Routledge.

## Web journalism & Designing

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** JCW 506

**Course Name:** Web journalism & Designing

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To offer a broad perspective about the emerging forms of journalism based on the Internet and other digital platforms.
- To enable students to develop the skills needed for functioning as a web journalist.
- To develop basic skills to design webpages and to use it in storytelling.
- To equip students to work as a convergent journalist

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Writing News stories: 10%
  - Home Assignments: 5%



- Designing webpages: 5%

**Course Contents:**

**UNIT - I: Web Journalism: an overview**

**(5 Hours)**

- Introduction to web journalism
- The rise and popularity of web journalism
- Web Journalist Vs. Conventional journalist

**UNIT - II: Writing for web**

**(10 Hours)**

- Basic writing skills
- Writing for interactivity
- Writing for web
- Use of Hyperlinking
- Different story formats
- Writing exercises

**UNIT - III: Multimedia story telling for web**

**(10 Hours)**

- Conventional news narratives Vs Multimedia news narratives
- Basics of multimedia story telling
- Writing for multimedia
- Multimedia production techniques
- Telling audio stories through Soundcloud
- Multimedia stories hands- on sessions

**UNIT- IV: Introduction to web designing**

**(10 Hours)**

- Introduction to web designing
- Information designing
- HTML basics
- WYSIWYG HTML Editors
- Introduction to Dreamweaver
- HTML5 and beyond
- Webpage designing hands on sessions

**UNIT- V: New Trends in Web journalism**

**(5 Hours)**

- Participatory journalism on web
- Citizen journalists
- Social Media as a tool for web journalist
- Live reporting for web journalists

All students should produce news stories and multimedia stories during the course. All students should design at least three webpages during the semester. Attendance for lecture hours and contact hours will be calculated separately. Successful completion of assignments will be the basis of calculating contact hour attendance.

**Prescribed Text Books:**

1. Siapera, E. & Veglis, A. (Eds), (2012), The Handbook of Global Online Journalism, Wiley-Blackwell, West Sussex. ISBN: 978-1-4443-3855-3
2. Nieman Report: Truth in the age of social media (2012), Vol. 66 No. 2, summer 2012, Cambridge, Nieman Foundation at Harvard University.

**Suggested Additional Readings:**

1. Alice Ju, Sun Ho Jeong & Hsiang Iris Chyi (2014) Will Social Media Save Newspapers?, Journalism Practice, 8:1, 1-17, DOI: 10.1080/17512786.2013.794022
2. Seth C. Lewis , Kelly Kaufhold & Dominic L. Lasorsa (2010) Thinking About Citizen Journalism, Journalism Practice, 4:2, 163-179, DOI: 10.1080/14616700903156919

## Photojournalism

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** JCW 502

**Course Name:** Photojournalism

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To prepare students for a professional career as photojournalists and photo-editors in the media organizations.
- To develop an understanding about how visuals play a major role in the communication process and how to create potent visuals.
- Enable them to understand and acquire skills needed for producing and fine tuning visuals for different media platforms like Print media and Web.

### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Photo Story : 10%
  - Home Assignments: 5%
  - Photo Assignments: 5%

**Course Contents:**

**UNIT - I: Basics of Photography (6 Hours)**

- What is photography? – Nature and scope of photography
- Evolution of photography and photo journalism
- photography as an art form
- language of the visual
- Branches of photography

**UNIT - II: Equipment and technology (10 Hours)**

- Functioning of a camera
- Types of cameras and lenses
- Flashes
- Camera controls
- Creative usage of camera controls
- depth of field
- Lighting techniques
- Three-point lighting

**UNIT - III: Techniques of photography (8 Hours)**

- Composing pictures
- Elements of composition
- Basics of photo editing
- introduction to photo editing software
- Photo editing for photojournalists

**UNIT- IV: Basics of Photojournalism (11Hours)**

- Equipment used by photojournalists
- Skills of photojournalism
- Photo-series and photo-essays
- Photojournalism in the convergence era
- Ethics in photojournalism
- Intellectual Property Rights
- Creative Commons

**UNIT- V: Studying VSisuals (5 Hours)**

- Visual culture
- Stereotyping and news photographs
- Methodologies used in visual research
- Qualitative analysis of visuals
- Changing visual culture

**Prescribed Text Books:**

1. Sontag, Susan.(1973), *On Photography*, Rosetta Books, LLC
2. Kobre, Kenneth (2010), *Photojournalism: The professionals' Approach*, Sixth Edition. Focal Press
3. Rose, Gillian (2002), *Visual Methodologies*, Sage: London

**Suggested Additional Readings:**

1. Krause, Jim. *Photo Idea Index*. New York, NY: How, 2009
2. Ang, Tom. *Fundamentals of Photography: The Essential Handbook for Both Digital and Film Cameras*. New York, NY: Knopf, 2008.

## Media Management and Newspaper Production

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code:** JCW 407

**Course Name:** Media Management and Newspaper Production

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The Course is designed to

- Understand the principles and functions of media management.
- Describe the various types of ownership patterns of the press industry and its working.
- Discuss the organisational structures, economics and marketing of media-management.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Writing skills: 5%
  - Home Assignments: 10%
  - Presentation: 5%

**Course contents:**

**UNIT I: Principles and Functions of Management (8 hours)**

- Management : concept and scope
- Principles of management
- Functions of management
- Media as an industry and profession
- Newspaper management
- Changing nature of newspaper management

**UNIT II: Newspaper Ownership and Organisational Structures (8hours)**

- Newspaper ownership
- Various forms of newspaper ownership
- Sole proprietorship
- Partnership
- Company
- Cooperatives
- Trusts and societies
- Newspapers ownership in India

**UNIT III: Organizational Structure of a Newspaper and its Working (8hours)**

- Functions and co-ordinations of different departments of a newspaper: Editorial department
- Advertising department
- Circulation department
- Printing and production department
- Changing role of editorial and other department
- Problems of small and medium newspapers
- Circulation and readership of newspapers in India
- Press Commissions

**UNIT IV: Government Media Organisations (8hours)**

- Organisational structure of All India Radio
- Organisational structure of Doordarshan
- The government's print and related media organisations
- Government -run film medium organisations
- Government publicity organisations
- Government-funded centres for media learning

**UNIT V: Economics and Marketing of Media-management (8hours)**

- Economics and marketing of newspapers

- Pricing and price-wars
- Brand promoting(space/time, circulation)
- Reach
- Promotion
- Market survey techniques
- Foreign equity in Indian media
- Changing media management patterns and news ownership systems in the post globalization era

**Text Books:**

- Kamath, M. V. (1992), Journalist's Handbook, Vikas Publishing House, New Delhi.
- Aggarwal, VirBala and Gupta, V.S. (2001), Handbook of Journalism and Mass Communication, Concept Publishing Company, New Delhi.
- Aggarwal, VirBala (2006), Essentials of Practical Journalism, Concept Publishing Company, New Delhi.

**Additional Readings:**

- Kothari, Gulab (1995). Newspaper Management in India. Intercultural Open University, The Netherlands.
- Kamath, M. V. (2009), professional Journalism, Vikas Publishing House, New Delhi.
- I. A. guide for Newspapers, R. N.I. New Delhi.
- Lingam TNM Circulation Problems in Indian Newspaper PII, New Delhi.
- IGNOU notes.



## Media and Gender

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** Media and Gender

**Course Name:** JCW 408

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Understand gender as a social construct and its application to understand various social phenomena.
- Develop familiarity on the current social problems related to gender and development.
- To impart the basic journalistic skills and techniques to the students in the critical areas of gender inequalities and make them communicate effectively through different media for women empowerment.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%

2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 10%
  - Home Assignments: 5%
  - Role Play: 5%

**Course Contents:**

**UNIT- I: Gender and Communication (4 Hours)**

- What is Gender? Gender Inequality and Sexism
- Patriarchy - Social structure and social institutions, Feminism
- Communication, Relation between gender and media
- Role of Media in a Society. Sourcing and reporting of news.

**UNIT - III: Status of Women in Society (4 Hours)**

- Gender inequalities and its causes in India: education, health conditions
- Violence against women
- Economic opportunities, political participation
- Roles of social movements and media for women rights

**UNIT-III: Important Constitutional and Legal Provisions for Women (4 Hours)**

- Universal declaration of human rights
- Constitutional provisions in India
- Legal provisions in India
- Special initiatives for women, India's sexual assault laws

**UNIT- IV: Gender Representations in the Media**

**(04 hours)**

- Gender equality/ inequality in the news stories, gender stereotypes
- Portrayal of women in the media
- Portrayal of women on television, advertisements
- Print media and women issues

**UNIT- V: Women, Media and Empowerment**

**(04 hours)**

- Women in journalism and media profession
- Gender equality/inequality in media organisations
- Media as a tool in the crusade for women's education
- Media and ICT: Catalyst for the empowerment of women

**Text Books:**

1. Pilcher, J. & Whelehan, I. (2004). 50 key Concepts in Gender Studies, Sage Publication, New Delhi.
2. Basu, A. & Jefferey, P. (2004). Appropriating Gender, Routledge, London.
3. Kataria, Pooja, (2007), Women and Media, Regal Publications, New Delhi.

**Additional Readings:**

1. Mathur, K. (2004). Countering Gender Violence, Sage Publication, New Delhi.
2. IGNOU, (2008). Mass Media and Contemporary Social Issues, Communication Division, New Delhi.
3. Hindi and English Newspapers and Journals.

## Business Journalism

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**COURSE CODE:** JCW 513

**COURSE NAME:** Business Journalism

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of journalistic writing work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work/ house journals; obligatory/ optional work placement; literature survey/ library work; writing of papers/ presentations/ seminars, etc.)

**Course Objectives:** The Course is designed to:

- Enable the students to learn to research and write on economy and business.
- Assist the students in understanding the basic concepts related with business and economy.
- Equip students with the knowledge and skills required to cover economy, businesses, financial markets as well as related socio-economic issues such as poverty, unemployment, sustainable development, and consumer affairs.
- Inculcate explanatory writing skills in the students.
- Enable the students to appreciate the role of Business Journalism in growth and advancement of developing economies.

### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
  2. End Term Examination: 50%
  3. Continuous Internal Assessment: 25% i.e. 25 Marks out of 100
- Surprise Progress Review Tests (Two) : 10 marks (The tests may be oral or written)
  - Presentation: 5 marks
  - Assignments: 10

## **Course Contents:**

### **UNIT I: Business Journalism: An Introduction**

**(08 hours)**

- An introduction to journalism.
- Business Journalism: Concept, Significance and Scope.
- Origin, Growth and Development of Business Journalism.
- Objectives of Business Journalism.
- Key attributes of a Business Journalist.
- Role and Responsibilities of a Business Journalist.
- Business Journalism in Emerging Economies.
- Business Journalism Ethics.

### **UNIT II: Important Business Concepts**

**(12 hours)**

- Economics: Concept and Definitions.
- Market: Meaning and Types.
- National Income: Meaning and Concepts.
- Money, Banking and Inflation.
- Budgeting: Monetary Policy and Fiscal Policy & Deficit Financing.
- Capitalism, Socialism and Mixed Economy.
- Globalization, Liberalization, International Trade and Balance of Payments.
- Economic Planning – Meaning and Types. 12<sup>th</sup> Five Year Plan.
- Public Sector Enterprises vs. Private Sector Enterprises.
- Large, Medium, Small and Micro Sector Enterprises.
- Understanding Company Balance Sheets
- Privatization, FII and FDI.
- Infrastructure and its Relevance.

### **UNIT III: Indian Business Environment**

**(04 hours)**

- Key Industries in India.
- Government Policies & Legislations and their Impact on Businesses.
- Key Industry Associations in India: CII, ASSOCHAM and FICCI.
- Major Challenges faced by the Indian Industries.
- Role of Indian Industries in Growth and Development of the Country.
- Corporate Governance Practices in India: A Critical Appraisal.

#### **UNIT IV: Financial Markets**

**(08 hours)**

- Fundamentals of Stock Markets.
- Indian and International Stock Markets: An Overview
- Initial Public Offerings. (IPO)
- Mergers and Acquisitions.
- Mutual Funds.
- Securities and Exchange Board of India.

#### **UNIT V: Writing Business News Stories**

**(08 hours)**

- Basic Skills Required for Writing Business News Stories.
- Language of Business Journalism.
- Sources for Gathering Business News.
- Reporting the Performance of a Business Entity.
- Covering Financial Markets.
- Major Challenges confronting a Business Journalist.

#### **Prescribed Text Books:**

- Roush, C. 2004. Show me the money. Writing business and economics stories for mass communication. Mahwah, N.J. & London: Lawrence Erlbaum Associates.
- K.K. Dewett, Modern Economic Theory, (Edition 2010), S. Chand & Company Ltd.

#### **Suggested Additional Reading:**

- Stiglitz, J.E. 2006. Making globalization work. London: Allen Lane.
- Vaitilingham, R. 2001. The Financial Times guide to using the financial pages, London: Prentice Hall.
- Jay Taparia, (2004), Understanding Financial Statements: A Journalist's Guide, Marion Street Press, 2004.

## Computer Applications for Journalism

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** JCW 405

**Course Name:** Computer Applications for Journalism

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To enable students to handle different computer applications needed for journalists
- To develop computer and project management skills necessary to be successful in whatever aspect of the journalism industry.
- To enable students to design newsletters, tabloids and web pages with the help of different software applications
- To develop special skills needed for computer assisted reporting

### Attendance Requirement:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Blogging : 10%
  - Home Assignments: 5%
  - Page Makeup : 5%

## **Course Contents:**

### **UNIT- I: Page make up applications (7 Hours)**

- Introduction to page make up applications
- Quark Express, Indesign, Adobe Pagemaker
- Designing a newsletter on a page make up software

### **UNIT - II: Spreadsheet applications for Journalists (9 Hours)**

- Finding news stories from data
- Introduction to Spreadsheet applications
- Analysing data to find out trends and new angles
- Using Microsoft Excel to analyse data
- presenting quantitative data for media audience

### **UNIT - III: Photo editing applications (7 Hours)**

- Basics of photo editing
- Photo editing for the print media
- Introduction to photo editing applications
- Photoshop/Picasa/ Gimp
- Cropping an image
- Adjusting brightness and contrast of an image
- Other photo editing

### **UNIT- IV: Computer Assisted Reporting (7 Hours)**

- What is Computer assisted reporting
- Internet sources for CAR in India
- Using search engines effectively as a journalist
- Locating relevant info on web
- Deep searching using Google or other meta search engines
- Social Media as a news source
- Finding out and keeping in touch with sources on web

### **UNIT- V: Blogging Platforms (10 Hours)**

- Blog as a platform of journalistic expression
- Different blogging platforms
- Starting a blog
- Managing a blog
- Finding readers
- Monitoring the traffic
- Monetizing



Students have to bring out a two page tabloid-size newspaper as a group assignment. Students have to design a magazine cover, start a blog as part of the course activities.

**Prescribed Text Books:**

1. Harrower, Tim (2007). The Newspaper Designers Handbook, Sixth Edition, McGraw-Hill Education
2. Blanter, David. (2007). Real World QuarkXPress 7, Peachpit Press
3. Houston, Brant(2003) Computer Assisted Reporting: A Practical Guide, Bedford/St. Martin's Publishers

**Suggested Additional Readings:**

1. Stefanac, Suzanne (2006). Dispatches from Blogistan: A travel guide for the modern blogger, New Riders

## Advertising

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**COURSE CODE:** JCW505

**COURSE NAME:** Advertising

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 20 hours of teacher-led / independent workload such as Conceptualizing and Designing Individual Advertisements & Advertising Campaigns for different media / Presentations / Writing Papers / Seminars / Conferences / Workshops, etc.)

**Course Objectives:** The Course is designed to:

- Enable the learners to understand the fundamentals of Advertising.
- Familiarize the learners with theoretical and practical aspects of Advertising.
- Enable the students to understand the key ingredients of effective advertising.
- Enable the learners to appreciate diverse views on perception and reception of advertising messages by the audiences.
- Encourage the students to explore the emerging trends in the field of advertising so that they may grasp the intricacies of modern advertising in a better manner.
- Expose the students to the ethical issues pertinent to the trade and practice of Advertising.
- Apprise the learners of the emerging challenges in the field of Advertising.

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to derive maximum benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25% i.e. 25 Marks out of 100

- Surprise Progress Review Tests: **15 marks** (The tests may be oral or written and may be carry different marks)
- Assignments: **10 marks** (May Conceptualizing and Designing Individual Advertisements or Complete Advertising Campaigns for different media, Presentations, Preparation of Written Reports, etc.)

**Course Contents:**

**UNIT I: Introduction to Advertising**

**(08 hours)**

- What is advertising?
- Origin, Evolution and Growth of Advertising
- Advertising: Key Concepts
- The Key Players in the Advertising Arena
- Advertising Agencies – Structure and Functioning

**UNIT II: Types of Advertising**

**(08 hours)**

- Classification of Advertising based on Geographical Spread
- Classification of Advertising based on Target Audiences
- Classification of Advertising based on Media
- Classification of Advertising based on Appeals – Emotional vs. Logical
- Product Advertising – Pioneering, Competitive and Retentive
- Retail Advertising
- Subliminal Advertising
- Direct Response Advertising
- Public Service Advertising

**UNIT III: Roles and Functions of Advertising**

**(08 hours)**

- Role of Advertising in Integrated Marketing Communications
- Role of Advertising in Sales Promotion
- Role of Advertising in Creation and Management of Brands
- Economic Role of Advertising
- Societal Role of Advertising
- Ethical Perspectives on Advertising

#### **UNIT IV: Creativity in Advertising (08 hours)**

- Creativity in the context of Advertising
- Perspectives on Creativity in Advertising
- Creative Strategy
- Aspects of Creative Strategy
- Planning and Managing Creative Strategy
- Psychographics and Creativity in Advertising
- Determinants of Creativity in Advertising

#### **UNIT V: Producing Effective Advertisements (08 hours)**

- Understanding the Audiences
- Gathering Intelligence and Insights through Strategic Research
- Copywriting – The Backbone of Effective Advertising
- Advertising Planning and Budgeting
- Evaluating Effectiveness of Advertisements

#### **Prescribed Text Books:**

- Wells, W. D., Burnett, J., & Moriarty, S. (2012). Advertising: Principles and Practice. India: Pearson.
- Chunawalla, S. A., & Sethia, K. C. (2011). Foundations of Advertising: Theory and Practice. Mumbai: Himalaya Publishing House Pvt. Ltd.
- Vivian, J. (2012). *The Media of Mass Communication*. New Delhi : Pearson.

#### **Prescribed Research Papers:**

- Smith, R. E., & Yang, X. (2004). Toward a general theory of creativity in advertising: Examining the role of divergence. *Journal of Marketing Theory*, 31-58. doi:10.1177/1470593104044086
- Winter, E., Russell, J. T., & Wolter, L. J. (1973). Psychographics and Creativity. *Journal of Advertising*, 32-36+46.
- Smith, R. E., MacKenzie, S. B., Yang, X., Buchholz, L. M., & Darley, W. K. (2007). Modeling the Determinants and Effects of Creativity in Advertising. *Marketing Science*, 819 - 833.

#### **Suggested Additional Reading:**

- MacRury, I. (2009). Advertising. New York: Routledge.
- Farbey, A.D. How To Produce Successful Advertising: A Guide to Strategy, Planning and Targeting (Third ed.). (2002). London: Kogan Page Limited.
- Eighmey, J., & Sar, S. (2007). Harlow Gale and the Origins of the Psychology of Advertising. *Journal of Advertising*, 147-158.

## Editorial Writing

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** JCW 529

**Course Name:** Editorial Writing

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** This course is designed to

- Introduce the students to the field of editorial writing, audience understanding and persuasion.
- The students will be given practical assignments to drill the skills needed for writing and it will help them develop new skills as a critical thinker.
- Discuss the skills and judgment needed for writing and selection of opinion pieces.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Writing skills: 5%
  - Home Assignments: 10%
  - Role Play: 5%

**Course Contents:**

**UNIT-I: Concept of Editorial Writing**

**(4 Hours)**

- The editorial page
- Defining editorial
- Qualities and responsibilities of the editor
- Deputy editor, assistant editor and editorial staff

**UNIT- II: Editorial Writing Rules and Tools**

**(4 Hours)**

- Rules for editorial writing
- Concept of op-ed page, Editorial policy
- The editorial board, Editorial conference
- Tools: Reading, library, clippings and research

**UNIT - III: Writing the Editorials**

**(4 Hours)**

- Kinds of editorial writing: Leaders' opinion articles, analytical articles, current topics, importance of letters to editor.
- Structure of editorials
- Types of editorials
- Planning of editorial page, Editing the opinion articles: do's and don'ts

**UNIT - IV: Writing Columns and Middles**

**(4 Hours)**

- Planning and writing columns
- Series of Articles
- Middles
- Editorial cartoons

**UNIT - V: Editorials and other Forms of Writing**

**(4 Hours)**

- Letter to editor, Selecting and editing letters to the editor
- Comparative study of edit page of local and national dailies
- Magazine Editorials
- Reading and analysing editorials, opinion articles on a particular issue by various newspapers

**Text Book:**

1. Aggarwal, VirBala (2006). Essentials of Practical Journalism. Concept Publishing Company, New Delhi.
2. Kamath, M. V. (2009). Professional Journalism. Vikas Publishing House, New Delhi.
3. Stonecipher, Harry (1990). Editorial and Persuasive Writing: Opinion functions of the News media. Hastings House, New York.

**Additional Readings:**

1. Clark, Roy Peter (2006). Writing Tools: 50 essential strategies for every writer. Little, Brown and Company, New York.
2. Nicholls, Brian (1972). Features with Flair. Vikas Publications, Delhi.
3. Rystrom, Kenneth (1983). The why, who and how of the Editorial Page. Random House, New York.

## News Report Writing

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** JCW 404

**Course Name:** News Report Writing

**Credits Equivalent:** 4 Credits

(One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity; 15 hours of other workload such as independent individual/ group work; gathering of news; writing reports/ survey/data collection/analysing the data/ field reports; writing of articles/features/Press releases/conferences/asking questions/mock interviews/paper presentations/ seminars, etc.)

#### **Course Objectives:**

*This course aims at*

1. To equip the learners an in depth understanding of how to write a report and developing basic skills in Reporting and Writing news.
2. Enabling the students to know the techniques of interviewing and news gathering.
3. To develop written and communication skills among the learners and to inculcate curiosity and how to dig up information and techniques of investigation.
4. To understand the role of a reporter.
5. Exposing the students to different types of reporting together with the ingredients of ideal effective reporting and to teach the learners the ethics of reporting.

#### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - vi Demo Interviews: 10 %
  - vii Presentation/Seminar Paper: 15%



**Course Content:**

**Unit I**

**( 8 Hours)**

- What is Reporting? & Evolution of Reporting
- 'Avisi' and the reporter's network
- The advent of Printing and evolution of Modern press
- History and Evolution of News Reporting in United Kingdom & USA
- History and Evolution of News Reporting in India
- Qualities of News writing
- Basic News story & Principles governing news coverage
- News Values

**Unit II**

**(8 Hours)**

- News paper vocabulary
- Employees in News paper establishment
- Qualifications and responsibilities of a Reporter
- Reporting Skills
- Types of Reporters and Journalistic attitudes
- Newspaper Organization and hierarchy
- ABC of reporting
- News Gathering, Beats and Sources
- News writing basics

**Unit III**

**(8 Hours)**

- Components of a News story, 5 W's and H
- Structure of News Story
- Inverted Pyramid and other styles
- Alternative Story Forms
- Writing for Broadcast Media
- Leads, Types of Leads
- Types of News & Interview Techniques
- Difficulties in reporting
- Convergent Media Writing

**Unit 1V****(8Hours)**

- Types of Reporting
- Political Reporting
- Crime Reporting
- Economic and Financial Reporting
- Sports Reporting
- Legislature reporting
- Science and Environment Reporting
- Mofussil Reporting
- Advocacy Reporting
- Film reporting

**Unit V****(8 Hours)**

- Reporting special events, Disasters and Accidents, Covering court cases, Judgments
- Ethical guidelines in coverage of news New Genres of Reporting
- Investigative Journalism
- Online Journalism
- Citizen's Journalism & Embedded Journalism & Blogs
- Cheque Book Journalism & Paid News
- Legal and Ethics Issues in Reporting

**Prescribed Textbooks:**

Carole Rich (2010) *News Writing and Reporting*, Cengage Learning India Private Limited, India Edition, New Delhi. ISBN -13:978-81-315-1235-7.

Manukonda Rabindranath & T.Shyam Swaroop, *News Reporting-Techniques and Trends* (2011) LAP Lambert Academic Publishing, Germany.ISBN-978-3-8484-1209.

**Suggested Extra Readings:**

Gupta, V.S. (2010) *Handbook of Reporting and Communication Skills*, Concept Publishing House, New Delhi.

Kamath M.V, *Professional Journalism*, Vikas Publishing House, Pvt Ltd, New Delhi.

Sewak Ram Sharma, (2010), *Guidelines for Writing, Reporting and Editing*, D.P.S Publishing House, New Delhi.

Stovall, (2010) *Journalism: Who, What, When, Where, Why and How*, PHI Learning, Private Limited, Delhi. ISBN: 978-81-203-4369-6.

Usha Raman, (2010) *Writing for Media*, Oxford University Press.

## Contemporary Issues in Media Studies

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code: JCW 601**

**Course Name:** Contemporary Issues in Media Studies

**Course Objectives:** The Course is designed to:

- Acquaint the students with the contemporary issues relevant to the representations of various sections of the society in the media.
- Assist the students in understanding the effects of media on the society.
- To review some of the historical and theoretical debates in detail and analyse the landscape of the fast changing field in connection with long standing debates on media

### Unit-1

- Art-19 (1) A- Land Mark Cases
- Social Media and Freedom of Expression
- Media and Environmental Issues
- Cinema and Society
- Cyber Crimes & Laws and Social Issues
- ICT and Civil Society

### Unit-2

- Citizen Journalism and the New Media
- Evaluating the Developmental Impact of E-Governance Initiatives
- Media Freedom and Right to Privacy
- Women and Media
- ICT and Rural Development
- Media and Human Rights
- Media and Consumerism
- Panchayati Raj and Participatory Communication for Social Change

### **Unit-3**

- Issues in Public Service Broadcasting
- Community Radio in India: Opportunities and Challenges
- Explosion in Digital Space: Opportunities and Challenges
- Media and Political communication in India

### **Unit-4**

- Global Consolidation of Media Industries
- Shifts in Audience Composition and its effects on Media Markets
- Globalization, Domestications and Convergence of Media Operations in Developing Countries
- Media Institutions in Transnational Societies
- Media and Economic Modernization
- Passing of Dominant Paradigm
- Correlations between Economic and Communication Process

### **Unit-5**

- Social Media Technology – Web 2.0, Cloud Computing, Smart phones
- Introduction to Social Network and Social Networking
- Social Network and Knowledge Management System
- Social Network Analysis
- Social Media (Blogging, Facebook, LinkedIn, Twitter etc.)
- Social Media Policy
- Return on Investment (ROI) and social network measurement

## References:

### Prescribed Textbooks:

- AshwaniSaith, M. Vijayabhaskar& V. Gayathri (2008) ICTs and Indian Social Change, Sage Publication, New Delhi.
- Basu, D.D. (1996). *Law of the Press Third Edition*. New Delhi: Prentice Hall of India, Pvt.Ltd.
- NaliniRanjan (2007) 21<sup>st</sup> Century Journalism in India, Sage Publications. New Delhi
- Prasad, Kiran (2009). *Communication for Development: Reinventing Theory and Action (in 2 Vols.)*. B.R. Publishing Corporation, New Delhi.
- Alison Alexander (2003), *Media Economics: Theory and Practice*, Routledge.
- David R. Croteau (2005), *The Business of Media: Corporate Media and the Public Interest*, Routledge.
- Colin, Hoskins, Stuart, McFadyen & Adam Finn (2004), *Media Economics: Applying Economics to New and Traditional Media*, Sage.
- Alan B. Albarran, 2002, *Media Economics: Understanding Markets, Industries and Concepts*, Iowa State University Press.
- Robert Waterman McChesney, 2008, *The Political Economy of Media: Enduring Issues, Emerging Dilemmas*, Monthly Review Press.
- Gillian, Doyle, 2002, *Understanding Media Economics*, Sage.
- Gillian, Doyle, 2002, *Media Ownership: The Economics and Politics of Convergence and Concentration in the UK and European Media*, Sage.
- Weinberg, Tamar. (2009). *The New Community Rules*. O'Really Media.
- Barger, Christopher, Barger. (2011). *Social Media Strategist*. Pinterest.
- Mitch, Joel. (2009). *Six Pixels of Separation: Everyone is Connected*. Business Plus.

### Suggested Extra Readings:

- Basu, D.D. (1993). *Introduction to the Constitution of India*. New Delhi: Prentice-Hall of India, Pvt.Ltd.
- Neelambar. M. (2010). *Media laws and Ethics*. New Delhi: PHI Learning, Pvt. Ltd.

- Rayudu, C.S. & Nageswara, R (2010). *Mass Media Laws and Regulations*. New Delhi: Himalaya Publishing House.
- E.M. Rogers (1971). *Communication and Development: A Cross-Cultural Approach*. New York, Free Press.
- Joshi, P.C. (2002). *Communication and National Development*. Anamika Publishers & Distributors, New Delhi.
- Srinivas Melkote and H. Leslie Steeves (2001). *Communication for Development in the Third World* 2<sup>nd</sup> Edition. Sage, New Delhi.
- Jan Servaes, Thomas Jacobson and Shirley White (1996). *Participatory Communication for Social Change*. Sage, New Delhi.
- Kirkpatrick, David. (2010). *The Facebook Effect*. Simon & Schuster.
- Christakis and Flower, J.H. (2009). *Connected: The Surprising Power of our Social Networks and How They Shape Our Lives*. Little Brown & Co.

## Department of Mass Communication & Electronic Media

### School of Journalism, Mass Communications & New Media

Name of the Department: **Department of Mass Communication & Electronic Media**

Name of the Programme of Study: **MA (New Media Communication)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No pf Pre-requisitie/ Co-requisites if any	Teacher
1	MCE 511	Media Production Techniques	4	MCE 425	Dr. Pradeep Nair
2	MCE 410	Social Networking	4	NA	Dr. R.P. Rai
3	MCE 403	Reporting and Editing	4	NA	Kuldeep Singh
4	MCE 406 A	Web Technologies and Applications	2	NA	Dr. Pradeep Nair
5	MCE 417	Digital Technology Divide and Social Inclusion	2	NA	Dr. Pradeep Nair

#### Courses for Semester 4

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisitie/ Co-requisites if any	Teacher
1	MCE 407	Communication Research	4	NA	Dr. Pradeep Nair
2	MCE 502	Video Editing/Online Editing	4	NA	Kuldeep Singh
3	MCE 515	Film Production	4	MCE 514	Dr. R.P. Rai
4	MCE 517	Production Management	2	NA	Kuldeep Singh
5	MCE 418	Exposure to New Media Industries	2	NA	Dr. Pradeep Nair
6	MCE 518	Media Internship	4	NA	Dr. Pradeep Nair/Dr. R.P. Rai/Kuldeep Singh



**University Wide Courses**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Code No. of Pre-requisite/ Co-requisites if any</b>	<b>Teacher</b>
1	MCE 410	Social Networking	4	NA	Dr. R.P. Rai
2	MCE 403	Reporting and Editing	4	NA	Kuldeep Singh
3	MCE 407	Communication Research	4	NA	Dr. Pradeep Nair
4	MCE 405	Corporate Communication	4	NA	Harsh Mishra
5	MCE 419	Social and Cultural Context of Communication	2	NA	Harsh Mishra
6	MCE 417	Digital Technology Divide and Social Inclusion	2	NA	Dr. Pradeep Nair

## Reporting and Editing

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MCE 403

**Course Name:** Reporting and Editing

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To acquaint the students with the reporting and editing techniques for television and radio.
- To train the students in various reporting beats for electronic media.
- To familiarize students with current changes taking place in the field of electronic news gathering and reporting.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 5%
  - Assignments 15%

## **Course Contents**

### **Unit-I Introduction**

**(4 Hours)**

Assignment Desk, Input Desk & News Bureau

What is news

Sources of news

Nose for news

Legal complexities and remedies

### **Unit-II Objective Reporting**

**(8 Hours)**

Reporting facts and figures

Visuals and byte

Piece-to-camera, walk through, Vox-pop

Interviews

Live reporting, Live from desk and Live phone-in

Studio Discussions

### **Unit-III Types of Reporting**

**(8 Hours)**

Spot Reporting

Investigative reporting & Under Cover Operations

Crime Reporting

Riots/violence Reporting

Court Reporting

Parliament/Vidhan Sabha Reporting

**Unit-IV News Writing**

**(8 hours)**

Anchor Intro and body part

Essential of script writing

Writing for graphics

**Unit- V Editing of news**

**(12 hours)**

Out put desk and producer

Re-writing of news

Voice-over and video editing

Project: Practical News Coverage

## Essential Readings

- i. Shook, Fred., Larson, John & DeTarsio, John. (2012). Television and Field Reporting (6<sup>th</sup> Edition). Pearson.
- ii. Keller, Teresa. & Hawkins, S.A. (2005). Television News: A Handbook for Writing, Reporting, Shooting and Editing. Holcomb Hathaway Publishers.
- iii. Gibson, Roy. (1991). Radio and Television Reporting. Allyn & Bacon.

## Suggested Readings

1. Brooks, S.B., Kennedy, G. Moen, D.R. & Ranly, D. (2001). Telling the Story: Writing for Print, Broadcast and Online Media. New York: Bedford/St. Martin's
2. Cooper, C.R. & Peck, Susan. (2000). Writing the World: Reading and Writing about Issues of the Day. Boston: Bedford/St. Martin's
3. Wykes, Maggie. (2001). News, Crime and Culture. Sterling VA: Pluto Press.

## Video Editing/Online Editing

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MCE 502

**Course Name:** Video Editing/Online Editing

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To train the students in non-linear editing.
- To provide hands on training on various editing software's used for nonlinear and online editing.
- To familiarize students with the new editing techniques used to editing high definition video contents.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 5%
  - Assignments 15%

## **Course Contents**

### **Unit I Introduction**

**(4 Hours)**

Linear and Non-linear Video Editing

Video editing software

News channels and video editing

### **Unit II Basic principles of editing**

**(8 Hours)**

Conversion of video files

Editing of video and sound

Effects and Transitions

Sound effects

Time line, rendering and exporting of package

### **Unit III Safe Frame**

**(8 Hours)**

Editing news in different formats

Editing of sports story

Editing of crime stories

Editing of entertainment stories

**Unit IV Value Addition****(8 Hours)**

Making of promos, teasers and stings

Graphics, Music and Ambience

ASTONS, headers and lower bands

**Unit V Job of Precision****(12 Hours)**

On-line editing

Editing of multi-cam interviews

Making of documentary

Project: Making of news package, documentary and editing of interview



## Essential Readings

- i. Ohanian, Thomas. (1998). *Digital Non-linear Editing: Editing Film and Video on the Desktop*. Oxford: Focal Press.
- ii. Shufflebottom, Roger. (2011). *Video Editing with Avid: Media Composer, symphony, Xpress*. Oxford: Focal Press
- iii. Dancyger, Ken. (2011). *The Technique of Film and Video Editing: History, Theory and Practice*. Oxford: Focal Press.

## Suggested Readings

1. Morris, Patrick. (1999). *Nonlinear Editing (Media Manuals)*. Oxford: Focal Press.
2. Browne, S.E. (1998). *Nonlinear Editing Basics: Electronic Film and Video Editing*. Oxford: Focal Press.
3. Shalat, Andrew. (2012). *How to Do Everything with Online Video*. McGraw-Hill Osborne Media

## Media Production Techniques

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MCE 511

**Course Name:** Media Production Techniques

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To make the student aware about the relationships between different communication formats and the emerging technologies
- The focus of this course is to expose students to different media production techniques that will allow them to work in the field of high definition broadcasting and digital media. The emphasis here is on exploring the ways in which technology and media industries are co-related.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 5%
  - Project : 15%

## **Course Contents:**

### **Unit -I: Techniques of Audio Production (6 Hours)**

- Basics of Sound
- Parameters and Propagation of Sound
- Digital Audio Basics
- Digitization of Sound
- Designing Sound for Studio

### **UNIT- II: Techniques of Video Production (10 Hours)**

- Describing the Video Stream
- Digitization of Video Signals
- Interlacing versus Progressive Scanning
- Video Resolution and Aspect Ratio
- Sampling formats and bit rates
- Standard and High-Definition

### **UNIT - III: Audio/Video Compression basics (6 Hours)**

- Video compression principles, predictive, transform and temporal coding
- Source coding for video signal, DCT, Quantization, Entropy coding
- MPEG compression standards
- Introduction to H.264 Standards

### **UNIT – IV: High Definition Video: Acquisition to Broadcast (10 Hours)**

- Image Acquisition
- Professional Cameras, Prosumer Cameras and Consumer Cameras
- Video Storage
- High Bandwidth Digital Content Protection

### **UNIT - V: Standards & formats for broadcasting (8 Hours)**

- Standards of Television Broadcasting: NTSC, Digitized Video, MPEG
- New Standards for Ultra High Definition Television Broadcasting (UHDTV)
- Quality of Experience and System Efficiency
- New DVB Delivery Systems
- Audio for UHDTV

#### **ESSENTIAL READINGS:**

1. Dominick, J.R. (2010). Broadcasting, Cable, the Internet and beyond: An Introduction to Modern Electronic Media. New York: McGraw Hill Inc
2. Medoff, Norman. (2011). Electronic Media Then, Now and Later. Oxford: Focal Press.
3. Collins, G.W. & Willey, John. (2008). Fundamentals of Digital Television Transmission. Norwood: Artech House.

#### **SUGGESTED READINGS:**

- i. Zettl, Herbert. (2011). Video Basics. Hertfordshire: Wordsworth.
- ii. Cianci, P.J. (2010). HDTV and Transition to Digital Broadcasting. Oxford: Focal Press.
- iii. Millerson, Gerald. (2010). Television Production. Oxford: Focal Press.
- iv. Addison, H.F. (2008). Multimedia Communications: Applications, Networks, Protocols and Standards. Indianapolis: Wesley.

## Film Production

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** MCE 515

**Course Name:** Film Production

**Credits Equivalent:** 4 Credits (One credit is equivalent to 40 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- Demonstrate proficiency in pre film production planning and acquisition.
- Elucidate the basic film production components.
- Explore film production techniques and exercise with equipments.
- Explain the mechanics, treatment of story, aesthetics and presentation.
- Team building for film production and produce a short film by the team.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
  2. End Term Examination: 50%
  3. Continuous Internal Assessment: 25%
- Class Participation: 5%
  - Project and team spirit: 20%

**COURSE CONTENTS:**

**Unit- 01: Introduction to Cinema**

(5 hours)

What is cinema?

Evolution of World Cinema and Indian Cinema

Varieties of Cinema

Cinema Genres

Eminent Film Makers

Film Components

Production Crew (Producer, Director, Cinematographer, Script Writer etc.)

**Unit-02: Pre Production**

(10 hours)

Concept and Theme

Selecting a Story for Film Making

Script and Dialogue Writing

Budgeting and Casting

**Unit-03: Production**

(10 hours)

Direction

Character and Acting

Shooting-Script and Shots

Set Designing, Makeup and Dress

Light, Music, Camera Angle and Action

**Unit-04: Post Production**

(5 hours)

Editing

Sound

Special Effects

Graphics and Chroma key

Exporting

Marketing and Promotion

**Unit-05: Project**

(10 hours)

Poster and Promo Making

Production of a Short Film

Promotion

Preview

**ESSENTIAL READINGS**

1. Katz, S.D. (1991). *Film Directing Shot by Shot: Visualizing from Concept to Screen*. Michael Wiese Productions.
2. Lumet, Sidney. (1996). *Making Movies*. Vintage.
3. Ascher, S. Pincus, E., Burn, R., Keller, C., McCarthy, S. & Spagna, T. (1999). *The Filmmaker's Handbook: A Comprehensive Guide for the Digital Age*. Plume.

**SUGGESTED READINGS**

1. Pepperman, R.D. (2005). *Setting Up Your Scenes: The Inner Workings of Great Films*. Michael Wiese Productions.
2. *Cinematography: Theory and Practice: Image Making for Cinematographers, Directors, and Videographers*. Oxford: Focal Press.
3. Rabiger, Michael. (2003). *Directing: Film Techniques and Aesthetics*. Oxford: Focal Press.
4. Underdahl, Douglas. (2010). *The 16 mm Camera Book*. Long Valley Equipment Inc.

## Communication Research

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MCE 407

**Course Name:** Communication Research

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To acquaint research scholars with a variety of research methods and approaches
- To train the scholars in qualitative and quantitative analytical techniques
- To familiarize students with current research writing styles

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 5%
  - Assignments 15%



## **Unit 1: Introduction to Communication Research**

**(10 Hrs)**

- Introduction to research in communication studies
- Conceptualization, Operationalization & Measurement.
- Qualitative and Quantitative Approaches
- Research Ethics
- Ethnography, Participant Observation
- Case Studies
- Experiments
- Focus Groups & Reception Analysis
- Sampling

## **Unit 2: The Research Process**

**(8 Hrs)**

- Planning Research
- Research Design
- Hypothesis Formulation
- Collecting and Documenting Data
- Organizing, Coding and Analysis of Data
- Planning and Action
- Textual and Visual Analysis

## **Unit 3: Methods Toolbox**

**(10 Hrs)**

- ✓ Key Methods of Communication Research
- ✓ Participant Observation
- ✓ Field Notes
- ✓ In-depth Interviews
- ✓ Group Interviews
- ✓ Diaries and Self Documentation
- ✓ Media Audit and Content Analysis
- ✓ Questionnaire/Schedule based Surveys
- ✓ Published Information and Documentary Material
- ✓ Feedback Mechanism

## **Unit 4: Writing a Research Paper**

**(7 Hrs)**

- ✓ Doing research and writing a paper
- Introduction
- Literature Review
- Theoretical Framework
- Research Questions
- Research Methodology
- Results
- Discussion

- Conclusion
- References (In-text citations and bibliography)

**Unit 5: Assignments/ Workshops:**

**(5 Hrs)**

This unit will combine a workshop and lecture format so that students work on methodologies in class. They will be required to demonstrate an understanding of each method by doing an exercise in every class.

Students are required to:

- 1) Submit a one-page paper at the beginning of each class on the discussions of the previous class.
- 2) Write quantitative and qualitative questionnaires
- 3) Complete a pilot project on collecting quantitative and qualitative data
- 4) Do Excel and SPSS exercises
- 5) Write the research report

**ESSENTIAL READINGS:**

1. Wimmer, R.D. & Dominick, J.R. (1994). Mass Media Research (6<sup>th</sup> Ed.). NY: Wadsworth Publishing Company.
2. Anderson, James. (1987). Communication Research Issues and Methods. New York: McGraw Hill Inc.
3. Berger, Arthur Asa. (2011). Media Analysis Techniques (Fourth Edition). New York: Sage.

**SUGGESTED READINGS:**

1. Angrosino, Michael. (2007). Doing Ethnographic and Observational Research. London: Sage.

2. Poindexter, Paula & McCombs, Max. (2000). Research in Mass Communication: A Practical Guide. Boston: Bedford/St. Martins’.
3. Lowery, S. & Defleur, M.L. (1995). Milestones in Mass Communication Research (3<sup>rd</sup> Edition). White Plains, NY: Longman.
4. Koivisto, Juha and Thomas, Peter. (2008). Mapping Communication and Media Research: Paradigms, Institutions, Challenges. Department of Communication Research, University of Helsinki Research Reports 11/2008. Available at <http://www.helsinki.fi/crc/Julkaisut/Koivisto-ThomasPDF.pdf>
5. Katz, Elihu. (1959). Mass Communication Research and the Study of Popular Culture. Departmental Paper, Annenberg School for Communication, University of Pennsylvania. Available at [http://repository.upenn.edu/cgi/viewcontent.cgi?article=1168&context=asc\\_papers](http://repository.upenn.edu/cgi/viewcontent.cgi?article=1168&context=asc_papers)

## Social Networking

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MCE 410

**Course Name:** Social Networking

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To acquaint students with the fundamental technologies of the mobile communications.
- To make the students understand the mobile communication environment, the intricacies and competitive landscape of the new media industry.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 10%
  - Home Assignments: 5%
  - Role Play: 5%

**Course Contents:**

**Unit -I: Social Network**

**(8 Hours)**

- Introduction to Social Network
- Social Network and Knowledge Management System
- Social Network Analysis
- Application of Social Network Analysis
- Social Media Technology – Web 2.0, 3.0, Cloud Computing, Smart phones

**UNIT- II: Social Networking**

**(8 Hours)**

- Social Networking
- Social Media
- Social Networking Platforms
- Pros and Cons of Social Networking
- Future of Social Networking

**UNIT - III: Policy and Strategic Framework**

**(8Hours)**

- Social Media Policy
- Communication Strategies for Social Media
- Social Media Measurement
- Return on Investment (ROI)
- Blogging, Facebook, LinkedIn, Twitter

**UNIT - IV: Story Telling for the Web (8 Hours)**

- Technique
- Style and Presentation
- Layering of Information
- Impact and Context

**UNIT - V: Social Media Practices**

**(8 Hours)**

- Communication/e-Governance
- Advocacy

- Health
- Business
- Crisis Management

**ESSENTIAL READINGS:**

S.No.	Name of the Book	Author	Year of Publication	Publisher
1	The New Community Rules	Tamar Weinberg	2009	O'Reilly Media
2	Social Media Strategist	Christopher Barger	2011	Pinterest
3	Six Pixels of Separation: Everyone is Connected	Mitch Joel	2009	Business Plus

**SUGGESTED READINGS:**

S.No.	Title of the Book/ Research Manuscript	Author	Year of Publication	Publisher/Journal & Volume, Page No.
1	The Facebook Effect	David Kirkpatrick	2010	Simon & Schuster
2	Connected: The Surprising Power of our Social Networks and How They Shape our Lives	Christakis and James H. Flower	2009	Little Brown & Co.
3	Socialnomics: How Social Media transforms the way we live and do business	Erik Qualman	2009	John Wiley & Sons

## Exposure to New Media Industries

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code:** MCE 418

**Course Name:** Exposure to New Media Industries

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Introduce the students about the concept and issues of new media industries.
- Make the students understand various business structures for various media industries.
- Familiarize the students with the issues and problems of third wave of capitalism transforming the global market place into an exciting place to do innovative media business.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 10%
  - Project: 10%

**Course Contents:**

**Unit -I: Media Business and Industry (4 Hours)**

- Entertainment and Media Industry Overview
- Media Segments, Growth Drivers, Issues and Challenges
- Ownership and Politics of Convergence

**UNIT- II: Broadcast Media Business (4 Hours)**

- Forms and Structures
- Content Sourcing and Production Management
- Media Business Shifts into Hyperdrive

**UNIT- III: Digital Capitalism and New Media Industries (4Hours)**

- Digital Capitalism and New Digital Media Industries
- Technology Convergence and Transition to Digital Broadcasting

**UNIT - IV: Film and Music Business (4 Hours)**

- Business Structures for Film and Music Industry
- Issues of Production and Distribution of Film and Music
- Digital Cinema and Digital Music

**UNIT - V: New Business Media Opportunities (4 Hours)**

- Introduction to Animation and Gaming Industry
- Mobile and Internet Media Business Opportunities
- New Communication Policy and Regulatory Frameworks

**Prescribed Essential Readings:**

1. The Business of Media: Corporate Media and the Public Interest by David R. Croteau, Routledge (2005)
2. Broadcasting, Cable, the Internet and Beyond: An Introduction to Modern Electronic Media by Joseph R. Dominick, McGraw Hill (2011)
3. HDTV and Transition to Digital Broadcasting by Phillip J. Cianci, Focal Press (2007).

**Suggested Additional Readings:**

1. FICCI-KPMG Media and Entertainment Industry 2010 by KPMG, FICCI
2. Media Economics: Understanding Markets, Industries and Concepts by Alan B. Albarran, Iowa State University Press (2002)



## Production Management

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** MCE 517

**Course Name:** Production Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To guide the students about the most important updates in electronic media management.
- To acquaint the students about the recent changes taking place in broadcast industry due to internet and convergence.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Class Participation: 5%
  - Group Discussion: 10%
  - Home Assignments: 5%
  - Role Play: 5%

**Course Contents:**

**Unit -I: Television Broadcasting**

**(4 Hours)**

- Programme Production System Work Flow
- Studio, PCR, MSR
- News Production Systems
- Playout and Distribution of TV programmes

**UNIT- II: Radio Broadcasting**

**(4 Hours)**

- Programme Production System Work Flow
- Studio, PCR, MSR
- Playout and Distribution of Radio programmes

**UNIT- III: Electronic Media Business Structures**

**(4 Hours)**

- TV Channel
- Radio Station
- Cable and Satellite Television Broadcasting Structure

**UNIT - IV: Content Sourcing and Production Management**

**(4 Hours)**

- Content Sourcing and Creation
- Content Management
- Customization and Distribution of contents over multiple platforms

**UNIT - V: Regulatory Framework**

**(4 Hours)**

- Licensing for Broadcast Media Business
- IPR and Rights Management

**Prescribed Essential Readings:**

4. Management of Electronic Media by Alan B. Albarran, Cengage Learning (2009).
5. Electronic Media Management by Peter Pringle and Michael F Starr, Focal Press (2011).

**Suggested Additional Readings:**

3. The Business of Media: Corporate Media and the Public Interest by David R. Croteau, Routledge (2005)
4. FICCI-KPMG Media and Entertainment Industry 2010 by KPMG, FICCI
5. Media Economics: Understanding Markets, Industries and Concepts by Alan B. Albarran, Iowa State University Press (2002)

## Communication Theories

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**Course Code:** MCE 601

**Course Name:** Communication Theories

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- To acquaint the research degree scholars with the theories of Mass Communication and development with special reference to various communication phenomena, issues and problems of present day context.
- To make the scholars understand the media environment through choices from the huge menu of cultural artifacts and channels of communication that surround them all the time.

**Unit I: Media Theories: An Historical Overview**

1. Introduction to Theory
2. Concepts and models – process of communications
3. Theories of media and theories of society
  - a) Propaganda Theory
  - b) Media Effects
  - c) Functionalism
  - d) Structuralism – ownership, power and hegemony.
  - e) Political economy versus the pluralist approaches
  - f) Culturalist – the Frankfurt and Birmingham schools
  - g) Uses and gratification
  - h) Agenda Setting
  - i) The Framing Paradigm

## **Unit II: Critical-Cultural Theories and Beyond**

1. Psychoanalysis –
2. Semiotics – reading of media text
3. Post-modernism
4. Post-structuralism, Deconstruction
5. Postcolonial Theories
6. Gender and Feminist Theories
7. New Media Theories

## **Unit III: Theoretical Approaches to Development Communication**

1. Communication for Development
2. Dominant Paradigm
3. Modernization and Pragmatic Modernization Perspective
4. Social versus Mass
5. Schramm, Lerner and Rogers
6. Community based Development Approaches
7. Communication Gap and People's Communication Charter
8. Social Media as an Alternative Proponent

## **Unit IV: Ecological Concern to Media Studies**

1. Walter J. Ong – Media in a historical context; Orality and Literacy
2. Neil Postman – Technopoly: The Surrender of Culture to Technology
3. Marshal McLuhan – Understanding Media Praxis
4. Harold Innis – The Bias of Communication
5. The New York and Toronto School
6. The Formal and Indian Root to Media Ecology
7. Research Paper Discussions

## **Unit V: Perspectives on Technology and Communication**

1. Lewis Mumford – The Transformations of Man
2. Siegfried Giedion – Space, Time and Architecture
3. Jacques Ellul – The Technological Society
4. Norbert Wiener – Cybernetics and Society
5. Buckminster Fuller – Synergetics: The Geometry of Thinking
6. Research Paper Discussions

## Assignments

- Critical Review of Theories: To be submitted at the end of every week. The scholars will prepare a 1000 words summary of the theories taught during the week.
- The scholars have to submit a Review of at least 10 research papers on the theories and seminal pieces discussed during the course at the end of the session published in reputed/referred journals.
- The Scholars have to submit a Research Paper on any theoretical approach listed in the syllabus and have to present it in a Seminar at the end of the session.

## References:

### Essential Readings:

1. Harper, Nancy L. (1979). *Human communication theory: The history of a paradigm*. Rochelle Park, NJ: Hayden Book Company.
2. McQuail, Denis (2002) *Mass Communication Theory*. London: Sage
3. Stevenson, Nick (1995): *Understanding Media Cultures: Social Theory and Mass Communication*. London: Sage
4. E.M. Rogers (ed.) (1971). *Communication and Development: A Cross-Cultural Approach*, New York, Free Press.
5. Hamelink, Cees J. (1983). *Cultural Autonomy in Global Communication*. New York: Longman.

### Suggested Readings:

1. Ellul, J. (1964). *The Technological Society*. New York: Knopf.
2. Fuller, R.B. & Applewhite, E.J. (1975). *Synergetics: Explorations in the geometry of thinking*. New York: Macmillan.
3. Giedion, S. (1947). *Space, Time and Architecture: The Growth of a New Tradition*. Cambridge, MA: Harvard University Press.
4. Hamid Mowlana and Lawrie J. Wilson (1990). *The Passing of Modernity: Communication and the Transformation of Society*, New York and London, Longman.
5. Hodge, Bob and David Tripp. (1986). *Children and Television: A Semiotic Approach*. Palo Alto: Stanford University Press.

6. Hornik, R.C. (1988). *Development Communication: Information, Agriculture and Nutrition in the Third World*. New York: Longman.
7. Innis, H.A. (1951). *The Bias of Communication*. Toronto: University of Toronto Press
8. Jenkins, Henry. (1991). *Textual Poachers: Television Fans and Participatory Culture*. New York: Routledge.
9. Jurgen Habermas (1976). *Communication and the Evolution of Society*, Boston: Beacon Press.
10. Katz, John. (1997). *Virtuous Reality*. New York: Random House.
11. McLuhan, Marshall (1964): *Understanding Media*. New York: Mc Graw-Hill
12. Moemeka, A.A. (2000). *Development Communication in Action: Building understanding and creating participation*. New York: University Press of America.
13. Mumford, L. (1956). *The Transformations of Man*. New York: Harper & Bros.
14. Ong, W.J. (1982). *Orality and Literacy: The Technologizing of the Word*. London: Routledge.
15. Postman, N. (1992). *Technopoly: The Surrender of Culture to Technology*. New York: Alfred A. Knopf.
16. Rogers, E.M. (1993). *Perspectives on Development Communication*. In K.S. Nair & White, S.A. (Eds.), *Perspectives on Development Communication* (pp. 35-46). New Delhi: Sage Publications.
17. Schramm, Wilbur. (1971). *The Process and Effects of Mass Communication*. Urbana: University of Illinois Press.
18. Schramm, Wilbur. (1964). *Mass Media and National Development: The Role of Information in the Developing Countries*. Stanford, CA: Stanford University Press.
19. Seiter, Allen. (1999). *Television and New Media Audiences*. London: Oxford University Press.
20. Wiener, N. (1950). *The Human use of Human Beings: Cybernetics and Society*. Boston: Houghton Mifflin.

# School of Life Sciences

## Centre for Computational Biology & Informatics

### School of Life Sciences

Name of the Department: **Centre for Computational Biology & Informatics**

Name of the Programme of Study: **MSc (Computational Biology and Bio-Informatics)**

#### Courses for Semester 2

S. No.	Course Code	Course Title	Credits	Pre-requisite/ Co-requisites if any	Name of The Teacher
1.	CBB 417	Structure Biology	2	NA	Dr. Yusuf Akhter
2.	CBB 418	Biomolecules	2	NA	Dr. Yusuf Akhter
3.	CBB 401	Mathematics in Biology	2	NA	Dr. Vikram Singh
4.	CBB 518	Elements of Systems Biology	4	NA	Dr. Vikram Singh
5.	CBB 403	Introduction to Statistics and Probability	2	NA	Dr. P. Aparoy
6.	CBB 422	Basics of Microbiology and Immunology	2	NA	Dr. P. Aparoy
7.	CBB 409	Computational Methods in Sequence Analysis	2	NA	Mr. Shailender Kumar Verma
8.	CBB 509	Data Mining & Knowledge discovery	4	NA	Mr. Shailender Kumar Verma
9.	CBB 414	Practical Course on Bioinformatics tools	2	NA	Mr. Shailender Kumar Verma

#### Courses for Semester 4

S. No.	Course Code	Course Title	Credit	Pre-requisite/ Co-requisites if any	Name of The Teacher
1.	CBB 516	Molecular Evolution & Biodiversity	4	NA	Dr. Yusuf Akhter
2.	CBB 501	Algorithms in Computational Biology	4	NA	Dr. Vikram Singh
3.	CBB 518	Elements of Systems Biology	4	NA	Dr. Vikram Singh
4.	CBB 513	Chemoinformatics	4	NA	Dr. P. Aparoy
5.	CBB 420	Cell Biology and Genetics	4	NA	Mr. Shailender Kumar Verma
6.	CBB 499	Major Project	4	NA	Dr. Yusuf Akhter / Dr. Vikram Singh / Dr. P. Aparoy / Shailender K. Verma
7.	CBB 515	Computer Aided Drug Discovery	4	NA	Dr. P. Aparoy



**University Wide Courses**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credit</b>	<b>Code No. of Pre-requisite/ Co-requisites if any</b>	<b>Full Name of the Teacher</b>
1.	CBB 516	Molecular Evolution & Biodiversity	4	NA	Dr. Yusuf Akhter
2.	CBB 504	Genomics & Proteomics	4	NA	Dr. Yusuf Akhter/ Shailender K. Verma
3.	CBB 422	Basics of Microbiology and Immunology	2	NA	Dr. P. Aparoy
4.	CBB 401	Mathematics in Biology	2	NA	Dr. Vikram Singh
5.	CBB 419	Concepts in Molecular Biology	2	NA	Mr. Shailender Kumar Verma
6.	CBB 425	Basics of Plant Biotechnology	2	NA	Mr. Shailender Kumar Verma

## Introduction to Statistics and Probability

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code: CBB 403**

**Course Name: Introduction to Statistics and Probability**

**Credits Equivalent: 2**

2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

CBB-403 will introduce the students to the concepts and methods of statistics, covering topics such as data organization, data presentation, data analysis, probability, estimation and hypothesis testing.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Class test: 10%
  - b. Class room participation: 10%
  - c. Attendance: 5%

## Course Contents:

### Unit-I: Frequency Distributions and Graphs

(3 Hrs)

- Introduction to Statistics; Frequency Distributions; Dot Plots; Bar Charts or Bar Graphs; Histograms; Frequency Polygons; Stem-and-Leaf Displays or Plots; Time Series Graphs; Pie Graphs or Pie Charts; Pareto Charts

### Unit-II: Numerical Measures

(4 Hrs)

- Measures of Central tendency:  
Mean, Median, Mode - Notation and Formulae, Mean, Median and Mode for grouped data, relative merits of Mean, Median and Mode
- Measures of Dispersion:  
Range, Semi-interquartile range, Standard Deviation and Variance; Empirical Rule: The normal curve, Percentile and Quartile, Detecting Outliers

### Unit-III: Correlation and Regression

(3 Hrs)

- Introduction to correlation; A numerical Index to Correlation; Pearson Product-Moment Correlation Coefficient; Interpretation of Correlation Coefficient: Explained and Unexplained Variation; Spearman Rank Correlation
- Introduction to Regression; Criterion for the Line of Best Fit; Another Measure of Ability to Predict: The Standard Error of Estimate

### Unit-IV: Probability

(5 Hrs)

- Introduction and Basic Concepts of Probability; Probability of Simple and Combined Events; Various Laws of Probability; Bayes' Theorem; Random Variables and their Distribution; Binomial Distribution; Normal Distribution; Interpreting Scores in Terms of  $z$  Score; Sampling Distribution; Central Limit Theorem

### Unit-V: Introduction to Statistical Inference

(5 Hrs)

- Principles of Hypothesis Testing; One and Two tailed tests;  $z$ -test;  $t$ -test; Chi-Square test; ANOVA

### Reference Books

- Roger E. Kirk (2007) Statistics: An Introduction, Cengage Learning; 5<sup>th</sup> edition (ISBN-13: 978-0534564780)
- Neil A. Weiss (2012) Introductory Statistics , 9<sup>th</sup> edition (ISBN-13: 9780321691224)
- Charles Henry Brase and Corrinne Pellillo Brase Understandable Statistics: Concepts and Methods (2011) ISBN-10: 0840048386

## Basics of Microbiology and Immunology

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 422

**Course Name:** Basics of Microbiology and Immunology

**Credits Equivalent:** 2

2 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### **Course Objectives:**

This introductory course will provide a broad overview of Immunology and basic concepts of Microbiology. The course will cover an introduction to the human immune system; bacteria & viruses and the diseases they cause.

As an introductory course, it emphasizes the description of molecular and cellular elements of the immune system, and their basic function. This course is also designed to give the student insight into the fundamentals of microbiology with emphasis on its relation to human biology and disease.

#### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Assignment: 10%
  - b. Presentation/Class room Participation: 10%
  - c. Attendance: 5%

## **Course Contents:**

### **Unit I - Introduction to the Immune System (4 Hours)**

- Overview of the Immune System
- Elements of Innate and Acquired Immunity
- Immunogens and Antigens
- Antibody Structure and Function
- Antigen-Antibody Interactions

### **Unit II - Antigen Recognition and B and T Cell Development (4 Hours)**

- Biology of the B Lymphocyte
- Role of The MHC complex in The Immune Response
- Biology of the T Lymphocyte
- Activation and Function of T and B Cells

### **Unit III - The Immune System in Health And Disease (4 Hours)**

- Cytokines
- Tolerance and Autoimmunity
- Immunodeficiency Disorders
- Transplantation

### **Unit IV – Bacteria (4 Hours)**

- Bacterial Structure
- Mechanisms of Gene Transfer
- Mechanisms of Bacterial Pathogenesis
- Antibiotics and Resistance

### **Unit V – Viruses (4 Hours)**

- Epidemiology and Control of Virus Infections
- Respiratory, Gastrointestinal and Sexually Transmitted Viruses
- Virus Diagnostic Methods

### **Reference Books:**

1. Immunology: Janis Kuby, Cold W H Freeman & Co (Sd); 3rd edition (February 1997).
2. Microbiology: Lansing M. Prescott, McGraw-Hill Science/Engineering/Math; 8 edition (February 3, 2010)
3. Basic Immunology: Abul K. Abbas & Andrew H. Lichtman, 3rd Edition (January 29, 2010).

### **Further readings:**

1. Color Atlas of Immunology, Gerd - Rudiger Burmester & Antonio Pezzutto, Thieme; 1 edition (December 2002).
2. Human Microbiology: Simon P. Hardy, Publisher: Taylor and Francis CRC ebook account; 1 edition (April 16, 2007).

### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB-513  
**Course Name:** Chemoinformatics  
**Credits Equivalent:** 4

4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

This introductory course will provide a broad overview of Chemoinformatics. The course will cover an introduction to basic theory of chemoinformatics and new advances in this area. This course is also designed to give the student insights into the fundamentals of chemoinformatics with emphasis on its relation to drug development and discovery. It emphasizes the description of computational models and algorithms used in chemoinformatics.

#### Attendance Requirement:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Class Attendance: 5%
  - b. Assignment: 10%
  - c. Class room participation: 10%

## Course Contents:

### Unit I - Representation and manipulation of 2D and 3D molecular structures (8 Hours)

- Introduction
- Computer representation of Chemical Structures
- Structure and Substructure searching
- Structure-Generation Programs and Conformational Search and analysis.
- Systematic Conformational Search and Random Conformational search
- Application of 3D Pharmacophore mapping

### Unit II – Molecular descriptor and computational models. (8 Hours)

- Descriptor calculated from 2D structure.
- Descriptor based on 3D structure.
- Deriving QSAR equation: simple and multiple linear regression.
- Designing a QSAR experiment
- Interpretation and application of QSAR equation

### Unit III – Similarity methods and selection of diverse set of compounds (8 Hours)

- Similarity based on 2D fingerprints.
- 3D similarity.
- Cluster analysis.
- Dissimilarity based selection and Cell based methods.
- Optimization methods
- Comparison and evaluation of selection methods.

### Unit IV – Virtual screening and analysis of high-throughput screening data (10 Hours)

- Introduction
- Drug-likeness and compound filters
- Concept of Structure based virtual screening
- ADMET properties and their prediction

### Unit V – Combinatorial chemistry and libraries design (6 Hours)

- Introduction to combinatorial chemistry
- Diverse and focussed libraries.
- Library enumeration.
- Combinatorial library design strategies.

### Prescribed Text Books:

1. **An introduction to chemoinformatics:** Andrew R. Leach, Valerie J. Gillet ISBN: 978-1-4020-6290-2.
2. **Chemoinformatics: concepts, methods, and tools for drug discovery.** Bajorath, Jürgen, ed. Vol. 275. Humana Press, 2004.

## Computational Methods in Sequence Analysis

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 409

**Course Name:** Computational Methods in Sequence Analysis

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to the steps and key elements of the Sequence Analysis in biology.
- Different algorithms for sequence analysis.
- Utilization and application of sequence analysis in thrust areas of current biological research.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Assignment: 10%
  - b. Class Test: 5%
  - c. Presentation: 10%

**Course Contents:**

**UNIT-I: Sequence and data resources**

**(4 hours)**

1. Genome sequencing
2. Next generation sequencing
3. Sequence Formats for databases
4. Sequence database searching. NCBI, EBI
5. BLAST



**UNIT-II: Pair wise alignment****(4 hours)**

1. Global Alignment
2. Local alignment
3. Dot matrix analysis
4. Needleman-Wunch algorithm
5. Smith-Waterman algorithm
6. Scoring matrices, BLOSUM, PAM
7. Gap penalties

**UNIT-III: Multiple Sequence Alignment****(4 hours)**

1. Local and Global Multiple Sequence Alignment
2. CLUSTALW, PILEUP and T-COFFEE
3. Iterative methods for Global sequence alignment
4. eMOTIF method for motif analysis
5. MEME and Hidden Markov Model.

**UNIT-IV: Phylogenetic analysis****(4 hours)**

1. PHYLIP and PAUP
2. Phylogenetic analysis thorough multiple sequence alignment
3. Genome complexity in Phylogenetic analysis
4. Evolutionary trees
5. methods of Phylogenetic prediction
6. Maximum parsimony method
7. Fitch and Margoliash method
8. Neighbor joining and related neighbor method
9. UPGMA method
10. Maximum likelihood approach.

**UNIT-V: Structure prediction and genome analysis****(4 hours)**

1. RNA secondary structure prediction through sequence and base pairing patterns,.
2. Suboptimal RNA structure prediction by mfold and energy plots
3. Gene prediction
4. Neural networks and pattern discrimination methods for eukaryotic gene prediction
5. Promoter prediction
6. Protein structure classification
7. Molecular viewers and prediction

8. Genome sequence assembling
9. Comparisons of orthologs, paralogs and proteoms with genome
10. Functional genomics.

#### **TEXTBOOKS**

1. Baxevanis Ouellette, Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins, 3rd Edition. Wiley Press (2010)
2. David W. Mount, Bioinformatics: Sequence and Genome Analysis, Cold Spring Harbor Laboratory Press, 1st edition, 2001.

C S U H P

## Practical course on Bioinformatics Tools

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 414

**Course Name:** Practical course on Bioinformatics Tools

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of Practicals / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to the basic as well as specialized tools of bioinformatics.
- Common tools for sequence analysis.
- Introduce basic tools in sequence analysis, genetics, proteomics and metabolomics.

**Attendance Requirement:**

Students are expected to attend all Practicals in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Practical records: 10%
  - b. Class Room Participation: 5%
  - c. Assignment: 10%

**Course Contents:**

**UNIT-I: Browsing sequences from biological databases (4 hours)**

1. Browsing sequences from NCBI, EBI and other biological databases
2. BLAST
3. Hands on practice on various types of BLAST

**UNIT-II: Sequence analysis (4 hours)**

1. Local and Global Multiple Sequence Alignment
2. CLUSTALW, PILEUP and T-COFFEE
3. Iterative methods for Global sequence alignment
4. Phylogenetic analysis thorough multiple sequence alignment

**UNIT-IV: Mapping and genetic analysis (4 hours)**

1. Introduction to Genetic, linkage and physical mapping
2. Linkage mapping using graphical genotyping (GGT 2.0)
3. Marker-Trait Association and Association plots
4. Calculation of Linkage Disequilibrium & Heat maps
5. Calculation of genetic distance

**UNIT-V: Structure prediction and analysis (4 hours)**

1. Introduction to protein data bank
2. Visualization of 3 dimensional structures using Pymol and Rasmol.
3. Structure prediction methods
4. Visualization and analysis of DNA-Protein, RNA-Protein and Protein-Protein complexes

**UNIT-V: Metabolomic analysis, Gene Ontology (4 hours)**

1. Introduction to metabolomics
2. Chemical profiling of <sup>1</sup>H NMR peaks
3. Processing of <sup>1</sup>H NMR peaks and Spin simulation
4. Batch spectra profiling of <sup>1</sup>H NMR peaks
5. Quantitative profile of NMR spectra
6. Browsing Ensembl Genome
7. Gene ontology and pathways
8. Biomart

## TEXTBOOKS

1. David W. Mount, Bioinformatics: Sequence and Genome Analysis, Cold Spring Harbor Laboratory Press, 1<sup>st</sup> edition, 2001.
2. Jo McEntyre and Jim Ostell : The NCBI Handbook, 1<sup>st</sup> ed. National Centre for Biotechnology Information. 2013

## ADDITIONAL RESOURCES

3. <http://blast.ncbi.nlm.nih.gov/Blast.cgi>
4. Febrer M, Goicoechea JL, Wright J, McKenzie N, Song X, Lin J, Collura K, Wissotski M, Yu Y, Ammiraju JS, Wolny E, Idziak D, Betekhtin A, Kudrna D, Hasterok R, Wing RA, Bevan MW. An integrated physical, genetic and cytogenetic map of *Brachypodium distachyon*, a model system for grass research. PLoS One. 2010 Oct 18;5(10)
5. [http://www.wageningenur.nl/upload\\_mm/7/c/9/5b95dcc0-6ca1-4971-9844-8b7a9d6bb7e3\\_ggt2\\_manual.pdf](http://www.wageningenur.nl/upload_mm/7/c/9/5b95dcc0-6ca1-4971-9844-8b7a9d6bb7e3_ggt2_manual.pdf)
6. <http://www.pymol.org/>
7. <http://rasmol.org/>
8. Wolfender JL, Rudaz S, Choi YH, Kim HK. Plant metabolomics: from holistic data to relevant biomarkers. Curr Med Chem. 2013;20 (8):1056-90.
9. Wu H, Southam AD, Hines A, Viant MR. High-throughput tissue extraction protocol for NMR- and MS-based metabolomics. Anal Biochem.
10. <http://asia.ensembl.org/index.html>
11. <http://www.geneontology.org/>

## Concepts in Molecular Biology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 419

**Course Name:** Concepts in Molecular Biology

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to the fundamentals of replication, transcription and translation.
- Study of regulation of central dogma of life at molecular level

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Assignments : 10%
  - b. Class Test: 5%
  - c. Presentation : 10%

**Course Contents:**

**UNIT-I: Introduction to Macromolecules**

**(4 hours)**

1. Nucleic acid and its role in genetic information
2. Importance of weak and strong chemical bonds
3. DNA structure
4. Structure and types of RNA
5. Protein and protein structure

**UNIT-II: Genome maintenance**

**(4 hours)**

1. Genome Structure, chromatin and nucleosome
2. DNA replication
3. DNA repair and mutation
4. Homologous recombination
5. Site specific recombination and DNA transposition

**UNIT-III: Genome Expression**

**(4 hours)**

1. Mechanism of transcription
2. RNA splicing and processing
3. mRNA stability and localization
4. catalytic RNA
5. Translation
6. Genetic code
7. Origin and evolution of life

**UNIT-IV: Regulation**

**(4 hours)**

1. Transcriptional regulation in prokaryotes and Eukaryotes
2. Regulatory RNAs
3. Gene regulation in development and evolution
4. Systems biology

**UNIT-V: Recombinant DNA Technology**

**(4 hours)**

1. The fragmentation, separation and sequencing of DNA molecules
2. Nucleic acid hybridization
3. DNA cloning
4. DNA engineering

**TEXTBOOKS**

1. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter: Molecular Biology of the Cell, Garland Sciences, 4<sup>th</sup> edition, 2002.
2. James D. Watson, Molecular Biology of the Gene, Cold Spring Harbor Laboratory Press, 7<sup>th</sup> edition, 2013.
3. Jocelyn E. Krebs, Elliott S. Goldstein, Stephen T. Kilpatrick: Lewin's Genes X, Jones and Bartlett publishers, 10<sup>th</sup> Edition, 2011.

## Cell biology and genetics

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 420

**Course Name:** Cell biology and genetics

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to the steps and key elements of foundation of life.
- To study the regulatory elements in cellular biology.
- Fundamentals of life at cellular level

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Assignment: 10%
  - b. Class Test: 5%
  - c. Presentation: 10%



**Course Contents:**

**UNIT-I: fundamentals of Genetics**

**(8 hours)**

1. Mendelian genetics
2. Genetic material: properties and replication
3. Structure and replication of eukaryotic chromosomes
4. Linkage crossing over and chromosome mapping
5. Transposable genetic elements
6. Gene expression
7. Mutation
8. Recombination

**UNIT-II: Change, Structure and function of genetic material**

**(8 hours)**

1. Genetic fine structure
2. Chromosome number variation
3. Gene regulation and manipulation
4. Gene frequencies and equilibrium
5. Inbreeding and heterosis
6. Speciation and evolution

**UNIT-III: Cell structure and function**

**(8 hours)**

1. Visualizing, fractionating and culturing cells.
2. Biomembrane structure
3. Transmembrane transport of ions and small molecules
4. Cellular energetics
5. Moving proteins into membranes and organelles
6. Vesicular traffic, secretion and endocytosis
7. Cell signaling
8. Cell organization and movement
9. Integrating cells into tissues

**UNIT-IV: Cell growth and development****(8 hours)**

1. The cell division cycle
2. Mechanics of cell division cycle
3. Regulating the eukaryotic cell cycle
4. Cell birth, lineage and death
5. Germ cells and fertilization
6. The molecular cell biology of development

**UNIT-V: Advances in genetics and cell biology****(8 hours)**

1. Developmental genetics
2. Population genetics
3. Quantitative genetics
4. Evolutionary genetics
5. Genetics of behavior
6. Genetic engineering and the future
7. Nerve cells
8. cellular immunology
9. Cancer

**TEXTBOOKS**

1. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter: Molecular Biology of the Cell, Garland Sciences, 4<sup>th</sup> edition, 2002.
2. Eldon J. Gardner, Michael J. Simmons, D. Peter Snustad: Principles of genetics, Wiley India Pvt. Ltd., 8<sup>th</sup> edition 2011.
3. Harvey Lodish, Arnold Berk, Chris A. Kaiser, Monty Krieger, Matthew P. Scott, Anthony Bretscher, Hidde Ploegh: Molecular Cell Biology, W.H. Freeman and Company, 6<sup>th</sup> edition 2008.

**ADDITIONAL READINGS**

4. Monroe E. Strickberger (2008) Genetics. Phi Learning

## Basic of Plant Biotechnology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 425

**Course Name:** Basic of Plant Biotechnology

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to the basic principles of modern plant biology and its environmental impact.
- Fundamentals of plant genetic improvement
- Fundamentals of plant genetic manipulation and public concerns about genetically modified crops

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Assignment: 10%
  - b. Class Test: 5%
  - c. Presentation: 10%

**Course Contents:**

**UNIT –I: Plant genome**

**(4 Hours)**

1. Organization and expression of genes
2. Regulation of gene expression
3. Implications of plant transformation
4. Genome size and organization

**UNIT -II: Plant Tissue culture**

**(4 Hours)**

1. Plant tissue culture.
2. Culture types
3. Plant regeneration
4. Plant tissue culture and plant transformation

**UNIT -III: Plant Transformation**

**(4 Hours)**

1. Techniques for plant transformation
2. Vectors for plant transformation
3. Basic features of plant vectors
4. Clean gene technology

**UNIT-IV: Plant disease resistance and Stress tolerance**

**(5 Hours)**

1. Genetic manipulation of herbicide tolerance
2. Genetic manipulation of pest resistance
3. Plant disease resistance
4. Reducing the effects of viral disease
5. Strategies to reduce stress tolerance

**UNIT- V: Crop Improvement and GM crops**

**(3 Hours)**

1. Improvement of crop yield and quality
2. Molecular farming
3. Genetically modified food and public acceptability

**Prescribed Text Books:**

1. Adrian Slater, Nigel W. Scott, and Mark R. Fowler Plant (2008) Biotechnology: The Genetic Manipulation of Plants. Second edition. Oxford University Press

## Genomics and Proteomics

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 504

**Course Name:** Genomics and Proteomics

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce students to the steps and key elements of the Sequence Analysis in biology.
- Utilization and application of genomics and association of genotype with phenotype.
- Hands-on- training in basic tools of genomics and their applications
- Study to understand proteome function, its quantification and understanding individual proteins and interacting partners including account of protein modifications.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Presentation: 10%
  - b. Class Participation: 10%
  - c. Attendance: 5%

**Course Contents:**

**UNIT-I: Introduction to Genomics**

**(8 hours)**

- Genes and Proteins
- Genome sequencing and databases

- Gene variation and Single Nucleotide Polymorphisms
- Expressed sequenced tags

**UNIT-II: Advances in Genomics**

**(8 hours)**

- Genotype-phenotype associations
- Genotyping tools
- Comparative genomics
- Functional genomics

**UNIT-III: Genome analysis**

**(8 hours)**

- Genetic and physical maps
- Methods of molecular mapping
- Bioinformatics analysis of genomes
- Applications of genomics

**UNIT-IV: Introduction to Proteomics**

**(8 hours)**

- Introduction to proteins: structure and function
- Methods of protein isolation, purification, quantification
- Proteomics databases
- Proteome & Interactome: Bacterial and Yeast two hybrid
- Proteome & Interactome: Phage Display

**UNIT-V: Proteome analysis**

**(8 hours)**

- Mass-spec based analysis
- High throughput proteome analysis: Qualitative & Quantitative
- Applications of proteome analysis
- Structural Proteomics

### Text Books

1. Daniel Liebler, Introduction to Proteomics: Tools for the new Biology, 2012
2. Sandy B. Primrose, Richard Twyman. Principle of gene manipulation and genomics, 7<sup>th</sup> edition. 2006.
3. Introduction to Protein Structure by Carl-Ivar Branden, John Tooze

### Additional Readings

4. Ehebauer MT, Wilmanns M. The progress made in determining the *Mycobacterium tuberculosis* structural proteome. Proteomics. 2011 Aug; 11(15): 3128-33.
5. Chim N, Habel JE, Johnston JM, Krieger I, Miallau L, Sankaranarayanan R, Morse RP, Bruning J, Swanson S, Kim H, Kim CY, Li H, Bulloch EM, Payne RJ, Manos-Turvey A, Hung LW, Baker EN, Lott JS, James MN, Terwilliger TC, Eisenberg DS, Sacchettini JC, Goulding CW. The TB Structural Genomics Consortium: a decade of progress. Tuberculosis (Edinb). 2011 Mar; 91(2):155-72.
6. Biochemistry and Molecular Biology, 7<sup>th</sup> edition, Keith Wilson and John Walker
7. Francki M, Appels R. Wheat functional genomics and engineering crop improvement. Genome Biol. 2002; 3(5).
8. Kaur S, Francki MG, Forster JW. Identification, characterization and interpretation of single-nucleotide sequence variation in allopolyploid crop species. Plant Biotechnol J. 2012 Feb;10(2): 125-38.
9. Nagaraj SH, Gasser RB, Ranganathan S. A hitchhiker's guide to expressed sequence tag (EST) analysis. Brief Bioinform. 2007 Jan;8(1): 6-21.

## Data Mining and Knowledge Discovery

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 509

**Course Name:** Data Mining and Knowledge Discovery

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- Introduction to data mining and Knowledge discovery.
- Familiarity with core and advanced topics in data mining and their application in biological research.
- To provide students with basic knowledge of biological data bases and utilization of publically available and specialized databases for data mining and knowledge discovery

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - i. Assignment: 5%
  - ii. Surprise Test: 5%
  - iii. Mini Project: 10%
  - iv. Presentations: 5%



**Course Content:**

**UNIT - I: Introduction to data mining (8 Hours)**

1. Basic data mining tasks and KDD Process.
2. Data mining versus knowledge discovery in databases
3. Issues of data mining, metrics, social implications.
4. Fuzzy sets and logic.
5. Information retrieval and decision support system.
6. Dimensional modeling.
7. OLTP
8. Data warehousing and OLAP.
9. Machine learning & data mining techniques

**UNIT - II: Data preprocessing and data warehouses (8 Hours)**

1. Data pre-processing
2. Data cleaning
3. Data integration and Transformation.
4. Data reduction, Data Discretization and concept hierarchy generation
5. Data warehouse
6. Multidimensional data model
7. Data warehouse architecture
8. OLAP and Types of OLAP servers
9. Data warehouse implementation
10. Data warehousing in data mining

**UNIT - III: Core and advance topics in data mining (8 Hours)**

1. Data cube computation and data generalization
2. Data classification and prediction
3. Decision trees
4. Neural networks
5. Mining frequent patterns, associations and correlations.
6. Cluster analysis.
7. Mining stream, Time series and sequence data.
8. Fundamentals of web mining, graph mining
9. Multi-relational data mining
10. spatial mining
11. multimedia data mining
12. Text mining
13. Temporal mining
14. Applications and trends in data mining.

**UNIT - IV: Data mining from biological databases (8 Hours)**

1. The biological data bases
2. Ensembl and Ensembl Genomes
3. European Nucleotide Archive and European Genome-Phenome Archive
4. PRIDE: The proteomics identifications databases and PDB
5. ArrayExpress Archive for functional genomics data
6. MetaboLights: Metabolomics archive and reference databases.
7. Reactome pathways database
8. Systems biology Ontologies.
9. PubMed: The bibliographic database
10. Macromolecular structure databases
11. Taxonomy project
12. dbSNP and Gene Expression Omnibus (GEO)
13. Online mendelian inheritance in Man (OMIM)
14. SKY/CGH database for special Karyotyping and Comparative Genomic Hybridization data
15. dbMHC.

**UNIT - V: Internet: Basic features, Tools, protocols & Services (8 Hours)**

1. Sequin: A sequence submission and editing tool.
2. Processing of sequence data at NCBI.
3. Genome assembly and Annotation process
4. The Entrez search and retrieval system
5. LinkOut: Linking to external resources from Entrez databases
6. RefSeq, Gene: A directory of Gene
7. Using the map viewer to explore genomes
8. UniGene
9. The clusters of orthologous Groups (COGs) databases

**Prescribed Text Books:**

1. Jiawei Han and Micheline Kamber: Data Mining: Concept and Techniques, 2<sup>nd</sup> ed. Elsevier 2011
2. Margaret Dunham: Data Mining: Introductory and Advanced Topics, 1<sup>st</sup> ed. Pearson Education. 2010.
3. Pieter Adriaans and Dolf Zantinge: Data Mining, 4<sup>th</sup> ed. Pearson Education. 2009

**Additional readings:**

4. Jo McEntyre and Jim Ostell : The NCBI Handbook, 1<sup>st</sup> ed. National Centre for Biotechnology Information. 2013
5. <http://www.ebi.ac.uk/training/online/>

## Mathematics in Biology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CBB 401

**Course Name:** Mathematics in Biology

**Credits Equivalent:** 2 Credits

(One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to acquaint students with selected fundamental concepts of mathematics and their applications in the study of Biological systems. In this course more emphasis will be given to those parts of calculus that are of prime concern to the life scientists for modeling the Biological systems and Ecosystems amongst others.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Attendance – 5%,
  - Class Participation 5%,
  - Class test – 5%,
  - Assignment – 10%

**Course Contents****UNIT I: Numbers and Functions****(4 Hours)**

- Number System: Natural numbers, Real numbers and Real line
- Understanding slopes and shifting graphs of
  - Linear, Polynomials and Trigonometric functions
  - Transcendental functions, log-log and semi-log plots
- 2D and 3D coordinate geometry

**UNIT II: Derivatives and Integrals****(4 hours)**

- Rates of change, limits and continuity
- Derivative of a function and differentiation rules
- Maxima and minima, Partial derivatives
- Indefinite integrals
- Definite integrals

**UNIT III: Differential and Difference Equations****(5 Hours)**

- Separable equations
- First and second order differential equations
- Systems of differential equations and Initial Value Problems
- Discrete time models
- First and second order difference equations

**UNIT IV: Discrete Mathematics****(3 Hours)**

- Sequences and Series
- Permutations
- Combinations

**UNIT V: Vectors and Matrices****(4 Hours)**

- Addition, Subtraction and multiplication of Vectors and Matrices
- Finding inverse of a matrix, Solving a set of Linear equations
- Eigen values and Eigen vectors
- Orthogonality and Singular value decomposition

**Text Books:**

1. **Thomas and Finney (2005)**, Calculus. Pearson, New Delhi.
2. **David C. Lay (2007)**, Linear Algebra, Pearson education, New Delhi
3. **Richard Bronson (2011)**, Schaum's Outlines: Differential Equations, TMH, New Delhi.

**Additional Readings:**

4. **David J Hunter (2010)**, Essentials of Discrete Mathematics. Jones and Bartlett, New Delhi.
5. **Hall and Knight (2001)**, Higher Algebra, Adament Media Publishers.
6. **Earl A. Coddington (2012)**, An introduction to Ordinary Differential Equations. PHI, New Delhi
7. **Lipschutz and Lipson (2009)**, Schaum's Outline of Discrete Mathematicss, TMH, New Delhi

## Algorithms in Computational Biology

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**Course Code: CBB 501**

**Course Name: Algorithms in Computational Biology**

**Credits Equivalent: 4 Credits**

(One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to introduce students the algorithmic principles, central to the studies in Computational Biology and Bioinformatics. Concepts from computer science like dynamic programming and graph theory will enable students to understand a variety of concepts that are used in the theoretical studies of life sciences and expose them to the underlying mechanisms of widely used softwares. Students, who are familiar with at least one programming language, will be encouraged to write their own codes for various algorithms discussed in this course.

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Class Participation – 5%
  - Assignments – 10%
  - Course project – 10%

## Course Contents

### Unit 1: Introduction to algorithms and complexity

8 Hours

1. Basic Concepts: efficiency, analysis and order of an algorithm. Biological vs. Computer algorithms
2. Standard Notations: Big-O notation, NP-hard problems.  
Few examples: Sorting, Finding optimal change, Traveling salesman problem etc.
3. Introduction to algorithm design techniques: Exhaustive search, Greedy Algorithms, Divide and conquer etc.
4. Motif finding problem: Brute force algorithm, Greedy algorithm

### Unit 2: Dynamic Programming and Finite State Machines

8 Hours

1. Elements of Dynamic Programming: Edit distance, Longest Common Subsequences.
2. Global and Local Sequence Alignment
3. Markov Chains and Hidden Markov Models
4. Pairwise alignment using HMMs

### Unit 3: Pattern matching, trees and clustering

8 Hours

1. Introduction to hash table, keyword tree, suffix tree
2. Ukkonen's linear time suffix tree algorithm
3. Constant time lowest common ancestor retrieval
4. Hierarchical and k-means clustering
5. Evolutionary trees: distance based construction
6. Evolutionary trees: character based construction

### Unit 4: Genetic Algorithms

8 Hours

1. Elements of genetic algorithms
2. Cellular automata
3. Systems modeling using genetic algorithms: examples from biological and ecosystems
4. Implementing a genetic algorithm

## Unit 5: Graph Theory and Network Biology

8 Hours

1. Elementary graph algorithms: Breadth-first search, Depth-first search, Topological sort, Strongly connected components.  
Growing a minimum spanning tree.
2. Sequencing by hybridization: Hamiltonian path vs. Eulerian path
3. Finding shortest path: Single source shortest path, All pairs shortest paths
4. Models of Biological Networks: Random, Small-world, Scale-free

### Text Books:

1. **Jones and Pevzner (2004)**, An Introduction to Bioinformatics Algorithms. MIT Press.
2. **Mitchell (1998)**, An Introduction to Genetic Algorithms. MIT Press.
3. **Cormen *et al.* (2009)**, Introduction to Algorithms. MIT Press.

### Additional Readings:

4. **Gusfield (2005)**, Algorithms on Strings, Trees and Sequences. Cambridge University Press.
5. **Durbin *et al.* (1998)**, Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids. Cambridge University Press
6. **Sung (2009)**, Algorithms in Bioinformatics: A Practical Introduction. Chapman & Hall/CRC.
7. **Neapolitan and Naimipour (2011)**, Foundations of Algorithms. Jones & bartlett.
8. **Korf *et al.* (2003)**, BLAST. O'Reilly
9. **Junker and Schreiber (2008)**, Analysis of Biological Networks. Wiley-Interscience, New Jersey.



## Elements of Systems Biology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code: CBB 518**

**Course Name: Elements of Systems Biology**

**Credits Equivalent: 4 Credits**

(One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** This course will be centered on (i) the theoretical and practical aspects of modelling in systems biology – both deterministic and stochastic and (ii) the study of biological networks. Students will become acquainted with the key concepts and computational approaches of both these fields.

“Systems Biology” finds its major application in the research field known as “Synthetic Biology” (aiming to design and realize modified or new biological parts). Students will also become familiar with necessary mathematical and computational concepts of Synthetic Biology.

Students having prior knowledge of any programming language will be encouraged to write their own codes for simulating and analysing model biological systems.

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Class Participation 5%
  - Class Test 5%
  - Presentation and Assignment 15%

### **Course Contents**

#### **Unit 1: Introductory Interdisciplinary Concepts (10 hours)**

- Definition and scope of Systems biology and Synthetic biology.
- Introduction to biological complexity -- Self organization, Emergence, Chaos, Robustness.
- First-order systems: fixed points and stability, population growth. bifurcations.
- Second-order systems: phase portraits, fixed points and linearization. attractors and limit cycles. Hopf bifurcations.
- Software: XPPAut

#### **Unit 2: Deterministic Modelling in Systems Biology (10 hours)**

- Chemical Kinetics, Michaelis-Menten Kinetics, Hill equations.
- Deterministic Methods of systems modelling (Euler and RK4)
- Modelling positive and negative feedback.
  - Examples from natural systems: Predator-Prey, Circadian Rhythms, p53-mdm2.
  - Examples from synthetic systems: Brusselator, Repressilator.

### Unit 3: Stochastic Modelling in Systems Biology

(8 hours)

- Introduction to noise in biological systems. Intrinsic vs. extrinsic noise. System behaviour and role of noise.
- Stochastic Methods for modelling biological systems (Master equation, Gillespie's stochastic simulation algorithm)
- Phage lambda and toggle switch
- SBML, SBGN and open source programs: Copasi, CellDesigner, StochSim, BioNets, etc.

### Unit 4: Design principles of Biological Networks

(6 hours)

- Introduction to Networks. Basic terminology
- Random networks: Erdős-Renyi model, Watts-Strogatz model.
- Scale-free networks, Modular and hierarchical networks.
- Dynamics on networks.
- Topology of genetic, metabolic, social, ecological and language networks.
- Flux balance analysis.

### UNIT 5: Analysis of Biological Networks

(6 Hours)

- Global Properties: average path length, network diameter, centrality measures, clustering coefficients etc.
- Local Properties: regulatory motifs and graphlets in networks.
- Motifs in TRNs: discussion on FFL, SIM and other motifs.
- Network Clustering: clique based clustering, center based clustering
- Petri Nets
- Softwares: Pajek, Cytoscape, Mfinder, Graphviz etc.

#### Text Books:

1. **Steven H. Strogatz (1994)**, Nonlinear Dynamics and Chaos: With Applications to Physics, Biology, Chemistry, and Engineering. Perseus Books, Massachusetts.
2. **Szallasi *et al.* (2010)**, System Modelling in Cellular Biology. MIT Press.
3. **Junker and Schreiber (2008)**, Analysis of Biological Networks. Wiley-Interscience, New Jersey.

**Additional Readings:**

1. **Uri Alon (2006)**, An Introduction to the Systems Biology. Chapman and Hall.
2. **Mark Newman (2010)**, Networks: An Introduction. Oxford University Press.
3. **Klipp *et al.* (2009)**, Systems Biology in Practice. Wiley-VCH.
4. **BO Palsson (2006)**, Systems Biology. Cambridge University Press.
5. **Press *et al.* (2007)**, Numerical Recipes in C. Cambridge University Press.

CUHP

**School of Mathematics, Computers & Information Science**

## Department of Mathematics

### School of Mathematics, Computers & Information Science

Name of the Department: **Department of Mathematics**

Name of the Programme of Study: **MSc Mathematics with specialisation in Industrial Mathematics**

#### Courses for Semester 2

Sr. No.	Course code	Course name	Credits	Code no. Of pre-requisite/ co-requisites if any	Teacher
1	MTH 404	Abstract algebra	4	NA	Dr. Ravinder singh
2	MTH 406	Real analysis	4	NA	Dr. S. K. Srivastava
3	IAM 404	Mathematical methods	4	NA	Dr. Rakesh kumar
4	IAM 403	Numerical analysis	4	NA	Dr. Rakesh kumar
5	SAS 407	Probability and statistics	4	NA	Dr. S. K. Srivastava

#### Courses for Semester 4

Sr. No.	Course code	Course name	Credits	Code no. Of pre-requisite/ co-requisites if any	Teacher
1	IAM 407	Differential geometry	4	MTH 403	Dr. S. K. Srivastava
2	IAM 501	Functional analysis	4	MTH 406	Dr. Ravinder singh
3	MTH 503	Discrete mathematics	4	NA	Dr. Rakesh kumar
4	MTH 509	Financial mathematics	4	NA	Dr. Ravinder singh
5	MTH 510	Number theory	4	NA	Dr. Ravinder singh

#### University Wide Courses

Sr. No.	Course code	Course name	Credits	Code no. Of pre-requisite/ co-requisites if any	Teacher
1	IAM 403	Numerical analysis	4	NA	Dr. Rakesh kumar
4	SAS 407	Probability and statistics	4	NA	Dr. S. K. Srivastava
3	MTH 509	Financial mathematics: the mathematics of money	4	NA	Dr. Ravinder singh

## Real Analysis

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**Course Code:** MTH 406

**Course Name:** Real Analysis

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objective:** The purpose of this course is to acquaint the students with the essentials of mathematical analysis to read and write rigorous mathematical proofs.

**Attendance Requirement:** Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must, failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - iii) Class tests 5%

**Course Contents:**

**Unit-I: Real and complex number systems, Basic Topology (10 hours)**

1. Ordered sets, Fields, The Real field and Complex field.
2. Euclidean spaces, Countable and Uncountable sets.
3. Metric spaces
4. Compact sets

**Unit-II: Sequence, Series and Continuity (10 hours)**

1. Sequence, subsequence, Convergent sequence, upper and lower limits.
2. Series of non-negative terms, the root and ratio test.
3. Power series and Summation by parts.
4. Absolute convergence and Rearrangement.
5. Continuity and compactness, monotonic functions.

**Unit-III: Differentiation & R-S Integral (10 hours)**

1. Differentiation of a Real valued functions
2. Mean value theorem
3. Differentiation of Vector valued functions
4. L. Hospital Rule, Taylor's Theorem and Derivatives of Higher order.
5. Riemann- Stieltjes Integral.

**Unit-IV: Sequence, Series of Functions and Functions of several Variables (12 hours)**

1. Uniform Convergence.
2. Equicontinuous Families of Functions
3. The Stone-Weierstrass Theorem.
4. Differentiations of a Function of Several Real Variables and the Contraction Principle.
5. The Inverse Function Theorem, the Implicit Function Theorem.

**Prescribed Text Book:**

- Rudin, Walter, "Principles of Mathematical Analysis", 3<sup>rd</sup> Edition, McGraw Hill.

**Suggested Additional Reading:**

1. G.F. Simmons, "Topology and Modern Analysis", 1<sup>st</sup> Edition, McGraw Hill.
2. Russell A. Gordon, "Real Analysis: A First Course", Addison-Wesley Higher Mathematics Series.



## Differential geometry

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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**Course Code:** IAM 407

**Course Name:** Differential geometry

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity /contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The purpose of this course is to acquaint the students with the Differential geometry which is closely related to differential topology, and to the geometric aspects of the theory of differential equations and uses the techniques of differential calculus and integral calculus, as well as linear algebra and multilinear algebra, to study problems in geometry.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of

75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - iii) Class tests 5%

**Course Contents:**

**Unit I: General Tensor calculus and SRE (10 hours)**

1. Tensor and their Algebra
2. Riemannian space and Metric Tensor
3. Geodesic frame and Christoffel Symbols
4. Special Relativity Electrodynamics (SRE)

**Unit II: Covariant differentiation, General Theory of Relativity and Cosmology (12 hours)**

1. Covariant derivative of tensors of order  $\geq 1$
2. Divergence, Riemannian curvature tensor and Einstein tensor
3. Metric in a gravitational field and Schwarzschild's solution
4. Cosmological Principle and Robertson-Walker metric

**Unit III: Curves in space (8 hours)**

1. Length of a curve, Tangent to a curve
2. Osculating Plane, Curvature, Torsion
3. Frenet Formulas, Intrinsic equations of a curve
4. Involutives and evolutes of a curve, Developable surfaces. Eisenhart Chapter I

**Unit IV: Intrinsic geometry of a surface and surfaces in space (11 hours)**

1. Linear element of a surface, Principal directions and Isometric surfaces,
2. Gaussian curvature, Geodesic and Geodesic curvature
3. Second fundamental form, Gauss and Codazzi equation
4. Normal curvature, Lines of curvature and Minimal Surfaces

**Prescribed Text Books:**

1. L. P. Eisenhart, An introduction to differential geometry with use of the tensor calculus, Princeton University Press.
2. Zafar Ahsan, Tensor Analysis with applications, Anamaya Publishers, New Delhi.
3. D. F. Lawden, Introduction to Tensor calculus, Relativity and Cosmology, Dover Publication, Inc.

**Suggested Additional Readings:**

1. J. A. Thorpe, Elementary topics in Differential geometry, Springer.
2. Michael Spivak: A Comprehensive Introduction to Differential geometry vol 2, Publish OR Perish, Inc.
3. Sean M. Carroll: Spacetime and geometry: An introduction to general relativity, Addison Wesley.
4. S. Kobayashi & K. Nomizu: Foundations of differential geometry vol- I.
5. M. DoCarmo: Differential geometry of curves and surfaces, PHI, New Delhi.
6. M. M. Lipschutz: Theory and problems of Differential geometry, McGraw-Hill.

## Probability and Statistics

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** SAS 407

**Course Name:** Probability and Statistics

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objective:** The purpose of this course is to acquaint the students with the fundamentals of mathematical statistics to understand the role of Probability and Statistics in analysing and solving problems in real world.

**Attendance Requirement:** Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must, failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - iii) Class tests 5%

#### **Course Contents:**

##### **Unit-I: Theory of Probability (10 hours)**

Mathematical or Classical Definition of Probability, Limitation of Mathematical Probability, Statistical or Empirical Definition of Probability and its Limitations, Algebra of Sets, Limits of Sequence of Sets, Classes of Sets, Axiomatic Approach to Probability, Basic Theorems on Probability, Conditional Probability, Independence of Events, Pairwise Independence, Mutual Independence, Extended Axiom of Addition and Continuity. Bayes Theorem.

**Unit-II: Random Variables, Distribution functions and Mathematical Expectation (10 hours)**

Random Variables, Distribution Function of Random Variable and its properties, Discrete Random Variable, Probability Mass Function. Continuous Random Variable, Probability Density Function. Two Dimensional Random Variables, Joint Probability Mass Function, Two Dimensional Distribution Function, Marginal Distribution Functions, Joint Density Function, Marginal Density Function, Conditional Density Function and Generalisation to n dimensions, Mathematical Expectation of a Random Variable and its important Properties, Variance and Covariance.

**Unit-III: MGF, Discrete and Continuous Distribution (10 hours)**

Moment Generating Function, Characteristic Function, Chebyshev's Inequality, Convergence in Probability, Weak Law of large Numbers, Borel-Cantelli Lemma, Special Discrete Distributions and Special Continuous Distribution

**Unit-IV: Sampling and Exact Sampling Distribution (10 hours)**

Introduction to Large Sample Theory, Types of Sampling, Parameter and Statistic, Test of Significances, Procedure for Testing of Hypothesis, Sampling of Attributes and Variables, Exact Sampling Distributions.

**Prescribed Text Book:**

- S.C Gupta and V.K. Kapoor. "Fundamentals of Mathematical Statistics", S. Chand & Sons.

**Suggested Additional Reading:**

- Hogg and Craig, "Introduction to Mathematical Statistics" McGraw Hill.

## Numerical Analysis

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**Course Code: IAM 403**

**Credits: 04**

**Course Name: Numerical Analysis**

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity /contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The purpose of this course is to acquaint the students with the Numerical analysis which is necessary to develop the basic understanding of numerical algorithm for solving problems in Science, Engineering and Technology.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Subjective / Objective Assignment: 10 %
  - ii. Numerical Assignments using programming: 10 %
  - iii. Presentations and Class Tests: 5 %

**Course Contents:**

**Unit I: MATLAB Fundamentals:** The MATLAB environment, assignment, mathematical operations, use of built-in functions, graphics, M-files; Errors in numerical calculations; Bisection method; Method of False position, Newton-Raphson Method; Linear system of algebraic equation: Direct Method, Gauss Elimination Method, Gauss-Jordan Method, inverse of a matrix by Gauss-Jordan Method, Gauss-Jacobi and Gauss-Seidel Iteration Method.

**[12 Hours]**

**Unit II: Finite Differences and Interpolation:** Newton-Forward difference interpolation formula, Newton-Backward difference interpolation formula, Newton-Divided difference interpolation formula, Lagranges, Gauss, Stirling and Laplace-Everett's Interpolation formula with their applications, and Spline interpolation and Cubic Spline.

**[10 Hours]**

**Unit III: Numerical Differentiation and Integration:** Numerical Differentiation based on finite differences, Numerical Integration based on Uniform Mesh spacing and non- Uniform Mesh

spacing, Evaluation of double integral using Trapezium and Simpson's rule.

[10 Hours]

**Unit IV:** Initial value problems for ordinary differential equations: Taylor's series Method, Euler and modified Euler Method, Runge-Kutta Methods, Predictor-Corrector Methods, finite-difference method, cubic spline method, shooting method.

[8 Hours]

**Prescribed Text Books:**

1. M.K. Jain, S. R. K. Iyengar and R. K. Jain: Numerical Methods, New Age International (P) Limited, Publishers, New Delhi.
2. S. S. Sastri; Introductory Methods of Numerical Analysis, PHI Learning Pvt. Ltd., 2005.
3. S.C. Chapra: Applied Numerical Methods with MATLAB, McGraw Hill, 2012.

**Suggested Additional Readings:**

1. G Shanker Rao; Numerical Analysis, New Age International, 2006.
2. David (David Ronald) Kincaid, E. Elliott Ward Cheney; Numerical Analysis (Mathematics of Scientific Computing), American Mathematical Soc., 2002.
3. Rainer Kress; Numerical analysis, Springer, 1998.
4. Richard L. Burden, John Douglas Faires; Numerical Analysis, Cengage Learning, 2005.

## Mathematical Methods

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**Course Code: IAM 404**

**Credits: 04**

**Course Name: Mathematical Methods**

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The purpose of this course is to acquaint the students with mathematical methods and enable them to solve the problems in the fields of physical, medical and information sciences; and in industry.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Subjective / Objective Assignment: 10 %
  - ii. Numerical Assignments using programming: 10 %
  - iii. Presentations and Class Tests: 5 %

**Course Contents:**

**Unit I:** Fourier series: Fourier series of functions with periodicity  $2\pi$ ; convergence of Fourier series; Fourier series of functions of any period; Fourier series of non-periodic functions in limited ranges; complex Fourier series; Parseval's theorem; sums of reciprocal powers of integers; integration of Fourier series; differentiation of Fourier series; Fourier series and differential equations.

**(08 Hours)**

**Unit II:** Fourier Transforms: Fourier integral as a limit of a Fourier series; symmetry, linearity, shifting, and scaling properties; transform of derivatives; transforms of integrals; Parseval's theorem; Fourier transform and Delta function; convolution; Fourier transforms and differential equations; Green's function: Abel's formula; construction of Green's function; inhomogeneous boundary conditions; eigen value problems; Dirac-Delta function; time dependent Green's function;

**(12 Hours)**

**Unit III:** Integral equations: classification; conversion from differential equations to integral equations and conversely; solution of integral equations- method of successive iteration, Neumann series, solution for the case of separable Kernels; Fourier and Laplace transform methods; integral equations and eigen value problems.

**(10 Hours)**

**Unit IV:** Variational Methods: Euler Lagrange equations; constrained variation; functional with higher derivatives, several dependent variables and several independent variables; variational formulation of Sturm Liouville problems; variational calculations of eigen values and eigenfunctions; Rayleigh-Ritz method ; weighted residual method.

**(10Hours)**

**Prescribed Text Books:**

1. S. Selcuk Bayin, (2011). Mathematical methods in science and engineering, Wiley India Pvt. Ltd.
2. K.T. Tang (2007).Mathematical Methods for Engineers and scientists 3, Springer.

**Suggested Additional Readings:**

1. F.G. Tricomi, (1985). Integral Equations. Cambridge University Press.
2. J.W. Brown and R.V. Churchill (1981). Fourier Series and Boundary Value Problems. McGraw Hill Inc.
3. I.M. Gelfand and S.V. Fomin (1963). Calculus of Variations. Prentice Hall Inc.



## Discrete Mathematics

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code: MTH 503**

**Credits: 04**

**Course Name: Discrete Mathematics**

**Credits Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** The purpose of this course is to acquaint the students with the basics of discrete mathematics with graph theory.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Subjective / Objective Assignment: 10 %
  - ii. Numerical Assignments using programming: 10 %
  - iii. Presentations and Class Tests: 5 %

**Course Contents:**

**Unit I:** Mathematical logic: Statements and Propositions, Laws of logic, Connectives, Tautology, The duality principle, Logical equivalence, Predicate calculus, Well formed formulas, theory of inference for statement calculus, Normal forms, Quantifiers, Relations, matrix representation of

relations, partial order relations, minimal and maximal elements, recurrence relations and their solutions. **(10 Hours)**

**Unit II:** Lattices, some properties of lattices, sub-lattices, some special lattices, Boolean algebra, sub-Boolean algebra, Boolean functions and expressions, representation and minimization of Boolean functions, logic gates.

**(10 Hours)**

**Unit III:** Graph theory: basic definitions, order and degree of a graph, vertices and edges, matrix representation of graphs, diagraphs, relations and diagraphs, walks, paths and circuits, sub-graphs, chromatic polynomials, planer graphs, Graph coloring, isomorphism.

**(10 Hours)**

**Unit IV:** Trees: some properties of trees, rooted trees, path lengths in rooted trees, binary trees, spanning trees, minimum spanning trees, Kruskal's algorithm, Prim's algorithm, arborescence, Warshall's algorithm, Transport networks.

**(10 Hours)**

**Prescribed Text Books:**

1. CL. Liu and DP. Mohapatra, (2012) Elements of Discrete Mathematics. 4<sup>th</sup> Edition, Tata McGraw Hill Education
2. G. Shanker Rao, (2009) Discrete Mathematical structures. New Age International (p) Limited, Publishers

**Suggested Additional Readings:**

1. J. Matousek and J. Nešetřil (2005). Invitation to Discrete Mathematics. Oxford University Press.
2. G. Edgar and PM. Michael (2003). Discrete Mathematics with Graph Theory. Prentice Hall.

## Algebra

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** MTH-404

**Course Name:** Algebra

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must, failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - iii) Class tests 5%

**Course Contents:**

**Unit-I:**

Laws of Composition, Basic Axioms of Group, Examples: Dihedral Groups, Symmetric Groups, Matrix Groups, The Quaternion Group. Subgroups and Examples of Subgroups, Centralizers, Normalizers of Groups. **[10 Lectures]**

**Unit-II:**

Cyclic Groups and Cyclic Subgroups, Subgroups generated by Subsets of a Group, Homomorphisms, Isomorphisms, Cosets, The Correspondence Theorem, Product Groups, Quotient Groups, Cayley's Theorem, The Class Equation, p-Groups, The Sylow's Theorems.

**[10 Lectures]**

**Unit-III:**

Definition of a Ring, Examples: Polynomial Rings, Matrix Rings, Group Rings. Homomorphisms and Ideals, Quotient Rings, Prime and Maximal Ideals, Integral Domains, Principal Ideal Domains, Unique Factorization Domains.

**[10 Lectures]**

**Unit-IV:**

Group Representations: Definitions, Irreducible Representations, Unitary Representations, Characters, One Dimensional Characters, The Regular Representation, Schur's Lemma, Proof of the Orthogonality Relations, Representations of  $SU(2)$ .

**[10 Lectures]**

**Prescribed Text Books:**

- M. Artin, "Algebra", Second Edition, PHI
- D. Dummit, R. Foote, "Algebra", Third Edition, Wiley
- P. Aluffi, "Algebra, Chapter 0", AMS

## Functional Analysis

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code:** IAM-501

**Course Name:** Functional Analysis

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must, failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - iii) Class tests 5%

**Course Contents:**

**Unit-I:**

- Topological Spaces
- Bases for Topology
- The Subspace Topology
- Limit Points
- Open and Closed Sets
- Product Topology
- Continuous Functions
- The Metric Topology
- The Quotient Topology.

**[10 Lectures]**

**Unit-II:**

- Compactness
- Connectedness
- Local Compactness
- Local Connectedness
- The Countability Axioms
- Separation Axioms.

**[10 Lectures]**

**Unit-III:**

- Normed Linear Spaces
- Banach Spaces
- Properties of Normed Linear Spaces
- Properties of Banach Spaces
- Compactness and Finite Dimensions
- Linear Operators
- Bounded and Continuous Operators
- Linear Functional
- Dual Space
- Double Dual Space

**[10 Lectures]**

**Unit-IV:**

- Inner Product Spaces
- Hilbert Spaces
- Properties of Inner Product Spaces
- Orthogonal Complement
- Direct Sum
- Orthonormal Sets
- Representation of Functional on Hilbert Spaces
- Self-Adjointness
- Unitary Operators
- Normal Operators
- Hahn-Banach Theorem.

**[10 Lectures]**

**Prescribed Text Books:**

1. E. Kreyszig, "Introductory Functional Analysis with Applications", Wiley Classic Library.
2. B. Limaye, "Functional Analysis", New Age International.
3. J. Munkres, "Topology", Third Edition, PHI.

**Suggested Additional Readings:**

1. Bollobas, "Linear Analysis", Second Edition, Cambridge University Press.
2. N. Akhiezer and I. Glazman, "Theory of Linear Operators in Hilbert Spaces", Dover Books.

C U H I M A C H A L

## Number Theory

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** MTH-510

**Course Name:** Number Theory

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must, failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - iii) Class tests 5%

**Course Contents:**

**Unit-I:**

Divisibility of Integers, and simple properties. Unique Factorization in Integers, Unique Factorization in a Polynomial ring over a Field. Congruences, Linear Congruences, Solutions of Congruences. The Chinese Remainder Theorem. Unique Factorization in Principal Ideal Domains. The Gaussian Integers Ring. Infinitude of Primes in Integers.

[10 Lectures]

**Unit-II:**

Arithmetical Functions, another proof of infinitude of Primes. Prime counting function. Prime power Moduli, Prime Modulus, Primitive Roots. N-th Power residues. Congruences of Degree two, Prime Modulus.

[10 Lectures]

**Unit-III:**



Quadratic Residues, The Law of Quadratic Reciprocity, Jacobi Symbols. Proof of Law of Quadratic Residues. Sums of Two Squares. Introduction to Algebraic Numbers and Algebraic Integers. Quadratic Character of 2. The Quadratic Gauss Sums.

**[10 Lectures]**

**Unit-IV:**

Finite Fields, Existence of Finite Fields. An application to Quadratic Residues. Multiplicative Characters, Gauss Sums, Jacobi Sums. Equations in Finite Fields. Introduction to Cubic and Biquadratic Reciprocity.

**[10 Lectures]**

**Prescribed Text Book:**

- K. Ireland and M. Rosen, “A Classical Introduction To Modern Number Theory”, Second Edition, Springer.

**Suggested Additional Reading:**

1. I. Niven, H. Zuckerman and H. Montgomery, “An Introduction to Theory of Numbers”, Second Edition, John Wiley and Sons.
2. G. Hardy and E. Wright, “An Introduction to Theory of Numbers” Fifth Edition, Oxford University Press.

## Financial Mathematics: The Mathematics of Money

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code: MTH-509**

**Course Name: Financial Mathematics: The Mathematics of Money**

**Credit Equivalent: 04** Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must, failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

- Mid Term Examination: 25%
- End Term Examination: 50%
- Continuous Internal Assessment: 25%
  - Assignment 15%
  - Class participation 5%
  - Class tests 5%

**Course Contents:**

**Unit-I:**

- Introduction to Probability Theory
- Probability and Events
- Conditional Probability
- Random Variables and Expected Values
- Covariance and Correlation
- Conditional Expectation
- Normal Random Variables and Properties
- The Central Limit Theorem

**[10 Lectures]**

## **Unit-II:**

- Brownian Motion
- Brownian Motion as a Limiting Case
- Geometric Brownian Motion
- Geometric Brownian Motion as a Limit of Simpler Models
- The Cameron-Martin Theorem
- Interest Rates
- Present Value Analysis
- Continuously Varying Interest Rates.

**[12 Lectures]**

## **Unit-III:**

- Pricing Contracts via Arbitrage: Some Examples
- The Arbitrage Theorem
- Multiperiod Binomial Model
- Proof of the Arbitrage Theorem
- Interlude on Stochastic Processes and Ito Calculus.

**[12 Lectures]**

## **Unit-IV:**

- Black-Scholes Formula: Introduction
- Properties of Black-Scholes Option Cost
- The Delta Hedging Arbitrage Strategy
- Derivation of Black-Scholes Formula
- European Put Option
- Call Option on Dividend-Paying Securities
- Some Additional Results on Options (If there is enough time!)

**[15 Lectures]**

### **Prescribed Text Book:**

- (1) S. Ross, "Introduction to Mathematical Finance", Third Edition, Cambridge University Press.
- (2) M. Joshi, "The Concepts of Mathematical Finance", Cambridge University Press.

### **Suggested Additional Reading:**

- (1) J. Buchanan, "An Undergraduate Introduction to Financial Mathematics", World Scientific.
- (2) B. Malkiel, "A Random Walk Down Wall Street", Ninth Edition, W. W. Norton & Company
- (3) J. Paulos, "A Mathematician Plays The Stock Markets", Basic Books, New York.

## Department of Computer Science

### School of Mathematics, Computers & Information Science

Name of the Department: **Department of Computer Science**

Name of the Programme of Study: **MSc (Information Technology)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if	Teacher
1.	CSI420	Data Structure & Algorithms	4	CSI401	Keshav Singh Rawat
2.	CSI422	LAB- Data Structure	2	CSI407A	Keshav Singh Rawat
3.	CSI409A	DBMS	4	NA	Manoj Dhiman
4.	CSI414A	LAB- DBMS	2	CSI409A	Manoj Dhiman

#### Courses for Semester 4

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if	Teacher
1.	CSI419	Compiler Design	4	CSI532	Keshav Singh
2.	CSI501	Design & Analysis of Algorithm	2	CSI420	Keshav Singh Rawat
2.	CSI503	Java Programming	4	CSI410	Manoj Dhiman
3.	CSI508A	LAB- Java	2	NA	Manoj Dhiman
4.	CSI515	Information Technologies & Web Design	4	NA	Guest Faculty
5.	CSI508C	LAB- ASP.NET	2	CSI515	Guest Faculty

#### University Wide Courses

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1.	CSI420	Data Structure &	4	CSI401	Keshav Singh
2.	CSI422	LAB- Data Structure &	2	CSI407A	Keshav Singh
3.	CSI409A	DBMS	4	NA	Manoj Dhiman
4.	CSI414A	LAB- DBMS	2	CSI409A	Manoj Dhiman

## Database Management System

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CSI 409 A

**Course Name:** Database Management System

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course

- Provide an introduction to the management of database systems.
- Emphasizes the understanding of fundamentals of relational systems including data models, database architecture and database manipulations.
- Help us to learn how to create and maintain databases.
- Help us to learn the concepts of transaction processing, concurrency control, recovery, protection, security and integrity.
- 

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Assignments: 10%
  - Class Tests: 10%
  - Class Participation: 5%

## Course contents

### Unit I: (8 hours)

**Introduction:** Data processing versus data management , File oriented approach versus database oriented approach to data management, Advantages and Disadvantages of using DBMS, Entity types, Entity sets, Attributes, Keys, Relationships and their types, Weak entity types, Components of DBMS, Three-level architecture proposed for DBMS, Data Models classification.

### Unit II: (10 hours)

**File Organization:** Serial Files, Sequential Files, Index-Sequential Files, Direct File, indexing Using Tree Structures.

**Data Modeling using the Entity Relationship Model:** ER model concepts, notation for ER diagram, mapping constraints, Generalization, aggregation, reduction of an ER diagrams to tables.

**Relational data Model and Language:** Relational data model concepts, integrity constraints: entity integrity, referential integrity, Keys constraints, Domain constraints, relational algebra, relational calculus: tuple and domain calculus.

### Unit III: (10 hours)

**SQL:** Introduction to SQL, Data types, classification of SQL commands (DDL, DML, DCL, TCL), Operators, integrity constraints, Built in Functions, sorting, joins, advanced queries using special operators, security.

**Data Base Design & Normalization:** Functional dependencies, normal forms.

### Unit IV: (12 hours)

**Transaction Processing Concepts:** Transaction system, Testing of serializability, Serializability of schedules, recoverability, Recovery from transaction failures, log based recovery, checkpoints, deadlock handling.

**Concurrency Control Techniques:** Concurrency control, locking Techniques for concurrency control, Time stamping protocols for concurrency control, validation based protocol, multiple granularity, Multi-version.

**Database recovery techniques:** basic concepts, recovery techniques based on deferred update and immediate update, shadow paging.

**Database Security and Integrity:** Threats and Defense mechanisms.

**Distributed databases:** Introduction, Architecture, Advantages and Disadvantages, Distributed database design, Types of distributed database systems.

**Prescribed Text Books:**

1. Bipin C. Desai, "An introduction to Database Systems", Galgotia Publication
2. Elmasri, Navathe, "Fundamentals of Database Systems", Addison Wesley.
3. Satish Ansani, "Oracle database 11g", PHI publications.

**References**

1. Date C J, "An Introduction To Database System", Addison Wesley
2. Korth, Silbertz, Sudarshan, "Database Concepts", McGraw Hill
3. Paul Beynon Davies, "Database Systems", Palgrave Macmillan
4. Ramakrishnan, Gehrke, "Database Management System", McGraw Hill

## LAB- DBMS

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CSI 414 A

**Course Name:** LAB- DBMS

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course helps to learn how to create and maintain databases using SQL and PL/SQL.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Lab Assignments: 20%
  - Class Participation: 5%



## Course Contents

### Unit I: (5 hours)

- DDL.
- DML.
- DCL, TCL.
- Operators.
- Integrity constraints.

### Unit II: (5 hours).

- Built in Functions.
- Clauses.
- Joins.
- Advanced queries using special operators.
- Security.

### Unit III: (5 hours)

- PL/SQL introduction, conditional statements.
- Looping controls.
- Stored functions.
- Stored procedure.

### Unit IV: (5 hours)

- Oracle packages.
- Exception handling in PL/SQL.
- Cursors.
- Triggers.

#### Prescribed Text Books:

1. Satish Ansani, "Oracle database 11g", PHI publications.

#### Suggested Additional Reading:

- Ivan Bayross, "SQL, PL/SQL, the programming language of Oracle", BPB Publication
- Martin Gruber, Understanding SQL, BPB Publications.

## Java Programming

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** CSI 503

**Course Name:** Java Programming

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course objective is to understand fundamentals of object-oriented programming in Java, including classes, methods, inheritance, packages, interfaces, multithreading, exception handling. The course also provide introduction to applet programming and AWT kit.

**Attendance Requirements:** Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Assignments: 10%
  - Class Tests: 10%
  - Class Participation: 5%

## Contents

### UNIT 1

(8 Hrs)

Object oriented programming, features of java, general structure of java program, sample program, lexical issues, data types, variables, type conversion and casting, arrays & strings, operators and expressions, controls statements.

### UNIT II

(10 Hrs)

Class fundamentals & objects, Methods, constructors, this keyword, garbage collection, overloading methods & constructors, using object as arguments, returning objects, recursion, nested and inner classes, inheritance, using super, method overriding, dynamic method dispatch, using abstract classes, using final with inheritance.

### UNIT III

(8 Hrs)

**Packages:** Introduction, java API packages, Using system packages, naming conventions, creating packages, accessing a package, using a package, adding a class to a package.

**Interfaces:** Defining interfaces, extending interfaces, implementing interfaces, accessing interface variables.

**Multithreading:** Introduction, creating threads, creating multiple threads, thread priorities, synchronization, in thread communication, suspending, resuming and stopping threads.

**Exception handling:** Introduction, exception types, uncaught exceptions, using try, catch, throw and throws, java's built in exceptions, creating own exception subclasses.

**Applets programming:** introduction, applet architecture, an applet Skelton, the HTML APPLET tag, passing parameters to applet.

### UNIT IV

(14 Hrs)

**String handling:** String constructors, special string operators, character extraction, string comparison, searching strings, modifying a string, string buffer.

**Introducing the AWT:** working with windows, graphics and text, Using AWT controls, layout managers and menus, images.

#### Prescribed text book:

1. Herbert Schildt, "The Complete Reference", Tata McGraw Hill.
2. E Balaguruswamy, "Programming with Java", Tata McGraw Hill.

#### Reference Books:

- Cay S. Horstmann, Gary Cornell, "Core Java", Pearson
- James R. Levenick, "Simply JAVA :An Introduction to JAVA programming", Firewall Media Publication New, Delhi.

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**Course Code:** CSI 508A

**Course Name:** LAB-Java

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course objective is to understand fundamentals of object-oriented programming in Java, including classes, methods, inheritance, packages, interfaces, multithreading, exception handling. The course also provide introduction to applet programming and AWT kit.

**Attendance Requirements:** Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Lab Assignments: 20%
  - Class Participation: 5%

**Contents**

**UNIT 1**

**(4 Hrs)**

- Installing java and configuring java, Some Sample program.
- Programming example on data types, variables, type conversions, and operators.
- Programming example on Arrays and strings.
- Programming examples on control statements.

## UNIT II

(5 Hrs)

- Programming examples on classes, objects.
- Programming examples on methods and constructors.
- Programming examples using object as arguments, returning objects, recursion, nested and inner classes.
- Programming examples in Inheritance, using super.
- Programming examples using method overriding, dynamic method dispatch, using abstract classes, using final with inheritance.

## UNIT III

(5 Hrs)

- Programming examples on Packages.
- Programming examples on interfaces.
- Programming examples on Multithreading.
- Programming examples on Exception handling.
- Programming examples on Applets programming.

## UNIT IV

(6 Hrs)

- Programming examples on String handling.
- Programming examples on working with windows.
- Programming examples graphics and text.
- Programming examples Using AWT controls.
- Programming examples Using layout managers and menus.
- Programming examples using images.

### Prescribed text book:

1. Herbert Schildt, "**The Complete Reference**", Tata McGraw Hill.
2. E Balaguruswamy, "**Programming with Java**", Tata McGraw Hill.

### Reference Books:

- Cay S. Horstmann, Gary Cornell, "**Core Java**", Pearson
- James R. Levenick, "Simply JAVA :An Introduction to JAVA programming ",Firewall Media Publication New,Delhi.

## E-Governance, E-Business and E-Learning

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:**CSI506

**Course Name:** E-Governance, E-Business and E-Learning

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To provide the knowledge of good governance using information and communication technologies.
- To help students understand the role of technology, the application of technology and the diversity of technology across various walks of life.
- To understand and examine the growth of e-Business.
- To introduce students to business cases, so they learn to solve business problems with information technology.
- To make the concept of e-learning popular and easy among individuals.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 10%
  - ii) Class participation 5%
  - iii) Class tests 5%
  - iv) Seminars 5%

## **Course Contents:**

### **Unit-I**

**5 Hours**

What is E-Governance; Why E-Governance; Evolution of E-Governance, its scope and content; Present global trends of growth in E-Governance.

### **Unit-II**

**5 Hours**

E-Governance Models: Introduction; Models of digital governance: Broadcasting/Wider Dissemination Model, Critical Flow Model, Comparative Analysis Model, Mobilisation and Lobbying Model, Interactive-Service Model, E-governance Maturity Model.

### **Unit-III**

**5 Hours**

Introduction to e-Business; Constructing an e-Business; Building an e-Business: Design, Development and Management.

### **Unit-IV**

**5 Hours**

What is e-Learning; Self study versus Virtual class room e-Learning; e-Learning development process; Two types of e-Learning goals; Is e-Learning better; What makes e-Learning unique; e-Learning Pitfalls; How do people learn from e-courses.

### **Prescribed Text Book:**

1. E-Governance: Concepts and Case Studies, C.S.R. Prabhu, PHI Learning Private Limited.
2. E-Business and e-Commerce for Managers, Harvey M. Deitel, Paul J. Deitel, Kate Steinbuhler, Pearson.
3. E-Business Organisational & Technical Foundation, Michael P. Papazoglou, Pieter M. Ribbers, Wiley India Ltd.
4. e-Learning and the science of instruction: Proven Guidelines for consumers and designers of multimedia learning, by Ruth C. Clark, Richard E. Mayer, Wiley India Ltd.

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:**CSI508C

**Course Name:** LAB-ASP.NET

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** Upon completion of this course, the students will be able to:

- Develop a basic Web site.
- Deploy a basic Web site on a Web server.
- Demonstrate basic competency in Web development and programming.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - ii) Class tests 5%



## **Course Contents:**

### **Unit-I:**

**5 Hours**

Structure of HTML document, Creating & Executing HTML, Tags of HTML.

### **Unit-II:**

**5 Hours**

Installation of ASP.NET; Displaying information using Label control; Accepting user input using Textbox control, Checkbox Control & Radio button control; Submitting form data using Button control, LinkButton control & ImageButton control.

### **Unit-III:**

**5 Hours**

Displaying Images by using Image Control; Panel Control; HyperLink Control; Validation Controls: RequiredFieldValidator, RangeValidator, CompareValidator, RegularExpressionValidator, CustomValidator, ValidateSummary; Displaying a Calendar; Displaying Advertisements: Storing Advertisements in an XML File.

### **Unit-IV:**

**5 Hours**

Designing ASP.NET Websites: Designing Websites with Master Pages, Creating Master Pages; Overview of Data Access: Building Data Access Components with ADO.NET; Executing SQL statements - select, insert, update and delete.

### **Prescribed Text Book:**

1. Stephen Walther, "ASP.NET 3.5" Pearson Education.
2. Thomas A. Powell, "Complete Reference HTML", Tata McGraw Hill.

### **Suggested Additional Reading:**

1. Scott Mitchell, "Sams Teach Yourself ASP.NET 4 in 24 hours: Complete Starter Kit", Pearson Education.
2. Bill Evjen, Scott Hanselman, Devin Rader, "Professional ASP.NET 4 in C# and VB", WROX, Wiley India Ltd.
3. Mike McGrath, "HTML 4 in Easy Steps", Wiley India Ltd.

## Internet Technologies and Web Programming

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**Course Code:**CSI515

**Course Name:** Internet Technologies and Web Programming

**Credit Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** Upon completion of this course, the students will be able to:

- Develop a basic Web site and set of Web pages using a modern Web development tool.
- Explain and apply basic Web design and usability principles.
- Deploy a basic Web site on a Web server.
- Demonstrate basic competency in Web development and programming.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 15%
  - ii) Class participation 5%
  - ii) Class tests 5%

**Course Contents:**

**Unit-I:**

**8 Hours**

Overview of Internet: History and evolution; The Web: History of the Web; Introduction to Web Browser, Web Page, Static & Dynamic Web Pages, Web Site, Web Server, Introduction to HTML: History, Structure of HTML document, Creating & Executing HTML, Tags of HTML, Tables and Frames: Creating Table, Use of Frames.

**Unit-II:**

**8 Hours**

Overview of the ASP.NET and the .NET Framework, Installing the ASP.NET Framework, Common Language Runtime, ASP.NET Controls, HTML Controls, Understanding and Handling Control Events, Understanding ASP.NET Pages, Understanding Dynamic Compilation.

**Unit-III:**

**8 Hours**

Using the Standard Controls, Displaying Information: Using the Label Control; Accepting User Input: Using the TextBox Control, Using the CheckBox Control, Using the RadioButton Control; Submitting Form Data: Using the Button Control, Using the LinkButton Control, Using the ImageButton Control, Specifying a Default Button.

**Unit-IV:**

**8 Hours**

Displaying Images: Using the Image Control; Using the Panel Control, Using the HyperLink Control; Using the Validation Controls: Overview of Validation Controls, RequiredFieldValidator, RangeValidator, CompareValidator, RegularExpressionValidator, CustomValidator, ValidateSummary; Displaying a Calendar; Displaying Advertisements: Storing Advertisements in an XML File.

**Unit-V:**

**8 Hours**

Designing ASP.NET Websites: Designing Websites with Master Pages, Creating Master Pages; Overview of Data Access: Building Data Access Components with ADO.NET, Using DataBound Controls, Working with Hierarchical DataBound Controls; Using the SqlDataSource Control, Creating Database Connections: Connecting to Microsoft SQL Server, Connecting to other Databases, Executing SQL statements - select, insert, update and delete.

**Prescribed Text Book:**

1. Stephen Walther, "ASP.NET 3.5" Pearson Education.
2. Thomas A. Powell, "Complete Reference HTML", Tata McGraw Hill.

**Suggested Additional Reading:**

1. Scott Mitchell, "Sams Teach Yourself ASP.NET 4 in 24 hours: Complete Starter Kit", Pearson Education.
2. Bill Evjen, Scott Hanselman, Devin Rader, "Professional ASP.NET 4 in C# and VB", WROX, Wiley India Ltd.
3. Mike McGrath, "HTML 4 in Easy Steps", Wiley India Ltd.

## Compiler Design

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**Course Code:** CSI419

**Course Name:** Compiler Design

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To learn how a compiler works.
- To use of formal attributed grammars for specifying the syntax and semantics of programming languages.
- To Working knowledge of the major phases of compilation, particularly lexical analysis, parsing, semantic analysis, and code generation.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignments 5%
  - ii) Class participation 5%
  - iii) Class tests 10%
  - iv) Quiz 5%

## **Course Contents:**

### **Unit-I Introduction to Compiler & Lexical Analysis**

**(08 hours)**

Introduction of Compiler, Major data Structure in compiler, BOOT Strapping, Compiler structure: analysis-synthesis model of compilation, various phases of a compiler, Lexical analysis: Input buffering , Specification & Recognition of Tokens, LEX.

### **Unit-II Syntax Analysis**

**(9 hours)**

Syntax analysis: CFGs, Top down parsing, Brute force approach, recursive descent parsing, transformation on the grammars, predictive parsing, bottom up parsing, operator precedence parsing, LR parsers (SLR,LALR, LR).

### **Unit-III Syntax Directed Translation & Intermediate Code Generation**

**(09 hours)**

Syntax directed definitions: Construction of Syntax trees, Bottom up evaluation of S-attributed definition, L-attribute definition, Top down translation, Bottom Up evaluation of inherited attributes Recursive Evaluation, Analysis of Syntax directed definition.

Intermediate code generation: Declarations, Assignment statements, Boolean expressions, Case statements.

### **Unit-IV Type Checking & Run Time Environment**

**(07 hours)**

Type checking: type system, specification of simple type checker.

Run time Environment: storage organization, Storage allocation strategies, parameter passing, dynamic storage allocation, and Symbol table.

### **Unit -V Code Optimization & Code Generation**

**(07 hours)**

Introduction to Code optimization: sources of optimization of basic blocks, loops in flow graphs, dead code elimination, loop optimization, Introduction to global data flow analysis, Code Improving transformations, peephole optimization.

Code Generation: Issues in the design of code generator, Basic block and flow graphs, Register allocation and assignment, DAG representation of basic blocks.

### **Prescribed Text Book:**

1. A. V. Aho, R. Sethi, and J. D. Ullman. Compilers: Principles, Techniques and Tools, Pearson Education

### **Suggested Additional Reading:**

1. Raghavan, Compiler Design, TMH Pub.
2. Loudon. Compiler Construction: Principles and Practice, Cengage Learning
3. A. C. Holub. Compiler Design in C, Prentice-Hall Inc., 1993.
4. Mak, writing compiler & Interpreters, Willey Pub.

## Data Structure & Algorithms

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**Course Code:** CSI420

**Course Name:** Data Structure & Algorithms

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To develop proficiency in the specification, representation, and implementation of Data Types and Data Structures.
- To be able to carry out the Analysis of various Algorithms for mainly Time and Space Complexity.
- To get a good understanding of applications of Data Structures.
- To develop a base for advanced computer science study.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignments 5%
  - ii) Class participation 5%
  - iii) Class tests 10%
  - iv) Seminars 5%

## **Course Contents:**

### **Unit-I:**

**(08 Hours)**

Introduction: Basic Terminology, Data types and its classification, Algorithm, complexity- space & time complexity ,complexity notations- big Oh, Omega, Theta.

Array Definition, Representation and Analysis of Arrays, Single and Multidimensional Arrays, Address calculation, Linear Search, Binary Search of Array, Traversing , Insertion & deletion in array, Sparse Matrices, Strings.

### **Unit-II:**

**(08 Hours)**

Linked List Introduction, Representation of linked list in to memory, Memory allocation -Garbage Collection, Traversing & Searching in Linked List, Insertion into linked list- at beginning of list & at given location, Deletion in linked list- from starting of list & given location of node, Header Linked List, two way List, Input & output restricted liked list, Circular Header Linked List, Representation of Polynomials using linked List .

### **Unit-III:**

**(08 Hours)**

Stack, Array Implementation of stack, Linked Representation of Stack, Application of stack: Conversion of Infix to Prefix and Postfix Expressions and Expression evaluation.

Queue, Array and linked implementation of queues, Circular queues, D-queues and Priority Queues.

### **Unit-IV:**

**(09 Hours)**

Trees: Basic terminology, Binary Trees, algebraic Expressions, Complete Binary Tree, Extended Binary Trees, Array and Linked Representation of Binary trees, Traversing Binary trees, Threaded Binary trees, Binary Search Tree (BST ), AVL Trees, B-trees.

Graphs: Introduction, Sequential Representations of Graphs, Adjacency Matrices, Traversal, Connected Component and Spanning Trees, Minimum Cost Spanning Trees.

### **Unit-V:**

**(07 Hours)**

Internal and External sorting, Insertion Sort, Bubble Sort, selection sort, Quick Sort, Merge Sort, Radix sort.

Searching & Hashing: Sequential search, binary search, Hash Table, Hash Functions, Collision Resolution Strategies.

### Prescribed Text Book:

- Lipschutz, “Data structure (Schaum)”, TMH
- Horowitz and Sahani, “Fundamentals of data Structures”, Galgotia Publication Pvt. Ltd., N Delhi.

### Suggested Additional Reading:

1. A.M. Tenenbaum, “Data Structures using C & C++”, Prentice-Hall of India Pvt. Ltd., New Delhi.
2. Data Structures Trembley and Sorenson, TMH Publications
3. R. Kruse et al, “Data Structures and Program Design in C”, Pearson Education Asia, Delhi-2002
4. [http://www.nptel.iitm.ac.in/courses/Webcourse-contents/IIT-Guwahati/data\\_str\\_algo/frameset.htm](http://www.nptel.iitm.ac.in/courses/Webcourse-contents/IIT-Guwahati/data_str_algo/frameset.htm)
5. “Data Structures: The Problem of Time Series Computing”, John Henstridge , *Journal of Applied Probability*, Vol. 23, Essays in Time Series and Allied Processes (1986), pp. 407-411 [<http://www.jstor.org/>]
6. “Internal Data Structures” Author(s): J. C. Gower and I. D. HillSource: Journal of the Royal Statistical Society.
7. Series C (Applied Statistics), Vol. 20, No. 1(1971), pp. 32-45Published by: Wiley for the Royal Statistical SocietyStable URL: <http://www.jstor.org/stable/2346629>



## LAB- Data Structure & Algorithms

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**Course Code:** CSI422

**Course Name:** LAB- Data Structure & Algorithms

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To develop proficiency in the specification, representation, and implementation of Data Types and Data Structures.
- To be able to carry out the Analysis of various Algorithms for mainly Time and Space Complexity.
- To get a good understanding of applications of Data Structures.
- To develop a base for advanced computer science study.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Class participation 10%
  - ii) Class tests 10%
  - iii) Assignments 5%

## **Course Contents:**

### **Unit-I:**

**(04 Hours)**

Introduction: Basic Terminology, Data types and its classification, Array Definition, Representation and Analysis of Arrays, Single and Multidimensional Arrays, Address calculation, Linear Search, Binary Search of Array, Traversing , Insertion & deletion in array, Sparse Matrices, Strings.

### **Unit-II:**

**(04 Hours)**

Linked List : Traversing & Searching in Linked List, Insertion into linked list- at beginning of list & at given location, Deletion in linked list- from starting of list & given location of node, Header Linked List, two way List, Input & output restricted linked list, Circular Header Linked List.

### **Unit-III:**

**(04 Hours)**

Stack, Array Implementation of stack, Linked Representation of Stack, Conversion of Infix to Prefix and Postfix Expressions and Expression evaluation.

Queue, Array and linked implementation of queues, Circular queues, D-queues and Priority Queues.

### **Unit-IV:**

**(04 Hours)**

Trees: Array and Linked Representation of Binary trees, Traversing Binary trees, Binary Search Tree (BST), AVL Trees, B-trees.

### **Unit-V:**

**(04 Hours)**

Sorting: Insertion Sort, Bubble Sort, selection sort, Quick Sort, Merge Sort.

### **Prescribed Text Book:**

- Lipschutz, “Data structure (Schaum)”, TMH

### **Suggested Additional Reading:**

1. A.M. Tenenbaum, “Data Structures using C & C++”, Prentice-Hall of India Pvt. Ltd., New Delhi.
2. Data Structures Trembley and Sorenson, TMH Publications
3. Horowitz and Sahani, “Fundamentals of data Structures”, Galgotia Publication Pvt. Ltd., N Delhi.
4. R. Kruse et al, “Data Structures and Program Design in C”, Pearson Education Asia, Delhi-2002
5. [http://www.nptel.iitm.ac.in/courses/Webcourse-contents/IIT-%20Guwahati/data\\_str\\_algo/frameaset.htm](http://www.nptel.iitm.ac.in/courses/Webcourse-contents/IIT-%20Guwahati/data_str_algo/frameaset.htm)
6. “Data Structures: The Problem of Time Series Computing”, John Henstridge , *Journal of Applied Probability*, Vol. 23, Essays in Time Series and Allied Processes (1986), pp. 407-411 [<http://www.jstor.org/>]
7. “Internal Data Structures” Author(s): J. C. Gower and I. D. HillSource: *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, Vol. 20, No. 1(1971), pp. 32-45Published by: Wiley for the Royal Statistical SocietyStable URL: <http://www.jstor.org/stable/2346629>

## Design & Analysis of Algorithms

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**Course Code:** CSI501

**Course Name:** Design & Analysis of Algorithms

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To be able to carry out the Analysis of various Algorithms for mainly Time and Space Complexity.
- develop efficient algorithms for simple computational tasks and reasoning about the correctness of them. Through the complexity measures, different range of behaviours of algorithms and the notion of tractable and intractable problems will be understood

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignments 5%
  - ii) Class participation 5%
  - iii) Class tests 10%
  - iv) Quiz 5%

## **Course Contents:**

### **Unit I**

**(4 Hours)**

Algorithms, Designing algorithms, analyzing algorithms, asymptotic notations, Introduction to divide and conquer technique, analysis, design and comparison of various algorithms based on this technique, example binary search, merge sort, quick sort, strassen's matrix multiplication.

### **Unit II**

**(4 Hours)**

Study of Greedy strategy, examples of greedy method like optimal merge patterns, Huffman coding, minimum spanning trees, knapsack problem, job sequencing with deadlines, single source shortest path algorithm

### **Unit III**

**(4 Hours)**

Concept of dynamic programming, problems based on this approach such as 0/1 knapsack, multistage graph, reliability design, Floyd-Warshall algorithm.

### **Unit IV**

**(4 Hours)**

Backtracking concept and its examples like 8 queen's problem, Hamiltonian cycle, Graph coloring problem etc. Introduction to branch & bound method, examples of branch and bound method like travelling salesman problem etc. Meaning of lower bound theory and its use in solving algebraic problem.

### **Unit V**

**(4 Hours)**

Binary search trees, height balanced trees, 2-3 trees, B-trees, basic search and traversal techniques for trees and graphs (In order, preorder, postorder, DFS, BFS), NP-completeness.

### **Prescribed Text Book:**

1. Ellis Horowitz, Sartaj Sahni and Sanguthevar Rajasekaran, –Computer Algorithms/C++||, 2nd Edition, Universities Press, 2007.

### **Suggested Additional Reading:**

1. Cormen, T.H., Leiserson, C.E., Rivest, R.L. and Stein, C., –Introduction to Algorithms||, 2nd Edition, Prentice Hall of India Pvt. Ltd, 2003.
2. Aho, A.V., Hopcroft J.E. and Ullman, J.D., –The Design and Analysis of Computer Algorithms||, Pearson Education, 1999.
3. Sara Baase and Allen Van Gelder, –Computer Algorithms, Introduction to Design and Analysis||, 3rd Edition, Pearson Education, 2009.
- 4 . Dasgupta; algorithms; TMH
5. Michael T Goodrich, Roberto Tamassia, Algorithm Design, Wiley India

## Mobile & Wireless Communication

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CSI505

**Course Name:** Mobile & Wireless Communication

**Credit Equivalent:** 04 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual / group work; obligatory / optional work placement; literature survey / library work; data collection / field work; writing of papers / projects / dissertation / thesis; seminars, etc.)

**Course Objectives:** The course is designed

- To familiar with the regulatory environment in which the wireless industry operates.
- To understand functions and operational principles of the various components of wireless networks, and how the connections are setup and maintained.
- To understand the concept of frequency reuse, and be able to apply it in design of simple frequency reuse patterns.
- To realize the complicated nature of wireless propagation and be able to apply simple models to calculate link budget.
- To understand different modulation schemes and multiple access techniques used in wireless communications.
- To familiar with some of the existing and emerging wireless standards.

**Prerequisites:**

Basic of computer communication & network.

### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - i) Assignment 10%
  - ii) Class participation 5%
  - iii) Class tests 5%
  - iv) Seminars 5%

### **Course Contents:**

#### Unit-I:

(6 HOURS)

Wireless Networks: Introduction, Applications, History of Wireless Communication. Electromagnetic Spectrum, Radio Propagation Mechanisms, Characteristics of the Wireless Channel, Modulation Techniques, Multiple Access Techniques, Voice Coding, Error Control.

#### Unit-II:

(9 HOURS)

Wireless LANS and PANS: Introduction, Fundamentals of WLANs, IEEE 802.11 Standards, HIPERLAN Standard, Bluetooth, HomeRF

#### Unit-III:

(8 HOURS)

Wireless WANS AND MANS: Introduction, Cellular Concept, Cellular Architecture, The First-Generation Cellular Systems, The Second-Generation Cellular Systems, The Third-Generation Cellular Systems, Wireless in Local Loop, Wireless ATM.

#### Unit-IV

(8 HOURS)

Wireless Internet: Introduction, Mobile network Layer, Mobile IP, Route optimization, Handoffs, IPv6 Advancements, IP for Wireless domains, Security in Mobile IP, Mobile Transport layer, TCP in Wireless Domain, Optimizing Web over Wireless.

#### Unit-V:

(9 HOURS)

Ad Hoc Wireless Networks: Introduction. Issues in Ad Hoc Wireless Networks. Ad Hoc Wireless Internet. MAC Protocols for Ad Hoc Wireless Networks, Routing Protocols for Ad Hoc Wireless Networks, Security in Ad hoc wireless networks, Recent advances in Wireless Networks.

#### **Text Book:**

- C-Siva Ram Murthy & B S Majo, Adhoc Wireless Networks, Architectures Protocols , Pearson
- Jochen Schiller “Mobile Communications”, PEARSON

#### **Reference Books:**

- William C.Y Lee, “Mobile Communication Design Fundamental”, John Wiley.
- William Stalling, “Wireless Communication and Network”, Pearson Education
- Qing- An Zeng, Dharma Prakash Agrawal “Introduction to Wireless and Mobile Systems” CENGAGE Learning.
- Sumit Kasera, Nishit Narang, A P Priyanka “2.5 G Mobile Networks: GPRS and EDGE”, TMH

## Department of Library Science

### School of Mathematics, Computers & Information Science

Name of the Department: **Department of Library Science**

Name of the Programme of Study: **M Lib Sc (Integrated Dual Degree Programme)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1.	LIS 406	Knowledge Organization and Information Processing (Practice): Cataloguing	2	LIS405	Sh. Nimmala Karunakar.
2.	LIS 410	Fundamentals of Information and Communication Technology	4	NA	Sh. Nimmala Karunakar.
3.	LIS 411	Management of Libraries and Information Centers	2	NA	Sh. Nimmala Karunakar.
4.	LIS 414	Information sources and services	2	NA	Sh. Nimmala Karunakar.
5.	LIS 405	Knowledge Organization and Information Processing (Theory):Cataloguing	2	NA	Dr. Dimple Patel
6.	LIS 407	Knowledge Organization and Information Processing (Theory): Classification	2	NA	Dr. Dimple Patel
7.	LIS 415	Knowledge society	2	NA	Prof. I.V. Malhan
8.	LIS 412	Internship	2	NA	Prof. I.V. Malhan
9.	LIS 499	Dissertation/Project	4	NA	Prof. I.V. Malhan
10	LIS 408	Knowledge Organization and Information Processing ( Practical): Classification	4	LIS407	Prof. I.V. Malhan



**Courses for Semester 4**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Code No. of Pre-requisite/ Co-requisites if any</b>	<b>Teacher</b>
1.	LIS 504	Digital library (practical)	2	NA	Sh. Nimmala Karunakar.
2.	LIS 411	Management of Libraries and Information Centers	2	NA	Sh. Nimmala Karunakar.
3.	LIS 416	Information Storage and Retrieval	2	NA	Dr. Dimple Patel
4.	LIS 503	Digital Library	2	NA	Dr. Dimple Patel
5.	LIS 510	IPRS in Digital Era	2	NA	Dr. Dimple Patel

**University Wide Courses**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Code No. of Pre-requisite/ Co-requisites if any</b>	<b>Teacher</b>
1.	LIS 410	Fundamentals of Information and Communication Technology	4	NA	Sh. Nimmala Karunakar.
2.	LIS 510	IPRS in Digital Era	2	NA	Dr. Dimple Patel

## Fundamentals of Computer, Computing and ICT

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** LIS 410

**Course Name:** Fundamentals of Computer, Computing and ICT

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- Knowledge of Basic Computing Concepts.
- Identifying the functions of Input & Output Devices.
- To understand the concept of Computer Software.
- In general, develop an intuitive sense of how computers work and how they can be used to make your work more efficient.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Assignment: 10%
  - i. Class participation 5%
  - ii. Surprise Test: 5%
  - iii. Seminars 5%

**Course Content:****UNIT - I:**

Introduction: Computer, Data Processing, Computer System Characteristics, Evolution of Computers, Capabilities and Limitations, Generations of computers, Block diagram of computer, Basic components of a computer system- Input unit, Output unit, Storage unit, ALU, Control unit, Central Processing unit; Number Systems- Non-positional number system, Positional number system, Decimal Number system, Binary number system, Octal number system, Hexadecimal number system.

**UNIT - II:**

Memory: Main memory organization, Main memory capacity, RAM, ROM, PROM, EPROM, Cache Memory, Secondary storage devices: Sequential access devices- Magnetic tape; Direct access devices- Magnetic disks, Floppy disks, Optical disks, Types of Optical disks: CD-ROM, CD-R, CD-RW, DVD.

**UNIT - III:**

Input devices: Keyboard, Pointing Devices-Mouse, Touch screens, Joystick, Electronic pen, Trackball, Scanning devices: Optical Scanners, OCR, OMR, Bar code reader, MICR, Electronic card reader, Image capturing devices, Digital cameras.

Output devices: Monitors- CRT, LCD, Printers-Dot matrix, Inkjet, Laser; Plotters, Screen image projector.

**UNIT - IV:**

Introduction: Software, Relationship between Hardware and Software, Types of Software-System Software, Application Software; System Software-Operating System, Utility Program; Programming Languages-Machine, Assembly, High Level; Assembler, Compiler, Interpreter.

**UNIT - V:**

Data Communication & Computer Networks, Basic elements of a communication system, Data Transmission modes-Simplex, Half duplex, Full duplex; Data Transmission speed-Narrowband, Voice band, Broadband; Data Transmission media-Twisted Pair Wire, Coaxial cable, Optical fibers; Modems, Types of Network-LAN, WAN, MAN; Internet, World Wide Web, Web Browsers.

**Prescribed Text Book:**

1. Pradeep K. Sinha, Priti Sinha, "Computer Fundamentals", BPB Publications.

**Suggested Additional Reading:**

1. Rajaraman, V., "Fundamental of Computers", Fifth Edition, Prentice Hall India, New Delhi.
2. E. Balagurusamy, "Introduction to Computers (Special Indian Edition)", Tata McGraw Hill.

## **Knowledge Organization and Information Processing (Practice): Cataloguing**

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code:** LIS 406

**Course Name:** Knowledge Organization and Information Processing (Practice): Cataloguing

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

### **Course Objectives:**

To give practice and train students in the techniques of Cataloguing practices the various documents according to AACR-2, MARC-21, train in the use of LCSH and Sear's list for subject heading, assigning Book Numbers, etc.

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - iv. Assignment: 5%
  - v. Library Work: 5%
  - vi. Seminar: 5 %
  - vii. Class Test: 5%
  - viii. Case study of cataloguing: 5%

### **Course Content**

1. Cataloguing of books and non book materials according to AACR-2 **(15Hours)**
2. Cataloguing of books and non book materials according to MARC21 **(15 Hours)**

## Knowledge Organization and Information Processing (Practical): Classification

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**Course Code:** LIS 408

**Course Name:** Knowledge Organization and Information Processing (Practical): Classification

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

To give practice and train students in the techniques of classifying titles of various documents according to the Dewey Decimal Classification 22<sup>nd</sup> ed. and UDC.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Assignment: 10%
  - ii. Library Work: 5%
  - iii. Class Test: 10%

**Course Content:**

- 1) Classification of Documents with Dewey Decimal Classification, 23<sup>rd</sup> Ed. **(20 Hours)**
- 2) Classification of Documents with Universal Decimal Classification, Standard Edition 2005. **(20 Hours)**

**Prescribed Practical Manuals:**

- A. Dewey Decimal Classification (23<sup>rd</sup> Ed.)
- B. Universal Decimal Classification (latest edition)

## Fundamentals of Information and Communication Technology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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**Course Code:** LIS 410

**Course Name:** Fundamentals of Information and Communication Technology

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- To provide students with basic knowledge of computers and networks and their application to library and information activities.
- Familiarity with the Internet technology.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - i. Assignment: 10%
  - ii. Surprise Test: 10%
  - iii. Class work :5%

**Course Content:**

**UNIT - I: Computer Fundamentals and Hardware  
(5 Hours)**

- Basics: Von Neumann Architecture, Computer Generations, And Classification of computers, Computer Organisation, Processor Types: CISC, RISC
- Data Representation: ASCII, BCD, UNICODE & Numbering systems (Binary, Octal, Hexadecimal)
- computer memory: Memory Hierarchy: Register, Cache, RAM, ROM, DRAM, Flash Memory, Secondary Storage: Characteristic of Hard disk and CD-ROM, DVDs,
- Printers and Scanners; Types and characteristics

**UNIT - II: Computer software**

**(5 Hours)**

- System and application software; Programming concepts: System analysis, flowcharts, and algorithms.
- Open source and proprietary software.
- Operating Systems: M S- DOS, Windows
- Operating Systems: UNIX / LINUX.

**UNIT - III: Database management Systems  
(10 Hours)**

- Database: concepts and components
- Database Management system: Basic Functions, potential uses
- Database Structures, file organization : Sequential, Indexed Sequential and Direct file
- Database type; relational database

**UNIT - IV: Fundamentals of Networking**

**(10 Hours)**

- Network Devices : NIC, Modem, Amplifier, Repeater, Hub, Bridge, Switches, Router, Wi-Fi devices
- serial and parallel data communication, analog & digital data communication, synchronous and asynchronous mode of data communication Introduction to Computer Networks,
- Classification : LAN, MAN, WAN: Internet, Intra-net, Extra-net Networking Models : ISO OSI, TCP/IP reference Model

- Network Topologies : Bus, Ring, Star, Mesh; Switching Techniques : Circuit Switching, Packet Switching

**UNIT - V: Internet: Basic features, Tools, protocols & Services**

**(10 Hours)**

- origin and stages of development of the internet; introduction to intranets and extranets
- Internet connectivity: Dial-up, Leased Line, ISDN, wi-fi. Addressing: MAC addressing, port-address, domain address, ip address.
- Internet security: authentication, firewalls, virus, spyware maintenance , Proxy servers
- Protocols & services:IP,TCP,Telnet,FTP,SMTP,POP,DNS,News groups

**Prescribed Text Books:**

1. ANITA GOEL.Computer Fundamentals,New Delhi,pearson,2010.
2. TANENBAUM,ANDREW S.Computer network,3dr ed. New Delhi,pearson,2010
3. CLARK M P: Networks and telecommunication: design and operation. 2nd ed. 1997.

**Suggested Extra Readings:**

1. COMER D E: Computer networks and internets. 1997.
2. DUATO J, YALAMANCHILI S and NI L: Interconnection networks. 1997
3. DEESON, ERIC. Managing with Information Technology, Great Britan, Kogan page Ltd. 2000.
4. Forrester W.H. and Rowlands, J.L. The Online searcher s companion. London,Library Association, 2002.
5. ROWELY, JENNIFER: Information Systems, Ed.2, London, Clive Bingley, 2001.



## Management of Libraries and Information Centers

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**Course Code:** LIS 411

**Course Name:** Management of Libraries and Information Centers

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

1. To acquaint students with various functions and management of library / information centers
2. To train the students to become effective librarians/Information managers

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Assignment: 10%
  - ii. Library Work: 5%
  - iii. Seminar: 5 %
  - iv. Surprise Test: 5%

**Course Content:**

**UNIT - I: Concept; Functions and principles of management (5 Hours)**

- Management concept - Historical overview; Principles of management and their application in Libraries and Information Centres
- Schools of Management Thought
- Systems Analysis and Design
- Change management

**UNIT - II: Human Resource Management (4 Hours)**

- Organisation models
- Job analyses and Job description; recruitment training development
- Motivation and leadership.
- Job evaluation and Performance appraisal

**UNIT - III: Financial Management (3 Hours)**

- Financial Management in LICs - Sources of finance; resource mobilization
- Budgeting - methods and techniques
- Budgetary control techniques- Cost Benefit, Cost Effective analysis

**UNIT - IV: Project Management (5 Hours)**

- SWOT
- PERT, CPM
- TQM – applications
- Six sigma , Reengineering

**UNIT - V: Library and Information centre Management (3 Hours)**

- Library routines; Acquisition procedures
- Technical processing; Circulation control; Serials control
- Collection development : policies and procedures

**Prescribed Text Books:**

1. Beardwell, Ian and Holden, Len. Ed. Human Resource Management: Contemporary Perspective. New Delhi: McMillan, 1996
2. Brophy, Peter and Courling Kote, Quality Management for Information and Library Managers. Bombay: Jaico, 1997
3. Krishna Kumar. Library Administration and Management. Vikas: Delhi, 2004.

**Suggested Extra Readings:**

1. Krishan Kumar. Library Manual. Delhi: Vikas, 2003
2. Ranganathan, S R. Library manual. 2nd ed. Bangalore : Sharada Ranganathan Endowment, 1988
3. Ranganathan, S R. Library administration. Bombay: Asia, 1959

## Information sources and services

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**Course Code:** LIS 414

**Course Name:** Information sources and services

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- I. To familiarize students with various reference sources, their types, contents and use.
- II. To introduce the students to various bibliographies used for location & identification of information
- III. To acquire skills in providing reference and information services

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - I. Assignment: 5%
  - II. Library Work: 5%
  - III. Surprise Test: 5%
  - IV. Evaluation of not less than 25 reference sources including electronic resources: 10%

**Course Content:**

**UNIT - I: Documentary Sources**

**(5Hours)**

- **Primary sources:** Research journals, Primary periodicals, technical reports, conference documents, standards, patents, theses, trade literature, monographs, treatises, etc.
- **Secondary source:** Index type-bibliographies, indexing and abstracting services

- Reference book type-Dictionaries, encyclopaedias, yearbooks, almanacs, handbooks, gazetteers, maps and atlases, guidebooks, etc.
- Biographical sources: National Bibliographies INB & BNB, Trade Bibliographies.
- review type: reviews of progress

**UNIT - II: Tertiary and non-documentary sources (5Hours)**

- literature guides, directories
- bibliographies of bibliographies, list of research in progress
- consultants and extension workers
- Invisible colleges and technology gatekeepers
- Mixed: Newspapers, popular periodicals, technical, etc.

**UNIT - III: Evaluation of select reference works and bibliographical sources (3Hours)**

- National bibliographies, trade bibliographies
- Union catalogues, indexing and abstracting services
- Encyclopaedia & dictionaries, yearbooks.
- Biographical & geographical sources

**UNIT - IV: Information Services: (4 Hours)**

- Concept, Types and Need
- Current awareness services
- Alerting services: Newspaper clipping, Listserv, Blogs
- Digital reference service

**UNIT - V: Personalized Information Services (3Hours)**

- Indexing and Abstracting Service
- Document Delivery Services
- Translation Service Reprographic Service
- Selective Dissemination of Information (SDI)

**Prescribed Text Books:**

1. Higgins, Gavin. Printed Reference Materials. London: Library Association, 1980
2. Krishnakumar: Reference Service, Ed.3, New Delhi, Vikas, 2003.
3. Parker, C.C and turley, R.V. Information sources in Science and Technology Ed.2 1986
4. Subramanayam, K: Scientific and Technical Information Resources, New Delhi: Anmol, 2001

**Suggested Extra Readings:**

1. Alan Poulter, Gwyneth Tseng and Goff Sargent: The Library and Information Professional s Guide to the World Wide Web. London: Facet Publishing, 1999.
2. Chowdhruy, G.G. And sudatta chowdhury: Searching CD-ROM and Online Information Sources. London: Facet Publishing, 2001.

3. Chowdhury, G.G. And sudatta chowdhury. Information Sources and Searching on the World Wide Web. London: Facet Publishing, 2001.

4. Walford, A.J: Guide to Reference Materials, London, Library Association, 1990, 3V.

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**Course Code:** LIS 415  
**Course Name:** Knowledge Society

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- To acquaint the students with the characteristics and the emerging development in the knowledge society.
- To educate the students regarding the changing role of Libraries in the emerging knowledge society.

**Evaluation Criteria**

- Minimum Compulsory Attendance -75%
- Mid – term examination – 25%
- End – term examination – 50%
- Activities – 25% (details given as under)
  - Assignment – 10%
  - Library Work –5%
  - Seminar – 5%
  - Quiz – 5%

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Assignment: 5%
  - ii. Library Work: 5%
  - iii. Surprise Test: 5%
  - iv. Library visit survey report: 10%

**Course Content:****Unit I: Evolution of knowledge Society & Indicators**

- Introduction to various types of societies and their evolution.
- Indicators of the knowledge society.
- Advances in ICTS and emergence of knowledge society.

**Unit II : Changing Role of Libraries in the knowledge Society**

- Libraries and information centres in the knowledge society.
- Information explosion and emerging challenges for libraries & information centres.
- Unbundling of content and challenges for knowledge organization.

**Unit III: Virtual Library environment and knowledge and knowledge organization**

- Virtual libraries; Need and importance.
- Creation and organization of need based content.
- Introduction to emerging knowledge management tools.

**Unit IV: Role of Library & Information Professionals**

- Changing methods of information delivery in the Networked environment.
- Changing role of library and information professionals in the emerging knowledge society.

**Unit V: Knowledge society and Library & Information Policy Issues**

- Emergence of knowledge resources & service centres and policy issues.
- IFLA Manifestos on Libraries, UNESCO & Library policy issues.
- National knowledge commission and its recommendations for libraries.

**Prescribed Text books:**

1. American Library Association. Fundamentals of collection development and management. Chicago, A.L.A., 2004
2. Jenkins, Clare and Morley, Mary Ed. Collection Management In Academic Libraries, Bombay, Jaico Publishing House, 1996.
3. Colman, Michael. Collection Management Handbook. New York, Wiley John and Sons, 2003
4. Evans, G. Edward. Developing Library and Information Centre Collections, with the assistance of Margaret R. Zarnosky , 4 ed, Colorado, Libraries Unlimited a division of Greenwood Publishing Group, 1999

**Suggested Extra Readings:**

1. Gorman, G.E and Ruth H. Miller. Collection Management for 21<sup>st</sup> century: A handbook for librarians West port, Greenwood Publishers, 1997
3. Lancaster, F.W. If you want to evaluate your library...2 ed. Chicago, University of Illinois, 1988
4. Mahapatra, Piyush Kanti. Collection Management in Libraries, New Delhi, Ess Ess Publication, 1999.
5. Sharma, Pandey S.K. Electronic media and Library Information Technology (Enc. of Library Systems and Networks series). New Delhi, Anmol, 2000

## Digital library (practical)

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**Course Code:** LIS 504

**Course Name:** Digital library (practical)

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:**

- Familiarly with the digital library software.
- To make them familiar with crating the digital library

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Assignment: 5%
  - ii. Library Work: 5%
  - iii. Surprise Test: 5%
  - iv. Mini Project: 10%

**Course Content:**

**UNIT - I:** Digital library software Open source software – Basic features of GSDL, DSpace

**UNIT-II:** Creating digital library using GSDL

**UNIT-III:** Creating institutional repository using GSDL

**UNIT-IV:** Creating institutional repository using Dspace

**UNIT-V:** Creating institutional repository using Dspace

**Prescribed Text Books:**

1. GSDL Manual
2. Dspace Manual

# School of Physical & Material Sciences



## Department of Physics & Astronomical Science

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### School of Physical & Material Sciences

Name of the Department: **Department of Physics & Astronomical Sciences**

Name of the Programme of Study: **MSc (Physics)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	PAS 406	Statistical Mechanics	2	PAS 407	Dr Ayan Chatterjee
2	PAS 407	Advanced Quantum Mechanics	2	PAS 407	Dr Surender Verma
3	PAS 408	Elementary Condensed Matter Physics	2	NA	Dr Jagdish
4	PAS 409	Nuclear and Particle Physics	2	NA	Dr Dalip Singh
5	PAS 424	Advanced Classical Electrodynamics	2	PAS 401, PAS 403	Dr B. C. Chauhan
6	PAS 414	Computer Simulations in Physics	2	NA	Dr O.S.K.S. Sastri, Dr Surender Verma and Dr Jagdish
7	PAS 423	Modern Physics Lab	2	NA	Dr K.B. Joshi, Dr B.C. Chauhan, Dr Ayan and Dr Dalip

**Courses for Semester 4**

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	PAS 521	Atomic and Molecular Spectroscopy	2	PAS 407	Dr O S K S Sastri
2	PAS 527	Theoretical Nuclear Physics	4	PAS 505	Dr Dalip Singh
3	PAS 530	Soft Condensed Matter Physics	2	PAS 503	Dr Jagdish
4	PAS 531	Mesoscopic Physics	2	PAS 503	Dr Jagdish
3	PAS 532	Quantum Many Body Physics	4	PAS 524	Dr K B Joshi
4	PAS 545	Unitary Symmetries in Quantum Physics	2	PAS 509, PAS 528	Dr Surender Verma
5	PAS 546	Neutrino Physics	2	PAS 407, PAS 505	Dr Surender Verma
6	PAS 549	Elementary Particles and Interactions	4	PAS 505	Dr B C Chauhan
7	PAS 553	Standard Model, Higgs Physics and Beyond	4	PAS 505	Dr Ayan Chatterjee
8	PAS 548	Project Work	4	NA	All members of dept
9	PAS 520	Seminar	4	NA	All members of dept

**University Wide Courses**

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	PAS	A lab Course on Computational Methods in Physics	4	NA	Dr O S K S Sastri

## Elementary Condensed Matter Physics

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**Course Code:** PAS-408

**Course Name:** Elementary Condensed Matter Physics

**Credits Equivalent:** 2 Credits (2 credit theory + 2 credit lab, One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is devoted to:

- Introduction of internal structure of atoms in solids (periodic and non-periodic).
- Characterization of the structural properties using diffraction techniques concept of reciprocal lattice.
- Understanding various types of bonding among the atomic constituents of matter.
- Effect of atomic vibrations in crystals.
- Thermal and electrical properties of solids.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage.

End Term Examination at the end of 10<sup>th</sup> week for 100 marks (40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage.

Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## **Course Contents:**

### **Unit I: Crystal structures and their characterization (6 hours)**

Fundamentals of crystallography and some examples of crystalline structures: Concept of lattice and basis, space group, examples of 1D, 2D and 3D periodic structures in recent materials. Diffraction techniques for structural characterization of crystals: Structure factors and atomic form factors. Reciprocal lattice and Brillouin zones.

### **Unit-II: Crystal binding and elastic constants (5 hours)**

Crystalline binding of inert gases, ionic and covalent solids and metals. Madelung Energy, Hydrogen bonding, atomic and ionic crystal radii. Elastic strains, compliance and stiffness constant.

### **Unit-III: Crystal vibrations and thermal properties (5 hours)**

Vibrations of crystals with monoatomic and diatomic basis, optical and acoustical phonon branches. Quantization of elastic waves and phonon momentum. Inelastic scattering by phonons. Phonon heat capacity, density of states, Debye and Einstein models for specific heat. Thermal conductivity and phonons.

### **Unit IV: Electrical properties of metals (4 hours)**

Drude theory of conductivity in metals: Independent and free electron approximations, DC electrical conductivity, Hall effect and magnetoresistance, AC electrical conductivity, Dielectric function, Plasma resonance, thermal conductivity and thermoelectric effects. Sommerfeld theory of metals: Fermi-Dirac distribution function and electronic density of states and Fermi energy. Thermal properties of free electron gas. Wiedmann-Franz law.

### **Prescribed text books:**

1. Introduction to solid state physics, Charles Kittel, John Wiley edition
2. Solid state physics, Ashcroft and Mermin, Harcourt College Publishers

### **Suggested extra readings:**

1. Solid state physics, A. J. Dekker, Prentice Hall
2. Understanding solids: The science of materials, Richard J. D. Tilley, John Wiley and Sons

## Molecular Simulations in Material Science

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS-552

**Course Name:** Molecular Simulations in Material Science

**Credits Equivalent:** 4 Credits (2 credit theory + 2 credit lab, One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** This course provides an introduction to modelling and simulation approaches in material science. The course will cover systematic introduction to the theory and algorithms used to implement various approaches in solving many body problems in classically and quantum mechanically. The classical part will cover well known molecular dynamics methods and quantum mechanical part will be based upon density functional based approach. This approach is an exciting new idea that allows designing of materials with desired properties from the bottom up approach.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage.

End Term Examination at the end of 10<sup>th</sup> week for 100 marks (40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage.

Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

#### Course Contents:

##### Unit-I: Electrons in a lattice (8 hours)

Electrons in a 1D periodic lattice: Bloch theorem, Energy levels in a periodic array of quantum wells, electron tunneling and energy bands, tight binding approximation, plane waves and nearly free electron approximation, dynamical aspects of band theory of electrons.

**Unit-II: The one electron approximation (10 hours)**

Free electron and independent approximations, Born Oppenheimer approximation, Hartree equations, identical particles and determinantal wavefunctions. Hartree-Fock equations: Variational approach, ground state energy, ionization energy and Koopmans theorem. Excited states and transition energy. Hartree Fock equations and transition energies in closed shell systems. Hartree-Fock-Slater and Hartree-Fock-Roothaan methods. Beyond one electron approximation.

**Unit-III: Basis sets (4 hours)**

Slater type orbitals, Gaussian type orbitals, plane waves, Numerical basis functions, augmented plane waves (APW), linearized augmented plane waves (LAPW).

**Unit-IV: Density functional theory (12 hours)**

Electronic properties and phase diagram of homogeneous electron gas. Orbital free density functional theory: Thomas Fermi theory. Hohenberg Kohn theorems. Kohn Sham methods. Exchange and correlation holes, Exchange correlation functional: Local density approximation. Gradient correction methods: Generalised gradient approximation (GGA), meta-GGA, hyper-GGA. Limitations of density functional theory.

**Unit IV: Fundamentals of Molecular dynamics simulations (6 hours)**

Molecular dynamics approach, interaction potentials and truncation schemes. Equations of motion for classical molecular dynamics simulations. Initial and boundary conditions, force calculations and integrators (Verlet, velocity Verlet, leap frog algorithms). Calculation of properties. The basic ideas of Ab-initio molecular dynamics.

**Prescribed text books:**

1. Solid state physics, Guiseppe Grosso and Guiseppe Pastori Parravicini, Academic Press (2003)
2. Introduction to computational chemistry, Frank Jensen, 2<sup>nd</sup> edition, John Wiley and Sons Ltd.
3. Introduction to computational physics, T. Pang, Cambridge University press

**Suggested extra readings:**

1. Methods of electronic structure calculations, Springborg Michael, John Wiley and Sons
2. The electronic structure of solids, B.R. Coles and A. D. Caplin, Edward Arnold publishers
3. Electronic structure: Basic theory and practical methods by Richard M. Martin, Cambridge University press
4. A Bird's-Eye View of Density-Functional Theory, Klaus Capelle, arXiv:cond-mat/0211443 (2006)
5. The density functional formalism, its applications and prospect, R.O. Jones and O. Gunnarsson, Reviews of Modern Physics, Vol. 61, No. 3, July 1989
6. Iterative minimization techniques for ab initio total-energy calculations: molecular dynamics and conjugate gradients, M.C. Payne et al. Reviews of Modern Physics, Vol. 64, No. 4, October 1992
7. Nobel Lecture: Electronic structure of matter-wave functions and density functional, W. Kohn, Rev. Mod. Phys., Vol. 71, No. 5, October 1999
8. The ABC of DFT, Kieron Burke and friends, "<http://chem.ps.uci.edu/~kieron/dft/book/>"
9. Ab-initio molecular dynamics, Dominik Marx and Jurg Hutter, Cambridge University press

## Unitary Symmetry in Quantum Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 545  
**Course Name:** Unitary Symmetry in Quantum Physics  
**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures/organised classroom activity/contact hours; 5 hours of laboratory work/practical/field work/Tutorial/teacher-led activity and 15 hours of other workload such as independent individual/group work; obligatory/optional work placement; literature survey/ library work; data collection/field work; writing of papers/projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

Symmetry plays an important role in mechanics, from fundamental formulations of basic principles to concrete applications, such as stability criteria for rotating structures. The theme of this course is to emphasize the role of symmetry in various aspects of quantum mechanics. Also, to discuss that how symmetry leads to conserved quantities (Noether theorem)? Discrete symmetries, symmetries of the Schrodinger equation, symmetry and degeneracy of states will be discussed. Assuming that the students have prerequisite background of group theory, it is planned to discuss rotation symmetry, angular momentum and  $SO(3)$  group. Then we will move towards the symmetries of the Dirac equation. Finally, we will discuss special unitary  $SU(2)$  and  $SU(3)$  symmetry and their relation with particle physics.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%

(A Teacher may specify break up of internal assessment depending upon the requirement of the course including class attendance)

## COURSE CONTENTS

### **UNIT-I Symmetries and Conservation Laws (4 hours)**

- Symmetries in Classical Physics
- Symmetries and their physical meaning-Noether Theorem
- Time invariant equations of motion
- Unitary translational operator
- Symmetry and degeneracy of states
- Discrete symmetries

### **UNIT-II Angular momentum and the Group SO(3) (4 hours)**

- Wigner theorem
- Rotations in Euclidian space
- Isotropy of Space
- Infinitesimal and finite rotations
- An isomorphism of the rotation group

### **UNIT-III Symmetries and Further Properties of the Dirac Equation-I (4 hours)**

- Active and Passive Transformations,
- Transformations of Vectors
- Invariance and Conservation Laws
- The General Transformation
- Rotations
- Translations

### **UNIT-IV Symmetries and Further Properties of the Dirac Equation-II (4 hours)**

- Spatial Reflection (Parity Transformation)
- Charge Conjugation
- Time Reversal (Motion Reversal)
- Reversal of Motion in Classical Physics
- Time Reversal in Quantum Mechanics
- Time-Reversal Invariance of the Dirac Equation
- Racah Time Reflection, Helicity, Zero-Mass Fermions



## UNIT-V The SU(2) and SU(3) Symmetry

(4 hours)

- Group U(n) and SU(n)
- Generators of U(n) and SU(n)
- Linear independence of the generators
- Lie algebra of SU(2) group, SU(3) group
- The generators of SU(3)
- Linear independence of the generators

### Recommended Books:

1. Walter Greiner and Berndt Muller, *Quantum Mechanics Symmetries*, Springer
2. H. F. Jones, *Groups, Representations and Physics*, 2<sup>nd</sup> edition, Institute of Physics Publishing
3. Franz Schwabl, *Advanced Quantum Mechanics*, Springer

### Extra Suggested Readings:

1. M. Chaichian and R. Hagedorn, *Symmetries in Quantum Mechanics*, Institute of Physics Publishing.  
Volker Heine, *Group Theory in Quantum Mechanics*, Pergamon Press.

## Neutrino Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 546  
**Course Name:** Neutrino Physics  
**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures/organised classroom activity/contact hours; 5 hours of laboratory work/practical/field work/Tutorial/teacher-led activity and 15 hours of other workload such as independent individual/group work; obligatory/optional work placement; literature survey/library work; data collection/ field work; writing of papers/projects/dissertation/thesis/ seminars, etc.)

#### Course Objectives:

The study of neutrinos is an extremely active field of experimental and theoretical particle physics today. Neutrinos themselves, despite being the second most common particle in the universe, are the least known particle in the Standard Model. It is only about decade that we convincingly showed that they had a mass - the previous 70 years we were under the assumption that they didn't. There is still much we don't know. In it I will outline what we know about neutrinos, theoretical status of neutrinos, look at major experiments and what they have shown us over the last decade, look at experimental techniques, and try to show what we have left to find out.

**Prerequisite:** course on particle physics, Quantum Field theory.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 100 marks (40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage

3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## COURSE CONTENTS

### **UNIT-I Neutrinos: An Introduction**

**(5 hours)**

- Pauli's hypothesis of neutrino
- Fermi theory of beta decay
- Difference between  $\nu_e$  and  $\bar{\nu}_e$  and solar neutrino detection
- Discovery of parity violation in weak interaction
- Direct measurement of neutrino helicity
- Discovery of weak neutral current and weak gauge boson
- Number of neutrino flavour from  $Z_0$  decay width

### **UNIT-II Neutrino Sources**

**(3 hours)**

- Solar neutrinos: pp, CNO neutrinos, luminosity constraint, Solar neutrino problem (SNP)
- Atmospheric neutrinos and Atmospheric neutrino problem (ANP)
- Geoneutrino, Supernova neutrinos, reactor neutrinos

### **UNIT-III Neutrino mass terms**

**(3 hours)**

- Dirac mass term, Majorana mass terms
- Neutrino mass term in simplest case of two neutrino fields
- Dirac and majorana mass terms
- Seesaw mechanism of neutrino mass generation

### **UNIT-IV Neutrino Mixing matrix**

**(3 hours)**

- Number of phases and angles in matrix U
- CP conservation in the leptonic sector
- Standard parameterization of mixing matrix U
- Models of neutrino masses and mixings

**UNIT-V Neutrino Flavour Oscillation: Vacuum and matter case****(6 hours)**

- Flavour neutrino states
- Oscillation of flavour neutrinos: Two neutrino case
- Two neutrino oscillation: CP violation in the lepton sector
- Three neutrino oscillation in the leading approximation
- Evolution equation of neutrino in matter
- Propagation of neutrino in matter of constant density
- Adiabatic neutrino transition in matter: Mikheev-Smirnov-Wolfenstein (MSW) effect

**Recommended Books:**

- Introduction to Physics of Massive and Mixed neutrinos, S. Bilenky, Springer.
- Neutrino Physics, by Kai Zuber.
- Physics of Massive neutrinos, by F. Boehm and P. Vogel.

**Extra Suggested Readings:**

- Gauge Theory of elementary particle physics, T. Cheng and L. Lee
- Modern Elementary Particle Physics, G. Kane
- Fundamentals of Neutrino Physics and Astrophysics, by Guinzi and Kim

## Classical Dynamical Systems

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 604  
**Course Name:** Classical Dynamical Systems  
**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures/organised classroom activity/contact hours; 5 hours of laboratory work/practical/field work/Tutorial/teacher-led activity and 15 hours of other workload such as independent individual/group work; obligatory/optional work placement; Reading/listening to self-learning modules, literature survey/library work; data collection/field work; writing of papers/projects/dissertation/thesis/seminars, etc.)

**Course Objectives:** The present course has a twofold role in preparing the student for further study of modern physics. Understanding the concepts of CM which serves as a springboard for the various branches of modern physics. To name a few, the Hamilton Jacobi theory and the principle of least action provide the transition to wave mechanics while Poisson brackets and canonical transformations are invaluable in formulating the quantum mechanics. Secondly, student will learn various mathematical techniques such as variational and differential techniques necessary for quantum mechanics while still working in the paradigm of classical mechanics. Lagrangian and Hamiltonian formulation of the dynamical systems are very imperative to further develop and understand quantum field theories. In the present course, we will try to learn few of these techniques. We will start with the lagrangian formulation of the dynamical systems then central force problem will be discussed. Euler angles, Cayley-klein parameters and rate of change of a vector: coriolis force will be discussed in the third unit. In the last unit, action principle and Hamilton equation of motion will be discussed.

#### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### **Evaluation Criteria:**

1. Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 100 marks (40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage

3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## COURSE CONTENTS

### **Unit 1: Variational Principles and Lagrange's equations (6 hours)**

- Hamilton principle
- Derivation of Lagrange's equations from Hamilton principle
- Non-holonomic systems
- Conservation theorem and symmetry properties

### **Unit 2: The Central force problem (6 hours)**

- Reduction to equivalent one body problem
- Equation of motion and first integrals
- Classification of orbits
- Virial theorem
- Bertrand's theorem, kepler problem

### **Unit 3: Kinematics of Rigid body (4 hours)**

- Orthogonal transformation: Euler angles
- Caley-Klein parameters
- Euler theorem, Finite rotation
- Rate of change of vector: Coriolis force

### **Unit 4: Hamilton equation of motion (4 hours)**

- Legendre transformation and the Hamilton equation of motion
- Principle of least action
- Canonical transformations
- Poisson bracket

#### **Prescribed Text Books:**

1. H. Goldstein, Classical Mechanics.
2. L. D. Landau and E. M. Lifshitz, Mechanics, Volume 1 of course in theoretical physics

#### **Suggested extra readings:**

1. Classical dynamics of particles and systems, J. Marion and S. Thornton, Brooks-Cole.
2. Introduction to classical mechanics, R. G. Takwale and P. S. Puranik, TMH.
3. Classical mechanics for physics graduate students, Ernesto Corinaldesi, World Scientific publishing.
4. Introduction to classical mechanics: with problems and solutions, David Morin, Cambridge University Press.

## Quantum Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS  
**Course Name:** Quantum Physics  
**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures/organised classroom activity/contact hours; 5 hours of laboratory work/practical/field work/Tutorial/teacher-led activity and 15 hours of other workload such as independent individual/group work; obligatory/optional work placement; Reading/listening to self-learning modules, literature survey/library work; data collection/field work; writing of papers/projects/dissertation/thesis/seminars, etc.)

**Course Objectives:** Quantum physics allows us to understand the nature of the physical phenomena which govern the behavior of solids, semiconductors, lasers, atoms, nuclei, sub nuclear particles, and light. In the present course, the basic formalism of the fundamentals of quantum physics will be discussed using an original approach which relies primarily on an algebraic treatment and on the systematic use of symmetry principles.

The study of quantum mechanics and its applications pervades much of the modern undergraduate course in physics. Virtually all undergraduates are expected to become familiar with the principles of non-relativistic quantum mechanics, with a variety of approximation methods and with the application of these methods to simple systems occurring in atomic, nuclear and solid state physics. This core material is the subject of this course.

### **Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

### **Evaluation Criteria:**

1. Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 100 marks (40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## **COURSE CONTENTS**

### **Unit 1: Transition from Classical to quantum mechanics**

**(4 hours)**

- Canonical transformation
- Canonical momentum
- Poisson brackets
- Hilbert space: Kets, bras and operators
- Basis kets and matrix representations
- Wave functions in position and momentum space

### **Unit 2: Quantum Dynamics**

**(5 hours)**

- Time evolution and Schrodinger equation
- Schrodinger and Hiesenberg picture
- Simple harmonic oscillator
- Propagators and Feynmann path integrals
- Potentials and gauge transformations

### **Unit 3: Theory of angular momentum**

**(4 hours)**

- Rotations and angular momentum commutation relations



- Spin  $\frac{1}{2}$  systems and finite rotations
- SO(3), SU(2) and Euler rotations
- Addition of angular momentum: Clebsch-Gordon (Wigner) coefficients

**Unit 4: Symmetry in Quantum mechanics**

**(3 hours)**

- Symmetries, Conservation laws and degeneracies
- Discrete symmetries, Parity or space inversion
- Lattice translation as a discrete symmetry
- Time reversal discrete symmetry

**Unit 5: Approximate methods**

**(4 hours)**

- Time independent perturbation theory: Non-degenerate case
- Time independent perturbation theory: degenerate case
- Fine structure and Zeeman effect
- Variational methods
- Time dependent potentials: The interaction picture

**Prescribed Text Books:**

1. Sakurai, J.J.: Modern Quantum Mechanics, Addison-Wesley publishing company, (revised edition).
2. Griffiths, D. J: Introduction to Quantum Mechanics, Pearson Prentice Hall, Inc., (2005)

**Suggested extra readings:**

1. Dirac P. A. M.: Lectures on quantum mechanics, Dover edition, 2001.
2. David Atkinson: Quantum mechanics: A self contained course, Vol. 1, Rinton press, 2001.
3. Shankar R.: Principles of quantum mechanics, plenum press, 2<sup>nd</sup> edition.
4. Sakurai J. J.: Advanced quantum mechanics.
5. Richard L. Liboff: Introductory quantum mechanics, Addison-Wesley publishing company.

## Atomic and Molecular Spectroscopy

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 521

**Course Name:** Atomic and Molecular Spectroscopy

**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Understand the interaction between radiation and matter
- Explain the vibration-rotation spectrum in Diatomics
- Discuss Electronic spectra of Diatomics and Raman Spectroscopy
- Provide overview of NMR and ESR and their importance

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

- Mid Term Examination at the end of 5<sup>th</sup> week for 30 marks: 25% weightage
- End Term Examination at the end of 10<sup>th</sup> week for 60 marks (20 marks from portions before mid-term and 40 marks from portions after mid-term): 50% weightage
- Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## Course Contents:

### Unit 1: Interaction of Radiation with Matter (5 hours)

- Quantum Theory of Molecules in Static Electric Fields
- Time-dependent perturbation theory of radiation-matter interactions
- Selection rules for one-photon transitions

### Unit 2: Rotation and Vibration in molecules (5 hours)

- Born Oppenheimer Principle
- Diatomic rotational energy levels and applications
- Vibrational spectroscopy in diatomics
- Vibration- Rotation spectra in diatomics
- Centrifugal distortion constant and the Anharmonic Oscillator

### Unit 3: Electronic Spectra of Diatomics (5 hours)

- Symmetry and electronic structure in diatomics
- Correlation of molecular states with separated-atom states
- LCAO—MO wave functions in diatomics
- Electronic spectra of diatomics
- Angular momentum coupling cases

### Unit 4: Raman Spectroscopy, NMR and ESR (5 hours)

- Theory of two photon process
- Two Photon absorption
- Raman spectra
- NMR and ESR

#### Prescribed Textbooks:

- Walter S. Struve, *Fundamentals of Molecular Spectroscopy*, John Wiley and Sons, 1989.
- J Michael Hollas, *Basic Atomic and Molecular Spectroscopy*, Royal Society of Chemistry, 2002.

#### Other Resources/Reference books:

1. Michael R Muller, "Fundamentals of Quantum Chemistry: Molecular Spectroscopy and Modern Electronic Structure Computations", 1st Edition, Springer, 2001.
2. [Elaine M. McCash](#), [Colin N. Banwell](#), "Fundamentals of Molecular Spectroscopy", 5<sup>th</sup> Edition, Mc-Graw Hill Education, 2013.
3. [G. Aruldas](#), *Molecular Structure and Spectroscopy*, 2<sup>nd</sup> Edition, PHI Learning, 2009.

## Elements of Condensed Matter Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS408  
**Course Name:** Elements of Condensed Matter Physics  
**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce concept of periodic and non-periodic solids
- Introduce various types of crystal structures for periodic solids and techniques of structure determination
- Understand various type of bonding in solids
- Understand lattice and thermal properties of solids
- Understand conduction in semiconductors and concepts underlying.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination at the end of 5<sup>th</sup> week for 30 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 60 marks (20 marks from portions before mid-term and 40 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

**Course Contents:****Unit 1: Crystal Structures****(4 hours)**

- Crystalline and non-crystalline solids
- Basis and Lattice concepts; lattice types; Bravais lattices, unit and primitive cells
- Simple crystal structures ; Lattice symmetries; absence of five-fold symmetry, Miller indices
- Closely packed structures and characteristics
- Simple crystal systems

**Unit 2: Bragg diffraction and Reciprocal lattice****(4 hours)**

- Bragg's law and Laue diffraction
- Experimental techniques using X-rays, neutrons and electrons
- Experimental diffraction methods: Laue method, Rotating crystal method, Powder method
- Reciprocal lattice and its properties;
- Brillouin zone and its construction, Brillouin zone of SC, BCC & FCC lattices;

**Unit 3: Structure factors and Bonding in solids****(4 hours)**

- Structure Factor and Fourier synthesis
- The five crystal types; inert gas crystals– properties
- Van der Waals–Bonding; Lennard Jones potential
- Cohesive energy; bulk modulus and compressibility; ionic crystals

**Unit 4: Lattice vibrations and Thermal properties****(4 hours)**

- Vibrations of mono atomic lattices; lattice with two atoms per primitive cell; quantization of lattice vibrations
- Phonon momentum; inelastic scattering of neutrons by phonons
- Lattice heat capacity; Planck distribution; Einstein's model
- Enumeration of normal modes; density of modes in one and three dimensions
- Debye model of lattice specific heat capacity; Debye  $T^3$  law
- Qualitative treatment of heat capacity of glasses and amorphous solids

**Unit 5: Semiconductor crystals:****(4 hours)**

- Conduction in semiconductors, Intrinsic and extrinsic semiconductors
- Carrier concentration in Intrinsic and extrinsic semiconductors
- N and p type semiconductors Drude theory: Basic assumptions of the Drude model; DC electrical conductivity in metals
- Effect of electric and magnetic field on Semiconductors: Hall effect and magneto-resistance

**Prescribed Textbooks:**

1. C. Kittel: Introduction to Solid State Physics, V Edition, Wiley Eastern, 1976.
2. Omar Ali: Introduction to Solid State Physics, Pearson Education, 2003

**Reference Books:**

1. J.S. Blakemore: Solid State Physics, II Edition, Cambridge University Press, 1985
2. L.V. Azaroff: Introduction to Solids, Tata-McGraw Hill, 1978
3. N. W. Ashcroft and N.D. Mermin, Solid State Physics, Harcourt Asia Pvt Ltd. 2001

## Nuclear and Particle Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 409

**Course Name:** Nuclear and Particle Physics

**Course Duration:** 10 weeks (20 Hrs.)

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; Reading/listening to self-learning modules, literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

The course is designed to prepare the students for their CSIR-UGC National Eligibility Test (NET) for Junior Research Fellowship and Lecturer-ship.

- Basic nuclear properties like size, shape, charge distribution, spin and parity
- Binding energy, semi-empirical mass formula; Liquid drop model
- Nature of the nuclear force, form of nucleon-nucleon potential, Deuteron problem
- Nuclear reactions, reaction mechanisms, Nuclear Models
- Theories and spectra of Alpha, Beta and Gamma decays and their selection rules
- Elementary particles, C, P, and T invariance, Symmetry groups, parity non-conservation in weak interaction, Quark Model

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%

Teacher may specify break up depending upon the requirement of the course including class attendance.

## Course Contents

### Unit 1: General Properties of Nucleus

(4 hours)

- Nuclear shapes and sizes: matter and charge distribution
- Quantum properties: parity, spin and magnetic dipole moment
- Mass spectroscopy, binding energy, Fusion and fission
- Semi-empirical mass formula: the Liquid drop model.

### Unit 2: Nuclear Interaction

(6 hours)

- Classification of fundamental forces, Nature of the nuclear forces, Qualitative aspects of nuclear force: Strength and range
- Two-body bound state problem (deuteron),
- Nucleon-nucleon scattering at low energies
- Saturation of nuclear forces and charge-independence and charge-symmetry
- Nuclear reaction mechanisms, Compound nucleus reaction
- Direct nuclear reactions and heavy ion reactions.

### Unit 3: Nuclear Structure

(5 hours)

- Evidence of shell structure, single particle shell model, its validity and limitations
- Collective Model: rotational spectra
- Theory of  $\alpha$ -decay and  $\alpha$ -ray spectra
- Fermi theory of  $\beta$ -decay and selection rules, conditions for spontaneous emission, continuous  $\beta$ -ray spectrum and neutrino hypothesis
- Theory of  $\gamma$ -decays and selection rules.

### Unit 4: Elementary particles

(5 hours)

- Classification and properties of elementary particles and their interactions, quarks, leptons, Spin and parity assignments, isospin, strangeness, Gell-Mann-Nishijima formula, quantum numbers and their conservation laws.
- C, P, and T invariance and applications of symmetry arguments to particle reactions, parity non-conservation in weak interaction, Symmetry Groups-SU(2), SU(3).
- Quark Model: Evidence of fractional charges and spin  $\frac{1}{2}$ . Rosenberg formula.

#### Prescribed Text Books (TB):

1. K.S. Krane: **Introductory Nuclear Physics**, John Wiley & Sons Ltd.
2. B.R. Martin: **Nuclear and Particle Physics**, John Wiley & Sons Ltd.

#### Suggested Extra Readings (RB):

1. D. Griffiths: **Introduction to Elementary particles**, John Wiley & Sons, 1987.
2. H.A. Engle: **Introduction to Nuclear Physics**, Addison-Wesley (1971).
3. V.K. Mittel, R.C. Verma and S.C. Gupta: **Nuclear & Particle Physics**, PHD.
4. D.C. Tayal: **Nuclear Physics**, Himalaya Publishing House Pvt. Ltd (2008).
5. M.P. Khanna: **Particle Physics**, PHD.

## Computer Simulations in Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 414

**Course Name:** Computer Simulations in Physics

**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce Model Based Simulations to solve Classical Mechanics Problems
- Perform Virtual Experiments

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination at the end of 5<sup>th</sup> week for 30 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 60 marks (20 marks from portions before mid-term and 40 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.



## Course Contents:

### Unit 1: Model Based Simulations in Physics

(10 hours)

- **Model Based Simulations**
  - **Simple Harmonic Motion**
    - **Mass-Spring System**
      - Equation of Motion
      - Simulation model in scicos
      - Example
      - Plots of  $x$  vs  $t$ ,  $v$  vs  $t$  and  $a$  vs  $t$
    - **Simple Pendulum**
      - Equation of Motion
      - Simulation model in scicos
      - Example
      - Plots of  $x$  vs  $t$ ,  $v$  vs  $t$  and  $a$  vs  $t$
    - **Phase Trajectory: Plot of  $x$  vs  $v$**
  - **Damped Harmonic Oscillator**
    - Equation of Motion
    - Simulation model in Scicos
    - Example:
      - Under-Damped Oscillations
      - Critically-Damped Oscillations
      - Over-Damped Oscillations
  - **Motion of falling objects in resistive medium**
    - Effect of Air Resistance on a Parachutist
      - Equation of Motion
      - Simulation model in scicos
      - Example
      - Plots of  $y$  vs  $t$
    - **Effect of Air Resistance on a Bicycle Rider**
      - Equation of Motion
      - Simulation model in scicos

- Example
- Plots of  $y$  vs  $t$
- **Projectile Motion**
  - **Without air resistance**
    - Equation of Motion
    - Simulation model in scicos
    - Example
    - Plots of  $x$  vs  $t$ ,  $y$  vs  $t$  and  $x$  vs  $y$
  - **With air resistance**
    - Equation of Motion
    - Simulation model in scicos
    - Example
    - Plots of  $x$  vs  $t$ ,  $y$  vs  $t$  and  $x$  vs  $y$
- **Motion of Charged particles in em fields**
  - **In constant electric field**
    - Equation of Motion
    - Simulation model in scicos
    - Example
    - Plot of  $x$  vs  $t$
  - **In constant magnetic field**
    - Equation of Motion
    - Simulation model in scicos
    - Example
    - Plot of Trajectory
  - **In crossed electric and magnetic fields**
- **Study of Electrical Circuits**
  - **Study of RC circuit**
    - Equation of Motion
    - Simulation model in scicos
    - Example
    - Plots of voltage vs time across  $R$  and  $C$
    - Plot of  $V_R$  vs  $V_C$

- **Study of RL circuit**
  - Equation of Motion
  - Simulation model in scicos
  - Example
  - Plots of  $V$  vs  $t$  across both  $R$  and  $L$
- **Study of LC Oscillations**
  - Equation of Motion
  - Simulation model in scicos
  - Example
  - Plots of  $V_C$  vs  $t$  and  $V_L$  vs  $t$
- **Study of LCR Circuits**
  - Series Resonance
  - Parallel Resonance

## Unit 2: Virtual Experiments

(10 hours)

- **Study of Large Angle Oscillations**
  - Equation of Motion
  - Simulation model in scicos
  - Example
  - Plots of  $\theta$  vs  $t$ ,  $x$  vs  $t$  and  $y$  vs  $t$
  - Plot of time period vs  $\theta$
- **Study of Forced Oscillator**
  - Equation of Motion
  - Simulation model in scicos
  - Example 1:  $F_0 \leq 1$ .
  - Plots of  $x$  vs  $t$  and  $v$  vs  $t$
  - Plots of amplitude ( $A$ ) vs freq ( $f$ ) and phase ( $\Phi$ ) vs  $f$
  - Example 2:  $F_0 > 1$  ( $=1.2, 1.5, 2.0, \dots$ ) leads to chaos
  - Plots of  $A$  vs  $f$  and  $\Phi$  vs  $f$
- **Study of Coupled Oscillator**
  - Equation of Motion
  - Simulation model in scicos
  - Example 1:  $m_1 = m_2$  and  $l_1 = l_2$

- Plots of  $x_1$  vs  $t$ ,  $x_2$  vs  $t$
- Example 2:  $m_1 \gg m_2$  and  $l_1 \neq l_2$
- Plots of  $x_1$  vs  $t$  and  $x_2$  vs  $t$  for various values of  $l_1$  keeping  $l_2$  constant
- Plot  $A$  vs  $f$  (resonance curve)
- Discussion
- **Study of Variable Mass-Spring System**
  - Equation of Motion
  - Simulation model in scicos
  - Example: Vary the rate of loss of mass
  - Plots of  $A$  vs  $t$
  - Discussion

## Advanced Classical Electrodynamics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 424

**Credits:** 02

**Course Name:** Advanced Classical Electrodynamics

**Course Duration:** 10 weeks

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours (#) of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; Reading/listening to self-learning modules, literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to cover the following topics:

- Electric and Magnetic Fields in Matter
- Electromagnetic Waves
- Potentials and Fields
- Radiation by Moving Charges
- Dynamics of Relativistic Particles and Fields

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 100 marks (about 40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: Assignments or other activities consisting of 4 or 5 problems to be done at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

**Course Contents:** Advanced Classical Electrodynamics: PAS 424

**2 Credits**

**Unit 1: Electromagnetic Waves**

**(4 hours)**

- Plane Waves in Non-Conducting Media, Polarization
- Poynting Vectors for Complex Fields
- Radiation Pressure
- Plane Waves in Conducting Media, Polarization

**Unit 2: Reflection and Refraction**

**(4 hours)**

- Reflection and Transmission for Normal Incidence on a Dielectric Medium
- Oblique Incidence- The Fresnel Equations
- Total Internal Reflection
- Reflection from a Metallic Surface

**Unit 3: Potentials and Fields**

**(2 hours)**

- Retarded Potentials, Jefimenko's equation
- Lienard-Wiechert Potentials
- Field of a Moving Point Charge

**Unit 4: Radiation by Moving Charges**

**(4 hours)**

- Electric Dipole Radiation, Magnetic Dipole Radiation
- Radiation by an Arbitrary Source
- Power Radiated by a Point Charge
- Abraham-Lorentz Formula, Physical Interpretation of the Radiation Reaction

**Unit 5: Relativistic Electrodynamics**

**(6 hours)**

- Relativistic Mechanics, Four Vectors in Electrodynamics
- EM Field Tensor
- Transformation Properties of the Field Tensor
- Lagrange Formulation for a Charged Particle in an EM field
- Lagrange Formulation of the Field Equations
- Energy Momentum Tensor of the EM Field

**Prescribed Text Books:**

1. Griffiths, D. J.: **Introduction to Electrodynamics**, Ed-III, Prentice Hall of India, 2000.
2. Heald, M.A. and Marion, J.B.: **Classical Electromagnetic Radiation**, Dover Pub. Inc., 2012.

**Suggested Extra Readings:**

1. Jackson. J.D.: **Classical Electrodynamics**, (III Edition) John Wiley & Sons, 1999.
2. Pedrotti, F.L. and Pedrotti, L. S.: **Introduction to Optics**, Prentice Hall, 1987.
3. Ashutosh, P.: Electromagnetism, EEE-PHI Learning, new Delhi 2009.
4. Chow, T.L.: Introduction to Electromagnetic Theory, Jones & Bartlett, Learning 2012.

## Theoretical Nuclear Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 527

**Course Name:** Theoretical Nuclear Physics

**Course Duration:** 20 weeks

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; Reading/listening to self-learning modules, literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to study the following:

1. Shell Model, its potential with spin-orbit interaction, magnetic dipole moments, electric quadrupole moment, Valence Nucleons, Even-Z, and Even-N and collective structure, nuclear vibrations, nuclear rotations, More Realistic Nuclear Models.
2. Nuclear Decay and radioactivity which include decay laws and beta and gamma-decay in detail
3. Nuclear reactions its kinematics, reaction cross-section its different types etc.
4. Nuclear Fission and its characteristics and applications.
5. Basic fusion process its characteristics, solar fusion, controlled fusion reactors, neutrino cross-sections, mass of the electron neutrino, neutrino mixing and neutrino etc.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%

Teacher may specify break up depending upon the requirement of the course including class attendance

## COURSE CONTENTS:

### Unit 1: Basic Nuclear Structure

(5 hours)

Shell Model, shell model potential, spin-orbit potential, magnetic dipole moments, electric quadrupole moment, Valence Nucleons, Even-Z, and Even-N and collective structure, Nuclear vibrations, nuclear rotations, More Realistic Nuclear Models:- Many particle shell model, Single-particle states in deformed nuclei.

### Unit 2: Nuclear Decay and radioactivity

(10 hours)

Radioactive decay law, Quantum theory of radiative decays, production and decay of radioactivity, Growth of Daughter activities, series of decay, Types of decays:  $\alpha$ -decay,  $\beta$ -decay,  $\gamma$ -decay, spontaneous fission, nucleon emission, branching ratios and partial half-lives, Natural radioactivity, radioactive dating Units for measuring radiation, Fermi theory of  $\beta$ -decay, Electron and positron energy spectra, Theory of  $\gamma$ -decay and internal conversion.

### Unit 3: Nuclear reactions

(10 hours)

Energetics of nuclear reactions, Isospin, reaction cross-sections, Coulomb scattering, nuclear scattering, Scattering and reaction cross section, The Optical Model, Compound nucleus reactions, direct reactions, resonance reactions, and heavy ion reactions.

### Unit 4: Nuclear Fission and Fusion

(15 hours)

Why Nuclei Fission, Characteristics of Fission, Energy In Fission, Fission And Nuclear Structure, Controlled Fission Reactions, Fission Reactors, Radioactive Fission Products, Fission Explosives. Basic fusion processes, characteristics of fusion, solar fusion, controlled fusion reactors

### Prescribed Text Books:

1. Introductory Nuclear Physics, K. S. Krane, John Wiley & Sons Ltd
2. An Introduction to Nuclear Physics by W. N. Cottingham, D. A. Greenwood, Cambridge University Press.

### Suggested Extra Readings:

1. Fundamentals In Nuclear Physics from Nuclear Structure to Cosmology Jean-Louis Basdevant, James Rich, Michel Spiro, Springer
2. B.R. Martin, Nuclear and Particle Physics, John Wiley & Sons Ltd.
3. R.R. Roy and B.P. Nigam, Nuclear Physics: Theory and experiment, New age International (P) limited, Publishers.



## Quantum Theory of Many body Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS532

**Course Name:** Quantum Theory of Many body Physics

**Course Duration:** 10 weeks

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce scales and complexity from microscopic to macroscopic.
- Introduce passage from wavefunction to the field operators- Second quantisation & Excitation.
- Introduction of Green function and visualisation of many body processes.
- Illustrate extension of quantum field theory to finite temperature.
- Illustrate S-matrix expansion & Feynmann diagrams in Condensed Matter Physics

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination at the end of 5<sup>th</sup> week for 30 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 60 marks (20 marks from portions before mid-term and 40 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## Course Contents:

### Unit 1: Scales, complexity and quantum fields: (8 hours)

- Time scales, Length scales, Particle number; Complexity and Emergence
- Overview of Quantum fields and Collective quantum fields
- Harmonic Oscillator: A zero dimensional field theory
- Collective modes: phonons; A charged harmonic oscillator in electric field
- The Thermodynamic limit  $L \rightarrow \infty$ ; Continuum limit  $a \rightarrow \infty$

### Unit 2: Conserved particles and some examples of second quantisation: (8 hours)

- Commutation and Anti-commutation Algebra; Fields as particle creation and annihilation operators
- The Jordan Wigner Transformation
- The Hubbard Model
- Non interacting particles in thermal equilibrium
- Fluid of non interacting Fermions; Fluid of Bosons

### Unit 3: Green functions at zero temperature: (8 hours)

- Representations, interaction representation; Driven Harmonic Oscillator
- S-Matrix, Wicks theorem and Green functions
- Green functions for free Fermions and Free bosons; Adiabatic concept
- Many particle Green functions

### Unit 4: Zero temperature Feynman diagrams and self-energy (8 hours)

- Derivation and Feynman diagrams ;Feynman diagram equations
- Feynman diagrams in momentum space
- Hartree-Fock energy, Electron in scattering potential
- Self energy, Hartree-Fock self energy

### Unit 5: Finite temperature Many body Physics (8 hours)

- Imaginary time and Imaginary time Green functions
- Matsubara representation,
- Feynman diagram expansion
- Feynman rules from functional derivatives and rules in momentum space
- Applications of Matsubara technique 1) HF at finite temperature; 2) Interacting electrons and phonons

### Prescribed Textbooks:

3. P. Coleman, *Introduction to Many Body Physics*, Cambridge University Press, 2012.
4. G.D. Mahan, *Many-Particle Physics*, 3<sup>rd</sup> edition, Kluwer Academic/Plenum Press, 2008.

### Other Resources/Reference books:

4. J.M. Ziman, *Advanced Quantum Field theory*, Cambridge University Press, 1977.
5. C. Nayak, *Quantum Condensed Matter Physics*, <http://stationq.cnsi.ucsb.edu/nayak/courses.html>, 2004.
6. D. W. Snoke, *Solid State Physics: Essential Concepts*, 1<sup>st</sup> edition, Pearson Education Inc. Addison-Wesley, 2009.

## Elementary Particles & Interactions

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 549

**Course Name:** Elementary Particles & Interactions

**Course Credits/ Duration:** 04 Credits/ 20 weeks (40 Hrs.)

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours (#) of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc...)

#### Course Objectives:

- An Overview of Elementary particle physics
- Symmetry Principles
- Lamb Shift, Feynman Calculus, Bjorken scaling, Renormalization
- Electrodynamics of Quark & Leptons
- Weak Interactions and Electroweak Standard Model
- Beyond the Standard Model

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

#### Evaluation Criteria:

1. Mid Term Examination at the end of 5<sup>th</sup> week for 70 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 100 marks (about 40 marks from portions before mid-term and 60 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## **Course Contents: Elementary Particles & Interactions (PAS 549)**

4 Credits

### **Unit-I: Introduction and Kinematics**

**(6 hours)**

- Historical Introduction of Elementary particles, Classification, Quantum numbers & Conservation laws, Four Forces, Range of Forces, Yukawa Potential, Zero Range Approximation, Why high energies? High energy units, Antiparticles: Relativistic wave equation, Hole theory and positrons

### **Unit-II: Symmetries**

**(6 hours)**

- Why Symmetries and Groups? Translational Invariance & Rotational Invariance, Parity, Charge conjugation, Time reversal, CP Violation, Symmetries and Groups, Combining Representations, The Group SU(2), SU(3) Flavour Symmetries with examples

### **Unit-III: Bound States and QED**

**(10 hours)**

- Fine Structures, Lamb Shift, Hyperfine Structures, Positronium, Colour, Quark-Anti-quark Potential, Light Quark Mesons and Baryons, Baryon Masses and Magnetic Moments, Feynman Calculus, Lifetimes and cross-sections, The Golden rule, The Feynman rules for a toy theory, Lifetime of the A, Inelastic electron and muon scattering, Bjorken scaling, Parton Model, Higher Order Corrections & Renormalization

### **Unit-IV: Weak Interactions**

**(8 hours)**

- Classification of weak Interactions, Charged Leptonic Weak Interactions, Decay of muon, neutron and pion, Charged Weak Interaction of Quarks, Charged Current Reactions, W-boson decays and Selection rules

### **Unit-V: Standard Model and Beyond**

**(10 hours)**

- Electroweak Theory and QCD: U(1) Terms, Neutral Currents, Charged Currents, Quark Lagrangian, Fermion Gauge Boson Lagrangian, Standard Model, Masses, Spontaneous Symmetry Breaking, The Abelian Higgs Mechanism, Higgs Mechanism in the Standard Model, Grand Unified Theories, Supersymmetry, Strings, Particle Cosmology, Neutrino Physics etc...

### **Text Books**

1. Griffiths, D.: **Introduction to Elementary particles**, John Wiley & Sons.
2. Martin, B.R. and Shaw, G.: **Particle Physics**, John Wiley & Sons Ltd. 2009.

### **Reference Books:**

1. Halzen, F. and Martin A.D.: **Quarks and Leptons**, John Wiley & Sons, 1984.
2. Donald, H. Perkins: **Introduction to High Energy Physics**, Cambridge University Press.
3. Gordon, Kane, **Modern Elementary Particle Physics**, Addison-Wesley Pub. Co. Inc. 1987.
4. Khanna, M.P.: **Introduction to Particle Physics**, PHI Learning Pvt. Ltd., New Delhi 1999.
5. Tayal, D.C.: **Nuclear Physics**, Himalaya Publishing House Pvt. Ltd.

## Classical Electromagnetic Theory

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS -605

**Course Name:** Classical Electromagnetic Theory

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to understand the

1. **Conservation laws**
2. **Potentials and Fields**
3. **Radiation**
4. **Electromagnetic Waves**

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student will not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%

(A Teacher may specify break up of internal assessment depending upon the requirement of the course including class attendance)

## Course Contents

### UNIT I Conservation laws

5 Hours

- Charge and energy: continuity equation and Pointing's theorem
- Momentum: Newton's Third Law in Electrodynamics, Maxwell's Stress Tensor, Conservation of Momentum, Angular Momentum

### Unit II Potentials and Fields

5 hours

- ❖ Symmetries
- ❖ The Potential Formulation:- Scalar and Vector Potentials, Gauge Transformations, Coulomb Gauge and Lorentz Gauge
- ❖ Continuous Distributions: - Retarded Potentials, Jefimenko's equations.
- ❖ Point Charges:- Lienard-Wiechert Potentials, the Fields of a Moving Point Charge

### Unit III Radiation

5 hours

- ❖ Dipole Radiation: - Electric Dipole Radiation, Magnetic Dipole Radiation, Radiation from an Arbitrary Source.
- ❖ Point Charges: - Power Radiated by a Point Charge, Radiation Reaction, the Physical Basis of the Radiation Reaction.

### UNIT IV Electromagnetic Waves

5 Hours

- ❖ Waves in One Dimension: - The Wave Equation, Sinusoidal Waves, and Boundary Conditions: Reflection and Transmission, Polarization.

### Case Study/Experiments/Field Work etc, if that is the requirement of the course:

#### Text Books:

1. Introduction to Electrodynamics by David J. Griffiths (Prentice Hall)
  2. Classical Electrodynamics by John David Jackson (Wiley India)
- (Restrict number of Text Books to less than three)

#### Additional Readings:

1. Electrodynamics and Classical Theory of Fields & Particles  
by A.O. BARUT  
(DOVER PUBLICATIONS, INC. NEW YORK)
2. Modern Electrodynamics  
by ANDREW ZANGWILL  
(Cambridge University Press)

## Advanced Computational Methods in Physics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** PAS 610

**Course Name:** Advanced Computational Methods in Physics

**Course Duration:** 10 weeks

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to:

- Introduce python programming basics
- Discuss computational techniques
- Develop algorithms for solving physics problems
- Understand statistical methods of analysis

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in the examination.

**Evaluation Criteria:**

1. Mid Term Examination at the end of 5<sup>th</sup> week for 30 marks: 25% weightage
2. End Term Examination at the end of 10<sup>th</sup> week for 60 marks (20 marks from portions before mid-term and 40 marks from portions after mid-term): 50% weightage
3. Continuous Internal Assessment: 8 Assignments consisting of 4 or 5 problems to be solved at the end of every week other than 5<sup>th</sup> and 10<sup>th</sup>. Best 6 performances will be considered for evaluation which makes up for the remaining 25% of the total 100 marks.

## Course Contents:

### Unit 1: Python Programming Basics

(8 hours)

- Hello, World!
- Variables and Types
- Lists
- Basic Operators
- String Formatting
- Basic String Operations
- Conditions
- Loops
- Functions
- Classes and Objects
- Dictionaries
- Modules and Packages

### Unit 2: Computational Techniques

(12 hours)

- Numerical Errors Analysis
- **Solution of Equations:** Simple iterative methods, Newton-Raphson Method, Secant Method, Newton Method in 2 dimensions,
- **Solution of Simultaneous equations:** Gauss-Jordan Elimination Method, Gauss-Seidel Iteration
- **Numerical Differential and Integration:** Differentiation using forward, backward and central difference methods, Trapezoidal rule, Simpson's Rule.
- **Solution of Differential Equations:-** Euler Method, Heuns Method, Runge-Kutta Method, Predictor-Corrector Method, Solution of Coupled differential Equations, and Second order differential equations.
- **Interpolation:** Lagranges interpolation and Newton Method, linear interpolation and higher degree interpolation
- **Data fitting:** least chi-square straight line fitting, least chi-square parabolic fitting

### Unit 3: Monte-Carlo Method:

(4 hours)

- Pseudo-Random Numbers and their generation methods, and properties,
- Monte-Carlo technique using random numbers.
- Importance Sampling
- Monte-Carlo method for Multi-dimensional integration
- Quantum Variational Monte-Carlo techniques



**Unit 4: Algorithm Development for Physics Problems****(8 hours)**

- Viscous Effects on One Dimensional Motion.
- Drag Effects on Two Dimensional Motion of Projectiles.
- Motion of Harmonic and Anharmonic Oscillators.
- Motion of Damped and Driven Oscillator.
- Analysis of voltage and currents in Simple Electrical circuits.
- Analysis of voltage and currents in RC and LR circuits with constant or variable resistance.
- Analysis of Electromagnetic Oscillations in LCR circuits: Damped and Driven Circuits.
- Quantum Mechanical Schrodinger Equation for Harmonic Potential (1-dim).
- Monte-Carlo Method for performing Multi-dimensional Integration.
- Monte-Carlo Technique for analyzing Nuclear Radioactive Decay.

**Unit 4: Statistical Analysis****(8 hours)**

- Descriptive analysis (mean, median, mode, co-relation, covariance, standard deviation)
- Multiple Regression Analysis
- Sampling techniques
- Different types of Hypothesis
- z-test, t-test
- ANOVA analysis
- chi-square analysis

**Prescribed Textbooks:**

- Nicholas J. Giordano and Hisao Nakanishi, "Computational Physics", Pearson, 2006
- R.C. Verma and Setul Verma, "C for Computer Simulations in Physics", Anamaya publishers, 2011.
- Allen Downey, "Think Python, How to Think Like a Computer Scientist, Version 1.1.19", Green Tea Press, Needham, Massachusetts, 2008

**Other Resources/Reference books:**

- [www.learnpython.org/](http://www.learnpython.org/)
- <http://www.tutorialspoint.com/python>
- Lecture Notes of Dr O S K S Sastri  
Hands on session on gnumeric for statistical analysis by Dr.OS.K.S. Sastri

# School of Social Sciences

## Department of Social Work

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### School of Social Sciences

Name of the Department: **Department of Social Work**

Name of the Programme of Study: **MSW**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite / Co-requisites if any	Teacher
1.	SWR 405	Basics of Research Methodology	2	NA	Prof A. Agrawal
2.	SWR 406	Social Case Work	2	SWR 401, SWR 409	Dr Asutosh Pradhan
3.	SWR 407	Social Group Work	4	SWR 401, SWR 409	Mr Shabab Ahmad
4.	SWR 408	Community Organisation	4	SWR 401, SWR 409	Ms Ambreen Jamali
5.	SWR 416	Concurrent Field Work and Viva – II	2	SWR 405, SWR 409	All Faculty

#### Courses for Semester 4

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite / Co-requisites if any	Teacher
1.	SWR 417	Concurrent Field Work and Viva-III	4	SWR 405, SWR 409	All Faculty
2.	SWR 404	Social Welfare Administration	2	NA	Ms Ambreen Jamali
3.	SWR 420	Social Work Practice in Rural Community Development	2	NA	Ms Ambreen Jamali
4.	SWR 440	Social Work Practice in Environmental Protection	2	NA	Mr Shabab Ahmad
5.	SWR 442	Geriatric Social Work Practice	2	NA	Dr Asutosh Pradhan
6.	SWR 444	Social Work Practice in Alcohol and Substance Abuse	2	NA	Mr Shabab Ahmad
7.	SWR 499	MSW Dissertation	4	NA	All Faculty
8.	SWR 430	Social Work Practice in Disaster Management	2	NA	Dr Asutosh Pradhan

**University Wide Courses**

<b>Sr. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Code No. of Pre-requisite/ Co-requisites if any</b>	<b>Teacher</b>
1.	SWR 405	Basics of Research Methodology	2	NA	Prof A. Agrawal
2.	SWR 440	Social Work Practice in Environmental Protection	2	NA	Mr S. Ahmad
3.	SWR 430	Social Work Practice in Disaster Management	2	NA	Dr Asutosh Pradhan
4.	CSR 402	Corporate Social Responsibility	2	NA	Dr Asutosh Pradhan
5.	SWR 407	Social Group Work	4	401, 409	Mr S. Ahmad

## Corporate Social Responsibility

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** CSR 402

**Course Name:** Corporate Social Responsibility

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** Having successfully completed this course, a student should be able to:

- Understand social casework as a method of social work and appreciate its relevance in social work practice.
- Appreciate the values and principles of working with individuals.
- Acquire knowledge of different models of treatment, enhancing problem solving and growth enhancing skills and utilizing them selectively.
- Develop skills in motivational interviewing, counseling, therapeutic intervention and recording.
- Promote positive attitude towards growth enhancing and problem solving approach.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - a. Assignment: 10%
  - b. Quiz / Class Test: 5%
  - c. Topic Presentation: 10%

#### Course Contents:

##### UNIT - I: Business Ethics & Corporate Social Responsibility (6 Hours)

- Business Ethics- The Changing Environment and Stakeholder Management
- Relevance of Ethics in Modern Business and Dilemmas.
- Society in transition - problems and challenges of modern management
- Corporate Social Responsibility – Overview, Concept, Evolution, Paradigm Shifts and importance of CSR

##### UNIT -II: CSR: Policy Perspectives & Legal Dimensions (4 Hours)

- Policies and principles of CSR – Companies Act 2013 (Sec.134 & Sec.135), DPE Guidelines 2013
- CSR and ISO 26000
- Environmental Aspects of CSR
- Corporate Governance & CSR

**UNIT - III: CSR & Role of Multiple Stakeholders (4 Hours)**

- The Corporate Sector as an agent of social change
- Role and social responsibilities of the company to various stakeholders – employees, consumers, neighbourhood & community at large.
- Current CSR Practices of Firms in India and Abroad

**UNIT - IV: Implementation of CSR Activities (4 Hours)**

- Programmes and models
- Activities under CSR (including Schedule-VII of The Companies Act 2013)
- Need Assessment Survey, Program Planning & Development
- Implementation and monitoring of CSR programs
- Role of NGOs & Professionals in CSR

**UNIT - V: CSR & Sustainability (6 Hours)**

- CSR sustainability.
- The CSR Process Approach; Social Audit of CSR programmes
- Community-Industry inter-relationships and linkages.
- Local and Global issues in CSR
- Case Studies

**Prescribed Text Books:**

1. Agarwal, S. (2008). *Corporate social responsibility in India*. India: Response Books-Sage.
2. Shah, S., & Ramamoorthy, V. E. (2014). *Soulful corporations: A values-based perspective on corporate social responsibility*.
3. May, S., Cheney, G., & Roper, J. (2007). *The debate over corporate social responsibility*. Oxford:Oxford University Press.
4. Low, K. C. P., In Idowu, S. O., & In Ang, S. L. (2014). *Corporate Social Responsibility in Asia:Practice and Experience*. Cham [u.a.: Springer].

**Suggested Extra Readings:**

- Idowu, S. O., Capaldi, N., Zu, L., & Das, G. A. (2013). *Encyclopedia of corporate socialresponsibility*. Berlin: Springer.
- Aras, G., & Crowther, D. (2010). *A handbook of corporate governance and social responsibility*.Farnham, Surrey, England: Gower.
- Crowther, David, & Aras, G. (n.d.). *Introduction to corporate social responsibility*. Butterworth-Heinemann.

## Social Casework

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 406

**Course Name:** Social Casework

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** Having successfully completed this course, a student should be able to:

- Understand social casework as a method of social work and appreciate its relevance in social work practice.
- Appreciate the values and principles of working with individuals.
- Acquire knowledge of different models of treatment, enhancing problem solving and growth enhancing skills and utilizing them selectively.
- Develop skills in motivational interviewing, counseling, therapeutic intervention and recording.
- Promote positive attitude towards growth enhancing and problem solving approach.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - a. Assignment: 10%
  - b. Quiz / Class Test: 5%
  - c. Topic Presentation: 10%

#### Course Contents:

##### **UNIT - I: Social Casework - Concept & Nature**

**(4 Hours)**

- Historical development of casework as a method of social work
- Meaning and nature of social casework
- Philosophical assumptions underlying casework practice
- Basic casework concepts: Social roles, Social functioning, Need, Adjustment, Adaptation, Social environment, Person-in-environment, fit, Client.
- Contributions of Mary Richmond, Florence Hollis, H.H. Perlman in social casework.

**UNIT -II: Principles & Phases in social Casework****(4 Hours)**

- Principles of social casework. Application of social casework principles in social work.
- Components of social casework: person, problem, place & process.
- Phases of social casework: Initial phase, appraisal or assessment phase, helping phase, termination & evaluation phase. Importance of follow-up in social casework.
- Cultural context of casework practice

**UNIT - III: Techniques of Social Casework****(4 Hours)**

- Helping techniques: interviewing & collateral contacts, home-visits, supportive techniques, motivational interviewing, networking & referral, environmental modification.
- Principles of interviewing in casework: skills and techniques of interviewing
- Client-Worker Relationship
- Transference & counter-transference and their significance in casework practice.
- Recording in Social Casework – process and types; Use of casework records as tool of intervention.

**UNIT - IV: Approaches to Casework Practice****(4 Hours)**

- Diagnostic and Functional approaches to casework
- Problem solving approach to casework practice
- Task centered casework
- Radical casework
- Counselling in social casework.

**UNIT - V: Social Casework Practice: Client Groups and Settings****(4 Hours)**

- Casework with children in adoption, correctional, school and mental health settings
- Family casework, casework with victims of domestic violence
- Casework in crisis situations like rape, conflicts, disaster and other calamities
- Casework with oppressed groups, religious minorities, the displaced and other socially and economically disadvantaged groups

**Prescribed Text Books:**

1. Mathew, G. 2011. *An Introduction to Social Casework*. Mumbai: Tata Institute of Social Sciences.
2. Perlman, H.H. 2011. *Social Casework: A Problem-solving Process*. Jaipur: Rawat.
3. Upadhyay, R.K. 2010. *Social Casework: A Therapeutic Approach*. Jaipur: Rawat.

**Suggested Extra Readings:**

1. Kadushin, A., & Kadushin, G. 1997. *The social work interview: A guide for human service professionals*. New York: Columbia University Press.
2. Biestek, Felix P. *The Casework Relationship*. Chicago: Loyola University Press, 1957.
3. Hollis, F. 1964. *Casework: A Psychosocial Therapy*. New York: McGraw Hills.



## Social Work Practice in Disaster Management

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 430

**Course Name:** Social Work Practice in Disaster Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** Having successfully completed this course, a student should be able to:

- Develop understanding of disaster & disaster management.
- Acquire a critical perspective of the policy framework, institutional structures & programmes for disaster management in India.
- Understand the process & techniques of empowering communities in disaster preparedness & mitigation.
- Learn the nature & scope of psychosocial care in disaster management.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - a. Assignment: 10%
  - b. Quiz / Class Test: 5%
  - c. Topic Presentation: 10%

**Course Contents:**

**UNIT - I: Concept & Forms of Disasters**

**(4 Hours)**

- Concepts & definitions – Disaster, Hazard, Risk, Vulnerability & Disaster
- Forms of natural & man-made Disasters.
- Impact of disasters: Physical, Economic, Political, Psychosocial, Ecological & Others
- Developmental aspects of disasters.
- Vulnerability factors enhancing vulnerability to natural & man-made disasters; regional vulnerability; Vulnerable groups & communities. Hazard, Risk & Vulnerability with special emphasis on participation tools & techniques.

**UNIT -II: Disaster Management****(4 Hours)**

- Disaster Management: components, the disaster management cycle
- Coordinating search & rescue; relief mobilization & management; evacuation & camp management. Contingency planning & crisis management.
- Rapid Health assessment & emergency health management.
- Restoration & rehabilitation interventions
- Livelihood security & social justice concerns in disaster recovery & reconstruction compensation & related issues in disaster management.

**UNIT - III: Policy Framework for Managing Disasters****(4 Hours)**

- Paradigmatic shift in disaster management, Integration of disaster management & development planning.
- Disaster management policy & programmes in India, National Disaster Management Framework. Administrative & Institutional structure for disaster management.
- Stakeholder participation in disaster management.

**UNIT - IV: Capacity Building for Disaster Management****(4 Hours)**

- Information, Education & Communication in disaster management.
- Capacity building of communities with special emphasis on vulnerable communities/groups
- Community Based disaster preparedness (CBOP) & management (CBDM) – Components; Preparation of CBOP plan, community based risk assessment & management & response plans;
- Building disaster resilient communities.
- Community participation in managing & mitigating disasters.

**UNIT - V: Mental Health Issues and Social Work Practice during disasters****(4 Hours)**

- Mental health consequences of disaster - grief reactions, post-traumatic stress disorders (PTSD).
- Principles & techniques of psycho-social care in post disaster situations.
- Specific psychosocial needs of vulnerable groups like Children, Women, Older persons & persons with disability.
- Post trauma care & counseling including grief counseling with survivors. Social care of orphans, disabled & those facing destitution.

**Prescribed Text Books:**

1. Pinkowski Jack. 2008. *Disaster Management Handbook*. CRC Press, Boca Raton: Taylor & Francis Group.
2. Beach M. 2010. *Disaster preparedness and management*. Philadelphia: F. A. Davis Company.
3. Samal, Kishor C., Meher S., Panigrahi, N. and Mohanty S. 2005. *State, NGOs and Disaster Management*. Jaipur: Rawat.
4. Anaxos, Inc. 2008. *UXL Encyclopedia of Weather and Natural Disasters*. Farmington Hills, MI: The Gale Group.

**Suggested Extra Readings:**

1. Grant H. Brenner, Daniel H. Bush, & Joshua Moses. 2010. *Creating Spiritual And Psychological Resilience - Integrated Care In Disaster Relief Work*. New York: Routledge.
2. Lo'pez-Ibor, J. J. et al. 2005. *Disasters and mental health*. West Sussex, England: John Wiley & Sons Ltd.
3. GOI, Guidelines on various Disasters <http://ndma.gov.in/ndma/guidelines.html>

## Social Work Practice in Environmental Protection

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 440

**Course Name:** Social Work Practice in Environmental Protection

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Having successfully completed this course, a student should be able to:

- Understand the inter relatedness of human life, living organisms and environment.
- Understand the environment problems nature and impact of development initiatives.
- Examine the utilization and management of natural resources.
- Study the role of social work practice in dealing with environmental problems and in disaster management.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continues Internal Assessment : 25%
  - a. Presentation / Test 5%
  - b. Assignment 10 %
  - c. Group Discussion 5%
  - d. Group Work 5%

#### Course Contents:

##### UNIT - I: Definition, Typology & Issues of Environmental Problems. (4 Hours)

- Definition & Typology of Environmental Problems.
- Environment and Natural Resources.
- Current Issues & Consequences of Environment: Anthropogenic Impact on Climate, Global Warming, Acid Rain, Green House Effect
- Environmental Pollution: Sources, Treatment, Prevention (Soil, Water, Air, Noise)

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**UNIT - II: Human Population & Environment (3 Hours)**

- Population and Environment: Interrelatedness of Human Life, Living Organisms.
- Environmental & Human Health.
- Sustainable Development: Concept & Basic Aspects of Sustainable Development.

**UNIT - III: Environmental Impact Assessment & Managements (5 Hours)**

- Environmental Impact Assessment (EIA)
- Environmental Management
- Biodiversity & Wildlife Parks: Planning & Management
- Recycle & Waste Treatment
- Waste Treatment; Tackling e-waste.

**UNIT - IV: Environmental Protection Laws for Social Work (5 Hours)**

- The Environment (Protection) Act, 1986 and Rules 1986
- The Wildlife Protection Act, 1972 Amended 1991
- The Forest (Conservation) Act, 1980
- Issues Involved in Enforcement of Environment Legislation.

**UNIT - V: Social Work & Environment (3 Hours)**

- Role of Governments, NGOs and People's Initiatives for Environment Protection.
- Environmental Audit & Green Accounting.
- Environmental Education;
- Saving our Environment

**Prescribed Text Books:**

1. Tiwari, Vijay Kumar, (2010), A Textbook of Environmental Studies, Mumbai, Himalaya Publishing House.
2. Saxena, H.M. (2006), Environmental Studies, Jaipur, Rawat Publications.
3. Murthy, D.B.N., (2005), Environmental Planning and Management, New Delhi, Deep & Deep Publications.

**Suggested Extra Readings:**

1. Rao, P.S.B. (2007), Environment Management and Audit, New Delhi, Deep & Deep Publications.
2. Fisher, W.F., (1997), Towards Sustainable Development, Jaipur, Rawat Publications.

## Advanced Theory and Practice in Social Work

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 602

**Course Name:** Advanced Theory and Practice in Social Work

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Become familiar with the different theories in social work and their application
- Understand the context of emergence of social work as a profession
- Understand the emerging areas of research in social work

**Attendance Requirements:**

The Research Scholars are expected to attend all lectures in order to be able to fully benefit from the course and successfully complete the course work.

A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment (CIA): 25%
  - a. Presentation: 10%
  - b. Assignment: 10%
  - c. Class Test / Quiz : 5%

**COURSE CONTENTS:**

**Unit 1: Contributions of Social Science Theorists:** Habermas, Foucault, Giddens, Bourdieu, Butler, Rawls, Marx, Freud; Application of Social Science Theories in Social Work; Value of Theory in Social Work Practice. **(10 Hours)**

**Unit 2: Social Work Theories:** Social Systems Theory, Ecological Theory, Empowerment Theories, Critical Social Work, Feminist Social Work, Structural Social Work, Multiculturalism, Postmodernism. **(08 Hours)**

**Unit 3: Social work perspectives:** Strengths Perspective, Human Rights Perspective, Social Capital Perspective, Constructivist Perspective, Interdisciplinary Research, Social Network Analysis, Phenomenology, Ethnomethodology and Ethnography. **(08 Hours)**

**Unit 4: Approaches to Social Work Practice:** Entitlement and Capability Approach, Social Constructivist Approach, Gandhian Approach, Livelihoods Approach, Social Exclusion and Social Inclusion, Participatory Approaches. **(08 Hours)**

**Unit 5: Emerging Areas in Social Work Practice:** Evidence-based Practice, Integrated Practice, International Social Work, Spirituality and Social Work, Social work practice among populations with diverse groups, Non-violence and Peace, Eco-criticism and Social Work, Globalization and Social Work, Popular Culture and Social Work, Postmodern Criminology. **(06 Hours)**

**Prescribed Text Books:**

Webb, Stephen A., and Mel Gray. 2009. *Social Work: Theories and Methods*. London: SAGE.

Payne, Malcolm, and Jo Campling. 2005. *Modern Social Work Theory*. Basingstoke: Palgrave.

Howe, David. 2009. *A Brief Introduction to Social Work Theory*. Houndmills, Basingstoke, Hampshire [England]: Palgrave Macmillan.

**Supplementary Books:**

Teater, Barbra. 2010. *An Introduction to Applying Social Work Theories and Methods*. Maidenhead: McGraw Hill - Open University Press.

Parton, Nigel, and Patrick O'Byrne. 2000. *Constructive Social Work: Towards a New Practice*. New York N.Y.: St. Martin's Press.

Chambon, A. S., Irving, A., & Epstein, L. (1999). *Reading Foucault for Social Work*. New York: Columbia University Press.

**More Books for Reference:**

R. Lovelock, K. Lyons and J. Powell (eds). *Reflecting on Social Work: Discipline and Profession*. Aldershot: Ashgate, 2004, 250 pp., £49.95 (hbk), ISBN 0754619052

## Social Welfare Administration

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 404

**Course Name:** Social Welfare Administration

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** Having successfully completed this course, a student should be able to:

- Develop understanding of social welfare administration as a method of social work profession.
- Understand various components of social welfare administration.
- Acquire competence in the administration of social welfare and development services.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - a. Assignment: 05%
  - b. Group discussion: 10%
  - c. Presentation: 10%

**Course Contents:**

**UNIT - I: Social Welfare Administration**

**(4 Hours)**

- Social Welfare Administration: Meaning and Concept
- Scope and Principles of Social Welfare Administration
- Essentials of Social Welfare Administration
- Organization: Meaning and Design

**UNIT - II: Structure of Social Welfare Administration**

**(4 Hours)**

- Welfare Administration at different Levels
- Public Administration
- Personnel Administration
- Differences between Public and Social Welfare Administration

**UNIT - III: Components of Administration**

**(5 Hours)**

- Planning
- Organizing and Staffing
- Directing and Coordinating
- Reporting and Budgeting
- Evaluation and Feedback

**UNIT -IV: Strategies and Mechanism of Administration**

**(4 Hours)**

- Decision Making
- Role of Communication in Administration
- Johary Window and Social Work Communication
- Coordination

**UNIT - V: Fund Raising and Resource Mobilization**

**(3 Hours)**

- Fund Raising
- Public Relations and Networking
- Social Marketing

**Text books:**

1. Goel S.L;Jain,R.K., Social Welfare Administration Vol.2,Deep &Deep Publications: New Delhi 1998.
2. Chowdhry, D Paul, Social Welfare Administration, Atma Ram & Sons: Delhi, 1962.

**Reference Books:**

1. Bhattacharya Sanjay, (2008), Social Work: An Intergraded Approach, New Delhi, Deep & Deep Publications.
2. Bean, Philip, Approaches to Welfare, Routledge & kegan Paul:London, 1983.
3. Prasad, Rajeshwar, Social Administration, Shree Publishing House: Delhi 1982.
4. Encyclopaedia of Social Work in India, Publication Division GOI: New Delhi 1968, Vol I Pg.110-118 (Communication), Vol III Pg 210-235 (Social Administration).
5. Sanjay Bhattacharya , Social Work Administration and Development, Rawat Publications, New Delhi.



## Community Organization

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 408

**Course Name:** Community Organization

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Having successfully completed this course, a student should be able to:

- Develop understanding regarding community organization as a method of social work
- Understand the critical elements of community organization practice
- Enhance the understanding of the roles of the agencies and community organizer
- Enhance critical understanding of the models and strategies for community organization
- Develop perspective and skills for participatory processes in the community and civil society

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment (CIA): 25%
  - a. Assignment: 05%
  - b. Group Discussion: 10%
  - c. Presentation: 10%

**Course Contents:**

**UNIT - I: Basic Conceptual Framework**

**(8 Hours)**

- Concept and Relevance of community in Social Work
- Community Work: Definition, Nature, Scope and Objectives
- Process of Community Work
- Relationship Between : Community Work, Community Organization and Community Development

**UNIT - II: Community Organization**

**(8 Hours)**

- Community Organization
- Steps in Community Organization
- Basic Assumptions of Community Organization
- Principles and Skills of Community Organization

**UNIT – III: Approaches and Models in Community Organization**

**(8Hours)**

- Approaches
- Models of Community Organization
- Strategies of Community Organization
- Peoples Participation

**UNIT -IV: Community Organization and Practice**

**(8 Hours)**

- Networking and Coordination : Rationale ,Meaning and Scope
- Role of Community Worker
- Intervention of NGO's
- Government intervention in Community Organization.

**UNIT - IV: Social Action**

**(8 Hours)**

- Social Action :Concept ,Objectives and Scope
- Principles of Social Action
- Tactics and Methods of Social Action
- Social Action and Community Organization

**Prescribed Text Books:**

1. Siddiqui, H.Y. (1997), Working with Communities, New Delhi, Hira Publications: New Delhi.
2. Ross. M. G., Community Organization, Harper Press :New York.

**Suggested Extra Readings:**

1. Siddiqui, H.Y., Social Work & Social Action, Har Nam Publications: New Delhi.
2. Goel S.L.;Jain,R.K., Social Welfare Administration Vol.2, Deep &Deep Publications: New Delhi
3. Mukherji.B., Community Development in India, Orient Longman :New Delhi.

## Social Work Practice in Rural Community Development

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 420

**Course Name:** Social Work Practice in Rural Community Development

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:** Having successfully completed this course, a student should be able to:

- To understand the concept of rural development.
- To provide the knowledge of basic concepts of rural society and Panchayati raj institutions.
- Analyze the role of Social Worker, GO's and NGO's in various rural development programs.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination

#### Evaluation Criteria:

- Mid Term Examination: 25%
- End Term Examination: 50%
- Continuous Internal Assessment : 25%
  - Assignment: 05%
  - Group Discussion: 10%
  - Presentation: 10%

#### Course Contents:

##### **UNIT - I: Basic Concepts**

**(4 Hours)**

- Concept and Definition of Community Development
- Essential characteristics and Goals of Community Development
- Community Development – Process and Principles

##### **UNIT - II: Rural Community Development**

**(4 Hours)**

- Concept and Features of Rural Community Development

- Various Approaches to Rural Community Development
- Peoples participation in Rural Development

**UNIT - III: Rural Community Development Programmes**

**(5 Hours)**

- Current Rural Development Programs in India
- Present Health care System in Rural India
- Panchayati Raj System
- Role of Social workers in Rural India

**UNIT -IV: Various issues in Rural Community Development**

**(3 hours)**

- Basic Needs of Rural India.
- Role of Rural Social Institutions.
- Role of Village and Cottage industries in Rural Development.

**UNIT - V: Rural Development Administration in India**

**(4 Hours)**

- Structure of Rural Development Administration
- Role of Cooperatives in Rural Development
- Participation of GO's & NGO's in Rural Development

**Prescribed Text Books:**

1. Desai, A.R, Rural Sociology in India: Rawat Publications.
2. Ahuja .R., Society in India: Concepts, Theories and Recent Trends, Rawat Publication, Jaipur, 1994.

**Reference Books:**

1. K. Venkata Reddy, Agriculture and Rural Development, Himalaya Publishing House, 2012.
2. Vasant Desai, Rural Development in India, Himalaya Publishing House, 2010.
3. Dr. I. Staya Sundaram, Rural Development, Himalaya Publishing House, 2013.
4. S. L. Doshi, P.C. Jain, Rural Sociology, Rawat Publications, Jaipur, 1999.
5. Desai, I.P., History of Rural Development in Modern India. Bombay: Popular Prakashan.

## Social Group Work

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

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**Course Code:** SWR 407

**Course Name:** Social Group Work

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Having successfully completed this course, a student should be able to:

- Understand the place of group work in social work intervention
- Understand group work as an instrument of change/development in individual in groups
- Understand use of programme as a tool for group development
- Develop skills to work with different stages and record the process
- Understand relevance of group in different set up

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment (CIA): 25%
  - a. Assignments: 10%
  - b. Group Work Activity: 10%
  - c. Group work Report: 5%

**Course Contents:**

**UNIT - I: Understanding Concepts of Social Group Work (8 Hours)**

- Concept and Importance of Groups
- Definition of Social Group Work
- Characteristics of Social Group Work
- History and Development of Social Group Work

**UNIT - II: Social Group Work Theories, Principles & Skills (8 Hours)**

- Theories Applicable to Group Work Practice; Psychoanalytical Theory, Learning Theory, Field Theory, System Theory & Conflict Theory
- Role of Social Worker in Skills Development.
- Skills and Distinctive Principles of Group Work

- Social Group Work in Different Fields
- Classification of Groups; Primary Group & Secondary Group; Formal & Informal Group
- Common Interest Group, Self-help Groups, Task Group, Therapy Group, Single Session Group, Peer Group, Reference Group

**UNIT - III: Process and Techniques in Social Group Work (8 Hours)**

- Stages in Group Development: - Forming, Storming, Norming, Performing, Termination, and Evaluation.
- Role of Social Worker in Different Stages of Group Development.
- Techniques of Working with Group; Group Councelling, Group Discussion, Group Decision Making.
- Programme Media, Role Play, Individual Sessions

**UNIT - IV: Use of Programme and Dynamic of Group Process (8 Hours)**

- Programme Planning in Group Work
- Role of Social Worker in Programme Planning
- Steps in Understanding Group Process
- Communication Leadership and Its Development in Group Process
- Group Dynamics: - Interaction, Group Cohesiveness, Group Conflict, Group Culture & Group Development

**UNIT - V: Recording and Evaluation in Group Work (8 Hours)**

- Importance of Recording in Group Work
- Group Work Practice in Agencies
- Role of Social Group Worker for the Satisfaction of the Social Needs and Development of Individual and Community.
- Evaluation: Individual Growth, Group, Evaluation of the Member's Group Contribution

**Prescribed Text Books:**

1. Mishra, P.D. (2008), Social Work – Philosophy & Methods, New Delhi, Inter-India Publications.
2. Siddiqui, H.Y. (2008), Group Work - Theories and Practices, Jaipur, Rawat Publications.
3. Battacharya, Sanjay (2008), Social Work an Integrated Approach, New Delhi, Deep & Deep Publications.
4. Zastrow, C. (2010), Social Work with Groups, Jaipur, Rawat Publications.

**Suggested Extra Readings:**

1. Gravin, Charles D., Lorraie M. Gulier (Ed.) (2007), A Hand Book of Social Work with Groups, Jaipur, Rawat Publications.

## Social Work Practice in Environmental Protection

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

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**Course Code:** SWR 440

**Course Name:** Social Work Practice in Environmental Protection

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Having successfully completed this course, a student should be able to:

- Understand the inter relatedness of human life, living organisms and environment.
- Understand the environment problems nature and impact of development initiatives.
- Examine the utilization and management of natural resources.
- Study the role of social work practice in dealing with environmental problems and in disaster management.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continues Internal Assessment : 25%
  - a. Presentation / Test 5%
  - b. Assignment 10 %
  - c. Group Discussion 5%
  - d. Group Work 5%

#### Course Contents:

##### UNIT - I: Definition, Typology & Issues of Environmental Problems. (4 Hours)

- Definition & Typology of Environmental Problems.
- Environment and Natural Resources.
- Current Issues & Consequences of Environment: Anthropogenic Impact on Climate, Global Warming, Acid Rain, Green House Effect
- Environmental Pollution: Sources, Treatment, Prevention (Soil, Water, Air, Noise)

**UNIT - II: Human Population & Environment (3 Hours)**

- Population and Environment: Interrelatedness of Human Life, Living Organisms.
- Environmental & Human Health.
- Sustainable Development: Concept & Basic Aspects of Sustainable Development.

**UNIT - III: Environmental Impact Assessment & Managements (5 Hours)**

- Environmental Impact Assessment (EIA)
- Environmental Management
- Biodiversity & Wildlife Parks: Planning & Management
- Recycle & Waste Treatment
- Waste Treatment; Tackling e-waste.

**UNIT - IV: Environmental Protection Laws for Social Work (5 Hours)**

- The Environment (Protection) Act, 1986 and Rules 1986
- The Wildlife Protection Act, 1972 Amended 1991
- The Forest (Conservation) Act, 1980
- Issues Involved in Enforcement of Environment Legislation.

**UNIT - V: Social Work & Environment (3 Hours)**

- Role of Governments, NGOs and People's Initiatives for Environment Protection.
- Environmental Audit & Green Accounting.
- Environmental Education;
- Saving our Environment

**Prescribed Text Books:**

1. Tiwari, Vijay Kumar, (2010), A Textbook of Environmental Studies, Mumbai, Himalaya Publishing House.
2. Saxena, H.M. (2006), Environmental Studies, Jaipur, Rawat Publications.
3. Murthy, D.B.N., (2005), Environmental Planning and Management, New Delhi, Deep & Deep Publications.

**Suggested Extra Readings:**

1. Rao, P.S.B. (2007), Environment Management and Audit, New Delhi, Deep & Deep Publications.
2. Fisher, W.F., (1997), Towards Sustainable Development, Jaipur, Rawat Publications.



## Social Work Practice in Alcohol and Substance Abuse

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 444

**Course Name:** Social Work Practice in Alcohol and Substance Abuse

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Having successfully completed this course, a student should be able to:

- To develop the basic understanding about alcohol & drug abuse.
- To provide knowledge about harmful effects of substance abuse on individual.
- To develop an understanding about prevention & treatment of the substance abuse.
- To develop national & international understanding about different Protocols, Conventions, Acts and movements related to the substance use.
- Develop skills related with social work treatment and rehabilitation of the patients suffering with substance abuse.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continues Internal Assessment : 25%
  - Presentation / Test 5%
  - Assignment 10 %
  - Group Discussion 5%
  - Group Work 5%

**Course Contents:**

**UNIT - I: Basic Concepts, Nature & Impact of Alcohol & Other Drugs (AOD) (4 Hours)**

- Defining the Terms: Drugs, Drug Abuse, Drug Dependency, Alcoholism & Addiction.
- Basic Concept of Drug Abuse, Drug Addiction & Alcoholism.
- Nature & Impact of Abusable Drugs.
- Types of Drugs, Its Effects & Its Health Risks: Stimulants, Hallucinogens, Sedatives or Depressants

- UNIT - II: Causes, Treatment & Dependence (5 Hours)**
- Causes & Problem of Alcohol Abuse
  - Causes of Dependence & Addiction
  - Treatment & Prevention: Historical Background & Current Context
  - Treatment of Alcoholics
  - From the Field: The Case Studies.
- UNIT - III: Protocols, Conventions, Acts & Movements (5 Hours)**
- Protocols & United Nations Conventions.
  - The Narcotic Drugs and Psychotropic Substances Act, 1985.
  - Women & Anti-Liquor Movements.
  - Role of Family & Peer Group in Drug Abuse.
  - Prohibitions & Control over Drug Abuse.
- UNIT - IV: Drug Abuse Management in India (3 Hours)**
- Limitation of Prevention Responses.
  - Prevention Strategies & their Limitations.
  - Limitation of Treatment & Rehabilitation Programmes.
  - Suggestions for Intervention Programmes.
- UNIT - V: The Role of Social Worker as a Change Agent (3 Hours)**
- The Role of the Social Worker.
  - Impact of Drug Policies at the Micro-Level Intervention.
  - Criminalization or Treatment.
  - Social Worker: A Change Agent

**Prescribed Text Books:**

1. Elizabeth A. Sehgal (2011), Professional Social Work, Jaipur, Rawat Publications.
2. Ahuja, Ram (2007,) Social Problems in India. Second Edition. Jaipur, Rawat Publications.
3. Charles, Molly (1999), Drug Culture in India: A street Ethnographic Study of Heroin Addiction in Bombay, Jaipur, Rawat Publications.

**Suggested Extra Readings:**

1. Goodman, A. (2007), Social Work with Drug and Substance Misusers, Jaipur, Rawat Publications.
2. Manning, P. (2007), Drugs and Popular Culture, Jaipur, Rawat Publications.

## Basics of Research Methodology

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** SWR 405

**Course Name:** Basics of Research Methodology

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Develop an understanding about the scientific approach to human inquiry.
- Develop an appreciation of the value and approach in research in addressing problems in the field of professional practice.
- Develop attitudes and skills appropriate for research.
- Acquire the skills for data analyses and research writing.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment: 25%
  - Presentation: 5%
  - Assignment: 5%
  - Project Work: 15%

**Course Contents:**

**UNIT - I: Research: Nature & Concept**

**(7 Hours)**

- Nature of Scientific Methods and its Application to Social Phenomenon

- Types of Research: Pure, Applied and Action Research
- Concepts in Research: Variable, Concept, Universe, Sampling, Hypothesis, Theory

**UNIT - II: Research Process and Sampling (7 Hours)**

- Steps in the Process of Research - Problem Selection, Formulation and Planning
- Problem formulation: Identification Probable Issue for Research, Selection Specific Research Issue, Formulation of Objectives, Clarifying the Objectives.
- Probability Sampling: Simple Random Sampling, Proportionate and Disproportionate Stratified Random Sampling, Cluster Sampling.
- Non-Probability Sampling: Accidental Sampling, Quota Sampling, Purposive Sampling, Snowball Sampling.

**UNIT - III: Hypotheses, Methods and Tools of Data Collection (6Hours)**

- Hypotheses: Nature, Characteristics, Sources & Types
- Tools of Data Collection: Primary & Secondary, Observation, Interview Schedule, Questionnaire, Types and Formats.
- Rating Scales

**UNIT - IV: Research Designs (5 Hours)**

- Research Design: Concept and Types
- Qualitative and Quantitative Research Designs (Including Case study Method)
- Report Writing

**UNIT - V: Statistical Analysis (5 Hours)**

- Graphic and Diagrammatic Presentation
- Descriptive Statistics: Measurement of Central Tendency - Mean Median, Mode; Dispersion - Mean and Standard Deviation; Correlation - Karl Pearson's Correlation and Rank Correlation
- Statistical Inference: Chi-Square Test

**Prescribed Text Books:**

1. Kumar, Ranjeet (2011) Research Methodology: a step-by-step guide for beginners, New Delhi, Sage Publications India Pvt Ltd.
2. Bhandarkar, P.L. and Wilkinson, T.S. (2010). Methodology and Techniques of Social Research, New Delhi: Himalayan Publishing House.
3. Krishnaswamy, O. R. (1993) Methodology for Research in Social Science, Bombay: Himalaya.

**Suggested Extra Readings:**

1. Ahuja, Ram (2001) Research Methods, Jaipur: Rawat
2. Laldas, D. K. (2004) Practice of Social Research, Jaipur, Rawat.

## Qualitative Research

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
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**Course Code: MSO 603**

**Course Name: Qualitative Research**

**Credits Equivalent: 4**

**Course Objective:** After completing this course the students will be able to:

1. Understand the significance of undertaking qualitative analysis of information and data;
2. Learn the recent various schools of methods and trends in qualitative research;
3. Get equipped with the tools of conducting qualitative research;
4. Use subjective information wisely; and
5. Explore new areas of research.

**Attendance Requirements:** Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. **Mid Term Examination: 25%**
2. **End Term Examination: 50%**
3. **Counselling, Activities and Tutorials (CAT): 25%**

**UNIT - I**

**(19 hours)**

Concept of Qualitative Research vs Quantitative Research, Interpretive vs Positivist Paradigm, History of Qualitative Research, Epistemological Background, Emic & Etic Perspective, Schools of thought in Qualitative Research – Ethnographic, Ethnomethodological, Phenomenological; Research Design, Problem formulation: Identification Probable Issue for Research, Selection Specific Research Issue, Formulation of Objectives, Clarifying the Objectives, Research Questions, Entering into the Field & Rapport Building.

**UNIT - II**

**(5 hours)**

Logic: Inductive & Deductive Inferences, Propositions, Premise & Conclusion, Categorical Statements and Inferences, Syllogism, Aristotelian Square of Opposition, Logical Fallacies,

**UNIT - III****(7 hours)**

Critical Pedagogy & Qualitative Research (Bricolage), Using literature in Qualitative Research, Content Analysis, Narrative Inquiry, Discourse Analysis, Oral History, Analyzing Talk, Conversation, Text & Genres, Construction and Understanding of Texts (Narrative & Hermeneutic Analysis).

**UNIT - IV****(11 hours)**

Ethnographic Study, Braiding Narrative Ethnography with Memoirs & Creative Non-Fiction, Constructionist Analytics of Interpretive Practice, Observation – Participant, Non-Participant and Quasi Participant; Verstehen, Focus Group Discussions, Interviews, Case Study Method

**UNIT - V****(18 hours)**

Data Analysis using Data Displays, Textual Data Analysis, Triangulation, Flow Charts, Pareto Charts, Ishikawa Charts, Non-Standard Charts, Logical Framework Analysis, In-Depth Analysis, Grounded Theory, Using Computers in Qualitative Analysis, Mixed Method, Documentation & Writing Qualitative Research, Future of Qualitative Research, Ethics of Qualitative Research.

**Prescribed Text Books:**

1. Denzin, Norman K. & Lincoln, Yvonna S. (Eds.). (2011), *The Sage Handbook of Qualitative Research*, 4th Edition, Thousand Oaks, CA: Sage.
2. Bailey Ajay, Hutter Inge, Hennink Monique. (2011), *Qualitative Research Methods*, 1st Edition, London: Sage Publications India Pvt Ltd.
3. Uwe Flick (2009), *An Introduction to Qualitative Research*, 4th Edition, New Delhi: Sage Publications India Pvt Ltd.

**Suggested Extra Readings:**

1. Gerard Guthrie, (2010) *Basic Research Methods: An Entry to Social Science Research*, 1st Edition, London: Sage Publications India Pvt Ltd.
2. Holliday, A. R. (2007). *Doing and Writing Qualitative Research*, 2nd Edition. London: Sage Publications, Reprint 2010.
3. Stan Baronett, Madhucchanda Sen (2009), *Logic*, Dorling Kindersley (India) Pvt. Ltd., Licensees of Pearson Education, Noida.
4. Bill Taylor, Gautam Sinha, Taposh Ghoshal (2011), *Research Methodology: A Guide for Researchers in Management and Social Sciences*, 5th Reprint, PHI, New Delhi.

## Department of Economics & Public Policy

### School of Social Sciences

Name of the Department: **Department of Economics & Public Policy**

Name of the Programme of Study: **MA (Economics)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	ECN 503	Econometric Methods	4	NA	Mr. Indervir Singh
2	ECN 402	Macroeconomic Theory	4	NA	Prof. HR Sharma
3	ECN 410	Economic Development and Planning	4	NA	Mr. Amit K. Basantaray

#### Courses for Semester 4

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	ECN 408	Public Economics	4	NA	Mr. Kamal Singh
2	ECN 409	Money & Banking	4	NA	Mr. Amit K. Basantaray
3	ECN 514	Community Lab for Economics	4	NA	Mr. Amit K. Basantaray\ Prof. HR Sharma
4	ECN 416	Environmental Economics	4	NA	Mr. Indervir Singh
5	ECN 412	Industrial Economics	4	NA	Mr. Indervir Singh
6	ECN415	Labour Economics	4	NA	Mr. Kamal Singh
4	ECN 448	Professional Development Activity*	4	NA	Mr. Kamal Singh

#### University Wide Courses

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	ECN 406	Basics of Macroeconomics	2	NA	Mr. Kamal Singh
2	ECN 444	Economics of Micro-Finance	2	NA	Mr. Amit K. Basantaray
3	ECN 445	Basic Terms and Concepts in Economics	2	NA	Mr. Amit K. Basantaray

## Macroeconomic Theory

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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Course Code: ECN 402

Course Name: Macroeconomic Theory

Credits Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- Introduce basic concepts on macroeconomics
- Enable students understanding functioning of the macro economy
- Developing critical skills to understand the implications of macroeconomic policies

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Class Participation and Attendance: 5%
  - ii. Assignment: 10%
  - iii. Quiz: 10%

#### Course Content:

##### Unit – I

(10 Hours)

Schools in Macroeconomics, Basic models of Macroeconomics. National income: concepts and measurement. Macro Economic Theories of Consumption: Relative income, Permanent income, Life cycle income hypotheses and Hall Approach. Role of liquidity constraint and Pigou effect and real balance effect on consumption demand.



**Unit-II****(15 Hours)**

Macro Economic Theories of Investment: The Keynesian approach, Accelerator theory, Neo-classical theory of investment, Tobin's Q theory of investment. The Demand for Money: Keynesian approach, Baumal and Tobin's contribution and Friedman's restatement of quantity theory of money. The supply of Money and Definitions of Money Supply and the neutrality of money

**Unit-III****(15 Hours)**

Derivation, properties and shifts in IS and LM curves and simultaneously equilibrium in the goods and money market. Effects of monetary and fiscal policies under different cases in IS and LM framework including derivation of aggregate demand curve.

Demand and supply of labour: The Classical and Keynesian views. Keynesian and Classical model of income determination. Wage price flexibility. The classical and Keynesian dichotomies and their resolution by Patinkin's real balance effect and through IS-LM model respectively.

**Unit-IV****(10 Hours)**

Theories of Inflation; Demand – pull and cost-push inflation; short and long-run Phillips curve analysis; The Keynesian, the monetarist and the rational expectations analysis.

**Unit-V****(10 Hours)**

Keynesian and monetarist perspectives on monetary, fiscal and income policies. Stabilisation policies: Rules Vs Discretion: lagged effects of policies and role of expectations. Crowding out effect and government budget constraint. Rational expectations and effectiveness of stabilization policies. Models of Real Business Cycles .

**Prescribed Text Books:**

1. Branson, W.H., (2005), Macro-Economic Theory and Policy, East-West Press Private Limited, New Delhi.
2. Richard T. Froyen (2012), Macroeconomics: Theories and Policies, Pearson.
3. Dornbusch, R. and S. Fischer (2005), Macroeconomics, 4<sup>th</sup> Edition, McGraw-Hill Education Private Limited, New Delhi.

**Supplementary Readings:**

1. Oliver Blanchard (2006), Macroeconomics, Pearson
2. Errol D Souza (2012), Macroeconomics, Pearson, New Delhi, New York.
3. Rakshit, M. (1998), Studies in Macroeconomics in Developing Countries, Oxford University Press, New Delhi
4. Shapiro, Edward (1984), Macroeconomic Analysis, Galgotia Publication, New Delhi

## Economic Development and Planning

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ECN 410

**Course Name:** Economic Development and Planning

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- Familiarize students with basic concepts of Economic Development and Planning.
- Understand different strategies and models of Economic Development and Planning.
- Understand the applicability of different strategies and models in the development and planning process

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Class Review: 5%
  - ii. Assignment: 5%
  - iii. Attendance: 5%
  - iv. Presentation : 5%
  - v. Class Test: 5%

## Course Content

### Unit – I

(10 Hours)

Nature and Scope of Development Economics, Measures of Development, Purchasing Power Parity, PQLI, HDI, Sen's Capability Approach. Core values and Objectives of Development, Characteristics of Underdevelopment, Rostow's Stages of Growth, Kaldor's Growth Laws.

### Unit – II

(18 Hours)

Classical, Malthus, Marxian and Schumpeterian Models of Economic Development. Balanced and Unbalanced Growth, Big-Push Theory; Critical Minimum Effort Thesis, Low Level Equilibrium Trap. Lewis and Ranis-Fei models of economic development. Modern Economic Growth, Kuznet's Six Characteristics, Harrod-Domar Model, Solow Model, Technical Progress, Convergence.

### Unit – III

(12 Hours)

New Growth Theories, Romer Model, Human Capital and Growth, Technical Progress and Human Decisions, Total Factor Productivity. Economic Inequality, Measuring Economic Inequality, Kuznet's Inverted-U Hypothesis, Poverty and Undernutrition.

### Unit – IV

(12 Hours)

Migration-Harris-Todaro Model, Market Mechanism and Market Failures, Role of State, Development Plans, Policy Models, Projection Models, Allocation of resources, Comparative Cost Doctrine, Project Appraisal, Social Cost-Benefit Analysis and Shadow Wages,

### Unit – V

(8 Hours)

Role of Planning and the Planning Commission in the New Indian Economy, Mahalanobis Model, Sustainable Development, Choice of Techniques, Input-Output Analysis. Financing Development from Domestic resources, Foreign Assistance, debt and Development.

### Prescribed Text Books

1. Ray, Debraj (1998), *Development Economics*, Oxford University Press, New Delhi.
2. Thirwall, A. P. (2006), *Growth and Development with Special Reference to Developing Economies*, 8<sup>th</sup> Edition, Palgrave Macmillan, New York.
3. Todaro, M. P. and Smith, S. C. (2003), *Economic Development*, Pearson Education Limited, New Delhi.

### Supplementary Reading:

1. Sen, Amartya (1999), *Development vs. Freedom*, Oxford University Press, London.
2. Higgins, B. (1966), *Economic Development*, Central Book Depot, Allahabad.
3. Basu, Kausik (1998), *Analytical Development Economics*, Oxford India Paperbacks, New Delhi.
4. Journal of Development Economics.

## Econometric Methods

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 503

Course Name: Econometric Methods

**Credit Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course objectives:

- to familiarize students with the econometrics theory;
- to enable students to understand applications of basic econometric methods.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25 percent
2. End Term Examination: 50 percent
3. Counselling, Activities and Tutorials (CAT): 25 percent
  - i. Class Participation: 5 percent
  - ii. Assignment: 5 percent
  - iii. Quiz/Class Test: 5 percent
  - iv. Presentation: 10 percent

#### Course Content:

##### Unit- I

(15 Hours)

- Introduction: Nature, Scope and Methodology of Econometrics,
- Specification of an Econometric Model
- Criteria for Model Selection

- Nature of data used in Estimation. Single Equation Estimation
- Method of Ordinary Least Squares (OLS) for Simple and Multiple Regression Models,
- Properties of the Least Squares Estimators,
- Gauss-Markov Theorem
- Tests of significance of OLS estimates and confidence intervals,
- Application and uses of Dummy Variables,
- Chow test

**Unit- II (15 Hours)**

- Assumptions of OLS Estimation
- Multicollinearity, Specification Errors,
- Heteroscedasticity,
- Autocorrelation,
- Aitken's Generalized Least Squares (GLS) Method of Estimation,
- Estimation from Grouped Data, Errors of Measurement,
- Lagged Variables and Distributed Lag Models.

**Unit- III (10 Hours)**

- Simultaneous Equation Models: Description, Identification Problem, Rank and Order Conditions,
- Single Equation Methods of Estimation: Indirect Least Squares (ILS),
- Two Stage Least Squares (2 SLS),
- Maximum Likelihood Methods,

**Unit- IV (10 Hours)**

Time Series Analysis:

- Stationarity, Unit Roots, Co-integration, Spurious Regression,
- Dickey –Fuller Test, Engle Granger Test
- Random Walk Models, Forecasting with AR, MA, ARMA Models,
- Box Jenking Methodology;

**Unit- V (10 Hours)**

- Panel Data Techniques: Random Coefficient Models,
- Fixed Effect Models, Random Effect Model.
- Qualitative Response Regression Models: The Linear Probability Model, The Logit Model, The Probit Model

### Prescribed Text Books:

1. Dougherty, Christopher (2011) *Introduction to Econometrics 4<sup>th</sup> Edition*. Oxford University Press.
2. Gujarati, Damodar N. (2002). *Basic Econometrics 4<sup>th</sup> Edition*. McGraw Hill
3. Koutsoyiannis, A. (1977). *Theory of Econometrics*. Macmillan Publishers
4. Maddala, G. S. (2005). *Introduction to Econometrics*. New Delhi: Wiley India Pvt. Ltd.

### Supplementary Readings:

1. Goldberger, A. S. (1998). *Introductory Econometrics*. Cambridge: Harvard University Press.
2. Hill, R. Carter, William E. Griffiths and Guay C. Lim (2011) *Principles of Econometrics 4<sup>th</sup> Edition*. Wiley.
3. Hsiao, Cheng (2002). *Analysis of Panel Data*. Cambridge University Press.
4. Mukherjee, Chandan, Howard White and Marc Wuyts (1998) *Econometrics and Data Analysis for Developing Countries*. New York: Routledge.
5. Wooldridge, Jeffrey M. (2010) *Econometric Analysis of Cross Section and Panel Data 2<sup>nd</sup> Edition*. MIT Press.

## Industrial Economics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 412

Course Name: Industrial Economics

Credit Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- Enabling students to understand various concepts of Industrial Economics;
- Enabling students to understand investment and pricing decisions of Industries;
- Equip students with comprehensive and rigorous understanding of application of economic theories in industry;
- Familiarising the students with important issues in Industrial Development, Industrial Finance, and Industrial policies with special reference to India.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 per cent attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Class Participation: 5%
  - ii. Assignment: 10%
  - iii. Presentation : 10%

#### Course Contents

(The course content is designed keeping in view the syllabus that is covered by students in course ECN 405, i.e. Microeconomic Theory)

**UNIT-1: (10 hours)**

Introduction: History and Scope, A framework of Industrial Economics. Cost and Supply: Production cost and economies of scale, Empirical cost curves, The survivor technique. Pricing and Market Structure, Models of Advertising Expenditure, Vertical relationships in market, Empirical evidence on Pricing, Market Structure and Profitability

**UNIT-2: (10 hours)**

The Nature of Firm: Characteristics of Industrial Companies, Ownership and Control of Firm, Firm as Resource-allocating organization, Objectives of the Firm; The Growth of Firm: The Marris growth model, Demand constraint, The Growth and Vertical Integration, Size and Growth of Firm, Problems of Theory of Growth of Firm; Company Finance: The flow and cost of funds.

**UNIT-3: Investment and Pricing Decisions (15 hours)**

Investment Decision: Theory of Investment, Empirical Studies of Investment, Impact of Government Policy; Research & Development expenditure and Investment decision. The Stock Market Evaluation of Firms, The Pure Theory of Mergers, Acquisitions and Takeovers; Market Structure and Development of Firms; Market Structure and Public Policy;

**UNIT-4: Theories of Industrial Location (10 hours)**

Theories of Industrial Location: Webber, Sargent Florence, Industrial Location Quotient. Factors influencing location of industries. Industrial imbalance: causes and measures. Need for balanced regional development of industries.

**UNIT-5: Industrial Finance and Policies (15 hours)**

Industrial Finance: Meaning, Scope, Importance of Industrial finance, Sources of Industrial Finance: Private, Public and Co-operative Sector; Shares, Debentures, Bonds, Deposits, Loan etc. Role, Nature, volume and types of institutional finance. Foreign capital, Need for foreign capital, Government policy towards foreign capital, Direct Investment, Foreign Institutional Investment, Euro Issues, GDR, ADR, External Commercial Borrowings.

Brief Outline of Industrial Policies of 1948, 1956, 1977. Industrial Policies since 1991. Trends in Industrial Growth since liberalization. Performance and problems of small scale and cottage industries in India. Role of MNCs in India. Review of economic recession in industrially advanced economies and its impact on India.

**Prescribed Text Books**

Alhuwalia, I.J. (1985), *Industrial Growth in India*, Oxford University Press, New Delhi

Hay, D. A. and D. J. Morris (1991), *Industrial Economics and Organization: Theory and Evidence*, Oxford University Press, New York.

Ferguson, Paul R. and Glenys J. Ferguson, (1994), *Industrial Economics: Issues and Perspectives*, Macmillan, London.

**Selected articles and materials will be provided in the classroom for reading and discussion.**

**Supplementary Readings:**

Ahluwalia, I. J. (1991), *Productivity and Growth in Indian Manufacturing*, Oxford University Press, New Delhi.

Devine, P.J., N. Lee, R.M. Jones, W. J. Tyson (1976), *An Introduction to Industrial Economics*, George, Allen and Unwin Ltd., London.

Koutsoyiannis, A. (1985), *Modern Microeconomics*, Macmillan, London.



## Environmental Economics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 416

Course Name: Environmental Economics

Credit Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives

- Familiarize students with basic concepts of environment economics.
- Enable students to understand inter-linkages between economics and environment.
- Enable student understand environmental problems and ways to sustainable development.
- Familiarize students with environmental issues in Indian and global context and its implications.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Class Participation: 5%
  - ii. Assignment: 7.5%
  - iii. Class Test: 5%
  - iv. Presentation : 7.5%

#### Course Contents

##### UNIT-I

(12 hours)

##### Scope of Environmental Economics:

Environment, Ecology and Economy, Introduction to law of thermodynamics, Major environment problems, Environment sustainability; sustainability rule, indicators of sustainability. LDCs and sustainable development, Sustainable accounting.

**Unit- II****(12 hours)****Environmental Externality:**

Hedonic Price Theory, Market failure: Public goods and externalities, Property rights. The Coase Theorem, Economics of exhaustible resources; Resources Taxonomy, scarcity and management.

**Unit- III****(12 hours)****Environment Regulation:**

Rationale for regulation, Basic regulatory instruments; Pigovian fees, single polluters, multiple pollutes. Regulation with unknown Control Costs; Permits or Fees, Emission Fees or Quality regulation, Hybrid price or quantity regulations.

**Unit- IV****(12 hours)****Policies for Controlling pollution:**

Economic persuasive; their relative effectiveness in LDCs, Relation between population, poverty and environmental degradation. Micro planning for environment and Eco preservation; watersheds, Joint forest management and self help groups.

**Unit- V****(12 hours)**

Current status of pollution in India, role of state in environment preservation, Review of environmental legislation in India, Women, Environment and E.D, Environmental issues in global content, Green house gases ozone depletion, Montreal Protocol.

**Text Books**

- Charles D. Kolstad (2000), Environmental Economics, Oxford University Press, New Delhi.
- Nick Hanley, Jason F. Shogren and Ben White (2000), Environmental Economics in Theory and Practice, Macmillan
- Rabindra, N. Bhattacharya (2001), Environmental Economics: An Indian Perspective, Oxford University Press, New Delhi.

**Supplementary Readings**

- Charles Perrings (2009), Ecological Economics, Sage Publications, New Delhi.
- Johansson Per-Olov (1987), The Economic Theory and Measurement of Environmental Economics, Cambridge University Press.
- Willam Baumal and Wallace E. Oats (1998), The Theory of Environmental Policy, 2<sup>nd</sup> Edition, Cambridge University Press.
- Daniel W. Bromley (1996) (Eds.), Handbook of Environmental Economics, Blackwell Publishers Ltd.
- Hussen, A.H. (2000), Principles of Environmental Economics Routledge.
- Fisher, A (1981), Resource and Environmental Economics, Cambridge University Press

## Community Lab for Economics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 514

Course Name: Community Lab for Economics

Credits Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- To enable students to raise researchable issues, form objectives and prepare questionnaire for primary survey.
- To equip students with basics skills of data collection and data entry.
- To develop the analytical and report writing skills of the students.

#### Attendance Requirements:

The course is divided into five parts: collection of data, tabulation of data, analysis of the data, report writing and presentation of the reports. At each step, the students will be assigned the work load to be completed in the specified time period. Since each step is required to be completed to reach the next stage, each student is required to participate in all the activities and finish the assigned work within the specified period.

#### Evaluation Criteria:

1. Collection of data (15%)
2. Tabulation of data (15%)
3. Analysis of the data (20%)
4. Report writing (30%)
5. Presentation and submission of report (20%)

#### Course Structure:

The course is structured in five parts. Each part includes specific types of activity to be performed to achieve the objective of writing a research report/paper. Following activities are to be performed under each stage:

##### I. Collection of data (7 weeks)

The collection of data has three steps, which includes:

### **Step 1. (8 lectures)**

A set of eight lectures on finding research issues, preparation of questionnaire and sampling design will be delivered. The students will also be made aware about the research ethics. Research issues will be finalized and a detailed questionnaire will be prepared.

### **Step 2. (1 week)**

Sample village field survey shall be selected. Thereafter a suitable sample will be drawn based on village level information on households.

### **Step 3. (4 weeks)**

Each student will collect data from a particular number of assigned sampled households. The students may also be required to collect the secondary data on some aspects of the surveyed area.

#### **2. Tabulation of data (2 weeks)**

A set of four lectures will be delivered to the students to familiarize them with statistical software for entry and analysis of the data (Microsoft Excel, SPSS or STATA).

The students will prepare the data sheet in a statistical software and enter the data.

#### **3. Analysis of the data (2 weeks)**

The data will be analyzed using various statistical tools. The statistical package will be used for this purpose.

#### **4. Report writing (3 weeks)**

Each student will prepare a report (6000-8000 words) based on the analysis of the collected data.

#### **5. Presentation and submission of report (1 week)**

All reports will be presented in the department in an open seminar. The final report will be submitted by the student after incorporating the comments from the participants within one week of the presentation.

The in charge faculty members will guide and supervise the students through each step and help them to apply various research techniques.

### **Prescribed Text Books:**

1. Neuman, Lawrence W. (2006) *Social Research Methods: Quantitative and Qualitative Approaches, Sixth edition*. New Delhi: Pearson Education.
2. Mukherjee, Chandan, Howard White and Marc Wuyts (1998) *Econometrics and Data Analysis for Developing Countries*. New York: Routledge.

## Labour Economics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 415

Course Name: Labour Economics

Credits Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

Course Objectives:

- To familiarize students with different aspects of Labour and Labour Markets
- Understand theoretical and well as empirical issues relating labour market, wage theories, employment policies , trade unions and collective bargaining in the globalised world

Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Class Participation: 5%
  - ii. Assignment: 10%
  - iii. Quiz: 5%
  - iv. Presentation : 5%

Course Content:

**UNIT I**

**(5 Hours)**

Nature and characteristics of labour markets; Demand for labour: Under Competitive and not competitive markets; Labour demand elasticities; Supply of labour; labour/Leisure Choice, Empirical findings on income and substitution effects.

**UNIT II**

**(10 Hours)**

Employment and development relationship — Poverty and unemployment in developing countries; Unemployment — Concept, Types, and Measurement, particularly in India; Investment in Human Capital: Education and Training; Employment policy in Five Year Plans and its evaluation.

**UNIT – III**

**(10 Hours)**

Classical, neo-classical and bargaining theories of wage determination; Concepts of minimum wage; Wage determination and inequality ; Asymmetric information and efficiency of labour markets in wage determination; National wage policy; Wages and Wage Boards in India.

**UNIT –IV**

**(10 Hours)**

Unions and the Labour markets: Union structure and membership; Monopoly union model; Efficient Contracts Model ; Collective bargaining ; Effects of Unions; Labour legislation in India; Indian labour laws and practices in relation to international labour standards.

**UNIT – V**

**(5 Hours)**

State and social security of labour — Concept of social security and its evolution; Social assistance and social insurance; Special problems of labour: Child labour, female labour, Discrimination and gender bias in treatment of labour; Labour market reforms — Exit policy, need for safety nets; Trade Globalization and Labour Markets.

**Prescribed Text Books:**

- 1) Ehrenberg, G. Ronald and Smith, S Robert (11<sup>th</sup> Edition) Modern Labour Economics Theory and Public Policy , Pearson , New Delhi
- 2) Smith, Stephen. (2<sup>nd</sup> Edition) Labour Economics, Routledge

**Supplementary Readings:**

- 1) Govt. of India: Report of the First and Second National Commission on Labour.
- 2) Govt. of India: Latest Annual Report of the Ministry of Labour.
- 3) Susan Horon, Ravi Ranbur and Deepak Mazumdar (ed.): Labour Market in an Era of Adjustment, Vol. 1, World Bank publication.

## Money and Banking

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 409

Course Name: Money and Banking

Credit Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- Enabling students to understand different aspects of monetary theory, institutions and policy;
- Familiarize students with basic concepts and functions of Commercial Banks;
- Enabling students to understand analytically the debates in monetary policy and banking sector especially in the Indian context.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 per cent attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

- i. Mid Term Examination: 25%
- ii. End Term Examination: 50%
- iii. Counselling, Activities and Tutorials (CAT): 25%
  1. Class Review/compilation of economic news: 5 %
  2. Assignment: 5%
  3. Quiz: 5%
  4. Presentation : 5%
  5. Article Review: 5%

#### Course Contents

##### Unit-1:

(8 Hours)

Money and Interest Rates, changes in equilibrium interest rate, risk structure of interest rates, the subprime collapse and the Baa-Treasury Spread, Expectations theory, market segmentation theory, liquidity premium theory, the lemon problem.

**Unit-2:****(12 Hours)**

Commercial Banks- theoretical basis, profitability & liquidity management, growth and structure, Assets & liabilities of banks, lending & portfolio choice, risk management in banking. Co-operative Banks- origin & growth, features, problems & policy, Khusro committee recommendation. Small savings, provident funds, and pension funds, current pension schemes.

**Unit-3:****(10 Hours)**

Supply of Money-sources of money supply, measures and theory of money supply, monetary expansion & the money multiplier, monetary expansion & currency drain, Reserve Bank of India-Organization and Management, Roles, Monetary policy, recent policy development, liquidity adjustment facility, challenges to monetary policy in India, Securities and Exchange Board of India

**Unit-4:****(20 Hours)**

Call Money Market, Treasury Bills Market, Commercial Bills Market, Market for Commercial Paper & Certificate of Deposits, The Discount Market, Market for Financial Guarantees, Government (Gilt-Edged) Securities Market

**Unit-5:****(10 Hours)**

Industrial Securities Market, Futures, Options and Other Financial Derivatives, Role and Functions of Insurance Companies, Bancassurance & IRDA, Financial Crisis & its Damage to the Economy.

**Prescribed Text Books**

- Bhole, L M (2009): Financial Institutions & Markets, Tata McGraw Hill (5<sup>th</sup> Edition).
- Mishkin, Frederic S & Eakins, Stanley G. (2012): The Economics of Money, Banking and Financial Markets, Prentice Hall (7<sup>th</sup> Edition).
- Indian Institute of Banking and Finance (2008): Principles & Practices of Banking, Macmillan.
- Selected Materials will be provided in the class room for reading and discussion.

**Supplementary Readings:**

- Reddy Y V (2000): A Review of Monetary and Financial Sector Reforms: A Central Bank's Perspective, Universal Book Stall, New Delhi.
- Lewis & Muzan (2000): Monetary Economics, Oxford University Press.
- Journal of Money, Credit, and Banking.
- The Economics Times, The Business Line, & Financial Express.



## Public Economics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 408

Course Name: Public Economics

Credits Equivalent: 4 Credits (One credit is equivalent to 10 hours of lectures / organized classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives

- Familiarize students with basic concepts of Public Economics.
- Enable students to understand different principles and theories of Public Economics.
- Enable students to understand changing scenario of revenue and expenditure.
- Enable students to understand changing role of government in the changed economic dispensations.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be also to fully benefit from the course. A minimum of 75% attendance is must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - I. Class Participation: 05%
  - II. Assignment: 05%
  - III. Quiz: 05%
  - IV. Presentation: 10 %

#### UNIT I

(10 hours)

Markets: Exchange economy, Algebraic exchange economy, consumer and producer surplus; Role of Government in organized society; Fiscal Functions: allocation, distribution and stabilization; Changing perspective — government in a mixed economy, Market failure — imperfections, decreasing costs, externalities; Externalities and negotiation.

#### UNIT II

(10 hours)

Pure Public good: Optimal provision and Voluntary; Impure public goods: Club goods and variable use public goods ; Public goods and externalities ; Public provision for social goods .

### UNIT III

(10 hours)

Taxation: Introduction to taxation; Approaches to tax equity; Tax and expenditure incidence; Principles of tax incidence; Effects of taxation; Taxable capacity: Meaning and determinants; Asymmetric information and efficiency: Adverse selection and moral hazard.

### UNIT IV

(15 hours)

Public Expenditure: rationale for the growth of public expenditure; Wagner's law of increasing state activities, Wiseman-Peacock hypothesis; Pure theory of public expenditure, social cost benefit analysis; Planning and programme budgeting and zero base budgeting.

Public debt: burden of public debt; Public debt management, Repayment of public debt; Public borrowings and price level; Crowding out of private investment and activity; Principles of debt management and repayment.

### UNIT V

(15 hours)

The public budgets: kinds of budgets, Different concepts of deficit: budget, fiscal, primary and monetised deficits; Budgets of the Union Government and state government (selected states) of the past 2-3 Years; Fiscal Federalism: Fiscal federalism in India; Vertical and horizontal imbalance; Assignment of function and sources of revenue- constitutional provisions; Finance commission and planning commission; Centre-State financial relations in India; Trends in revenue and expenditure of the central and state governments, Fiscal crisis and fiscal sector reforms in India;

#### Prescribed Text Books:

1. Musgrave, R.A. and P.B. Musgrave, Public Finance in Theory and Practice Fifth Edition, Tata-McGraw Hill Education Private Ltd, New Delhi.
2. Leach, John. A course in Public Economics, Cambridge University press.
3. Cullis, John. And Jones. Philip, Public Finance and Public Choice Analytical Perspectives Third edition , Oxford university press.

#### Supplementary readings:

1. Gupta, R. J(2<sup>nd</sup> Edition) Public Economics in India , Theory and Practice ,Atlantic Publishers
2. Singh S.K. (1986) Public Finance in Developed and Developing Countries, S. Chand and Company Ltd, New Delhi.
3. Atkinson A.B. and J.E. Siglitz (1980). Lectures on Public Economics, Tata McGraw Hill, New Delhi.
4. Bagchi, Amaresh. (Ed.) (2010), Readings in Public Finance (2010)
5. Datt, R. and Sundaram , Indian Economy (2011) Sixty two Edition, S. Chand , New Delhi.
6. Misra, S.K. and Puri, V.K, Indian Economy 2010 (28th Edition), Himalaya Publishing House, New Delhi.
7. Articles and reading material will be provided in the class from time to time for reading and discussion

## Basics of Microeconomics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

[ESTABLISHED UNDER THE CENTRAL UNIVERSITIES ACT 2009]  
PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ECN 401

**Course Name:** Basics of Microeconomics

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- Enable students to understand basics of microeconomics;
- Enable students analyzing behavior of individuals, firms and markets

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 per cent attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Class Participation and Attendance: 5%
  - ii. Assignment: 10%
  - iii. Presentation : 5%
  - iv. Library Work: 5%

## COURSE CONTENT

### Unit-I (4 hours)

Definition of Economics, Themes of Microeconomics, Why study Micro Economics?, Demand and Supply, Theory of Consumer Behaviour, Revealed Preference, Individual and Market Demand, Consumer Surplus.

### Unit-II (4 hours)

Production, Technology of Production, Production with one variable input, Production with two variable inputs, Returns to Scale, Producer's Surplus.

### Unit-III (4 Hours)

Costs of Production, Measuring Costs, Opportunity Cost, Sunk Costs, Fixed and Variable Costs, marginal and average Costs, Costs in the Short-run, Costs in the Long-run, Economies of Scale, Economies of Scope, Learning Curve, Cost Minimization, Marginal Rate of Technical Substitution.

### Unit –IV (4 Hours)

Profit Maximization and Perfect Competition, Analysis of Competitive Markets, Monopoly and Monopsony, Price Discrimination, Monopolistic Competition and Oligopoly.

### Unit-V (6 Hours)

Pricing of Factors of Production, Marginal Productivity, Wage, Rent, Interest and Profit, Game Theory and Competitive Strategy

#### Prescribed Text Books:

1. Pyndick, R. S., Rubinfeld, D. L., and Mehta, P. L. (2009), *Microeconomics*, Seventh Edition, Pearson Education., New Delhi.
2. Koutsoyiannis, A. (1979), *Modern Microeconomics*, Second Edition, Macmillan Press Ltd, London.
3. Stonier, A.W. and Hague, D.C. (1980), *A Textbook of Economic Theory*, Fifth Edition, Long man Group Limited, London.

#### Suggested Readings:

1. Samuelson, P.A. and Nordhaus, W.D. (2010), *Economics*, Tenth Edition, Tata McGraw-Hill Education,

## Indian Economic Environment

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[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

Course Code: ECN 407

Course Name: Indian Economic Environment

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objective:

After completing this course the students will be able to:

1. Acquaint with knowledge of Indian Business Environment. Emphasis is given to changes in the nature of business firms in the context of globalization
2. Understand basic internal and external factors affecting business organization globally
3. Identify social, political and economic factors in the Indian Economy with reference to the global economy.

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counseling, Activities and Tutorials (CAT): 25%
  - i. Subjective Assignment: 10 %
  - ii. Quiz/Games/Puzzle: 5%
  - iii. Personality Assessment: 10 %

#### Course Content:

##### UNIT I

(3 hours)

##### Theoretical Framework of Business Environment

- Basic concepts: economy, circular flow, production and consumption
- Concept, significance and nature of business environment;
- Elements of environment – internal and external, micro and macro
- changing dimensions of business environment
- Environmental analysis and forecasting

**UNIT II Economic Environment of Business: (7hours)**

- Significance and elements of economic environment
- Economic planning in India
- Industrial development ; industrial policies pre and post reforms
- Economic reforms, liberalization and structural adjustment programmes.

**UNIT III Political and Legal Environment of Business: (3 hours)**

- Political institutions; rationale and extent
- MRTP Act, Competition Act, FEMA and licensing policy
- Consumerism in India; Consumer Protection Act 1986

**UNIT IV Socio-Cultural Environment: (3 hours)**

- Cultural environment: nature and impact
- social orientations of business, responsibilities to different sections, Social responsibility of business;

**UNIT V International Environment: (4hours)**

- Multinational corporations: role , importance and debates
- Economic institutions – International Monetary Fund (IMF) , World Bank, Asian Development Bank and WTO

**Prescribed Text Books:**

1. Fernando. A.C (2011) Business Environment. Pearson Education, New Delhi
2. Cherunilam Francis (2008) Business Environment Text and Cases, 18<sup>th</sup> Edition, Himalaya Publishing House, Mumbai.
3. Aswathappa .K, (2011) Essentials of Business Environment, 11<sup>th</sup> Edition, Himalaya Publishing House, Mumbai.

**Supplementary Reading**

1. Adhikary M. (2009) Economic Environment of Business, Sultan Chand & Sons, New Delhi.
2. Ahluwalia I.J. (1985) Industrial Growth in India, Oxford University Press, Delhi.
3. Dhingra I.C. (2002) Indian Economy, Sultan Chand & Sons, New Delhi.
4. Cherunilam Francis (2003) International Business Environment, Himalaya Publishing House, New Delhi.
5. Saleem Shaikh (2005) Business Environment, Pearson Education, New Delhi.
6. Sundharam K.P.M. and Datt Ruddar (2001) Indian Economy, S. Chand & Sons, New Delhi.
7. Paul Justin (2010) Business Environment-Text and Cases, 3<sup>rd</sup> Edition, Tata McGraw Hill, New Delhi.
8. Misra S.K. & Puri V.K. (2009) Indian Economy, 27<sup>th</sup> Edition, Himalaya Publishing House, Mumbai.

## Basic Terms and Concepts in Economics

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### CENTRAL UNIVERSITY OF HIMACHAL PRADESH

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ECN 445

**Course Name:** Basic Terms and Concepts in Economics

**Credit Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objective:**

- To enable students understand the commonly used economic basic concepts and terms.

**Attendance Requirements:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75 per cent attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Class Participation and Attendance: 5%
  - ii. Assignment: 10%
  - iii. Presentation : 5%
  - iv. Quiz/ Class Test: 5%

**Course Content**

#### Unit I

**Microeconomics:**

Meaning of Economics; Scarcity and Choice; Positive Economics; Normative Economics; Utility: Cardinal utility, Ordinal utility, Rationality; Trade-off; Demand; Supply; Equilibrium Price; Elasticity; Consumer surplus; producer surplus; Dead weight loss; Opportunity Cost; Sunk Costs; Long run; Short run; Fixed and Variable Costs; Capital widening, Capital deepening; Technology; Production Possibility frontier; Price Controls; Licences; Marginal analysis; Competitive market: Perfect competition, Monopoly, Monopolistic completion, Price discrimination; Efficiency; Pareto optimality; Efficient Markets hypothesis.

#### Unit II

**Macroeconomics:**

National Accounts: Value added, Gross Domestic Product (GDP), Net Domestic Product (NDP), Gross National Product (GNP), Net National Product (NNP), GDP Per Capita, Disposable Income;

Real Changes: Real Income, Real Wage, Real Interest Rate; Stock; Flow; Full Employment; Frictional Unemployment, Structural Unemployment; Labour force; Economic Growth; Saving, Investment, Capital and Capital formation; Business Cycle: Depression, Recession, Expansion; Price Stability: Inflation, Deflation; Market-Clearing; Aggregate Price Level: Price Index, Consumer Price Index, Producer Price Index, Inflation Rate, GDP Deflator; Effective demand; Marginal Efficiency of Capital; Natural Rate of Unemployment.

### Unit III

#### Public Finance and Monetary Economics:

Taxation: incidence, Proportional tax, Progressive tax, Regressive tax; Laffer curve; Tax Base, Tax buoyancy; Tax elasticity; Tax incidence; Goods and Service tax (GST); Budget: Revenue receipts, Capital receipts, Revenue expenditure, Capital expenditure; Deficit: Budget deficit, revenue deficit, Fiscal deficit, Primary deficit. Money; Money and Interest Rate; Supply of Money: Basics of money supply, creation of money; Money multiplier process; Definitions of interest rate; Stabilization Policies: Fiscal Policy, Monetary policy.

### Unit IV

#### Banking and International Trade:

Risk Management in Banks: Basel Norms, Capital Adequacy Ratio, Asset Liability Management, and Interest rate risk; Operational Risk management in global banks; Reserve Bank of India: Instruments of RBI (bank rate, repo rate, reverse repo rate, open market operation, discount rates, reserve requirement), Targets and goals of RBI; Shares and debentures; Stock market index: SENSEX; Nifty.

Gains from Trade: Absolute Advantage, Comparative Advantage, Specialization; Purchasing Power Parity (PPP); Nominal Exchange rate; Real exchange rate; Balance of payments; Current account deficit; Capital account deficit; Current account convertibility; Capital account convertibility, WTO.

### Unit V

#### Public Economics and Development Economics:

Market failure: imperfections, decreasing costs, externalities; Information asymmetry, Theory of second best; Public goods and market failure, Free rider problem; Public goods-pure and impure public goods; Club goods; Private good; Merit goods; Property rights. The Coase theorem; Carbon Trading; Polluter pay principal.

Meaning of Development; Absolute poverty; Relative poverty; Human Development Index (HDI); Trickle-down effect; Inclusive growth; Planned economy; Market economy; Mixed economy; Liberalization; Convergence; Planning; Cost benefit analysis; Present value of future earnings; Rate of discount;

#### Prescribed Text Books:

1. Samuelson, P.A. and W.D. Nordhaus (2010). *Economics, 10<sup>th</sup> Edition*, New Delhi: Tata McGraw-Hill.
2. Black, John, Nigar Hashimzade, Gareth Myles (eds.) (2012). *Oxford Dictionary of Economics 4<sup>th</sup> Edition*. New Delhi: Oxford University Press.
3. Gupta, Suraj B. (1982). *Monetary Economics- Institutions, Theory and Policy*. New Delhi: S. Chand Publishers.



## Basics of Macroeconomics

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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)

[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** ECN 406

**Course Name:** Basics of Macroeconomics

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 5 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

#### Course Objectives:

- Familiarize students with the basic concepts of Macroeconomics
- Enable the students to understand the functioning of the macro economy
- Developing critical skills to understand the implications of macroeconomic policies

#### Attendance Requirements:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### Evaluation Criteria:

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Counselling, Activities and Tutorials (CAT): 25%
  - i. Class Participation: 5%
  - ii. Assignment: 5%
  - iii. Quiz: 5%
  - iv. Presentation : 10 %

#### Course Content:

##### UNIT – I

(4 Hours)

Meaning, scope and importance of macro Economics, Schools of thought in macro economics, Concepts of gross domestic product, GNP and national income; Circular flow of income in two, three and four-sector economy; Measurement of national income; India's national income accounts

**UNIT – II****(7 Hours)**

Say's law of markets and the classical theory of employment, Keynes' objection to the classical theory; Keynesian theory of income, output and employment; Aggregate demand and aggregate supply functions; The principle of effective demand; Consumption function — average and marginal propensities to consume, factors influencing consumption spending, Keynes Psychological law of consumption, Post Keynesian theories of consumption: relative and permanent income hypotheses

**UNIT – III****(7 Hours)**

Investment: autonomous and induced investment; Marginal efficiency of capital, Theories of Investment: classical, Keynesian and accelerator theory, Multiplier: investment, budget and tax; IS and LM curves: derivation, shifts and rotations, simultaneous equilibrium in product market and money market.

**UNIT – IV****(6 Hours)**

Money — meaning, functions and classification, Demand for money: quantity theory of money, fisher equation and cambridge equation ; Keynes' approach: transaction, precautionary and speculative demand for money, Friedman's restatement of quantity theory of money, Money Supply: meaning and measures M1, M2, M3, M4; Credit creation and credit control by banks and Money multiplier.

**UNIT – V****(6 Hours)**

Inflation: meaning, types and effects; Demand pull and cost push theories of inflation; Trade off between inflation and unemployment – Phillips curve, Macroeconomic policies: objectives and Instruments.

**Prescribed Text Books:**

1. Shapiro, Edward (2001), Macroeconomic Analysis Fifth Edition, Galgotia Publication, New Delhi.
2. Dornbusch, R. and S. Fischer (2005), Macroeconomics, 4e, McGraw-Hill Kogakusha Tokyo.
3. Blanchard, Oliver (2007), Macroeconomics, Pearson Education, New Delhi

**Supplementary Readings:**

1. Patinkin, Don (1965), Money, Interest and Prices, Harper and Row, New York.
2. Rakshit, M. (1998), Studies in Macroeconomics in Developing Countries, Oxford University Press, New Delhi
3. Andrew B. Abel, Ben S. Bernanke and Dean Croushore (2011), Macroeconomics, Indian Edition, Pearson
4. Gupta B. Suraj, Monetary Economics- Institutions, Theory and Policy, S.Chand & Company Ltd, New Delhi

**School of Tourism, Travel & Hospitality Management**

## Department of Tourism & Travel Management

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### School of Tourism, Travel & Hospitality Management

Name of the Department: **Department of Tourism and Travel Management**

Name of the Programme of Study: **MBA (Travel and Tourism)**

#### Courses for Semester 2

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	TTM 427	Managerial Economics for Tourism	02	NA	Dr S. Sundararaman
2.	TTM 429	Security, Rescue and Disaster management	02	NA	Dr S. Sundararaman
3	TTM 436	House Keeping in Hospitality Operations	04	NA	Mr Debasis Sahoo
4	TTM 437	Front Office Operations in Hotels	04	NA	Mr Debasis Sahoo
5	TTM 428	Personal Selling and Salesmanship	02	NA	Mr. Arun Bhatia
6	TTM 528	Management Information System	02	NA	Mr. Arun Bhatia
7	TTM 401	Introduction to Travel Agency and Tour Operation Business	02	NA	Dr Suman Sharma
8	TTM 409	Itinerary Preparation and Costing	02	NA	Dr Suman Sharma
9	TTM 431	Galileo CRS Training	02	NA	Dr Suman Sharma

**Courses for Semester 4**

Sr. No	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1.	TTM 533	Economics of Tourism	02	NA	Dr S. Sundararaman
2.	TTM 522	Strategic Management for Tourism and Travel	02	NA	Dr S. Sundararaman
3	TTM 437	Front Office Operations in Hotels	04	TTM 422	Mr Debasis Sahoo
4	TTM 438	Food and Beverage Service	04	TTM 422	Mr Debasis Sahoo
5	TTM 526	E - Tourism	02	NA	Mr. Arun Bhatia
6	TTM 539	Service Quality Management in Tourism and Hospitality	02	NA	Mr. Arun Bhatia
7	TTM 525	Tourism Geography Pt II	04	NA	Dr Suman Sharma
8	TTM 518	Specialization Travel Agencies and Tour Operations	02	NA	Dr Suman Sharma

**University Wide Courses**

Sr. No.	Course Code	Course Name	Credits	Code No. of Pre-requisite/ Co-requisites if any	Teacher
1	TTM 429	Security, Rescue and Disaster management	02	NA	Dr S. Sundararaman
2	TTM 528	Management Information System	02	NA	Mr. Arun Bhatia
3	TTM 428	Personal Selling and Salesmanship	02	NA	Mr. Arun Bhatia
4	TTM 528	Management Information System	02	NA	Mr. Arun Bhatia
5	TTM 533	Economics of Tourism	02	NA	Dr S. Sundararaman
6	TTM 429	Security, Rescue and Disaster management	02	NA	Dr S. Sundararaman
7	TTM 526	E - Tourism	02	NA	Mr. Arun Bhatia

## Housekeeping in Hospitality Operations

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** TTM436 (2<sup>nd</sup> Semester MBA T&T)

**Course Name:** Housekeeping in Hospitality Operations

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To make student aware of the role of Housekeeping in Hospitality Operations.
- To bring about an understanding of the housekeeping department and its operations
- To make student understand the basic concept of various areas of a Hotel that comes under the housekeeping department and their maintenance procedures.
- To make student familiar with the various types of cleaning equipments & reagents.
- To give student a clear understanding of various guest room supplies and their importance.
- To bring about an understanding of allied departments of housekeeping like laundry, linen room, horticulture, pest control etc.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. **Mid Term Examination: 25%**
2. **End Term Examination: 50%**
3. **Continuous Internal Assessment : 25%**

- Presentations: 10 %
- Class test: 10 %
- Assignments: 5%

**Course Contents:**

**UNIT - I: Introduction & scope of Housekeeping department (7 Hours)**

- Classification of hotels and its various departments.
- Responsibilities of housekeeping department
- Scope of housekeeping in hotels, hospitals, corporate offices, hostels etc.
- Layout of the housekeeping department & its various sections.
- Organizational structure & role of Housekeeping staff members.
- Housekeeping co-ordination and control with other departments.

**UNIT - II: Housekeeping Services: Cleaning & maintenance (12 Hours)**

- Types of guest rooms, lay out of rooms and floor pantry & maid's cart setup.
- Cleaning equipments: types, uses, selection criteria, care and maintenance.
- Cleaning agents – types, uses, selection criteria, storage, and safety rules.
- Cleaning of Guest rooms and public areas, Cleaning schedules & programme.
- Types of bed room and bath room linens, Housekeeping supervision

**UNIT - III: Housekeeping operation & Management (6 Hours)**

- Daily routine operation of HK department.
- Types of Keys and key control procedures, Lost & found management.
- Cleaning of special surfaces like: Metals, floor surfaces, wall coverings & Glasses.
- Pest control: Pests, Types and pest control mechanisms.
- Organizing of Housekeeping staffs, shifts & duty Rota etc.

**UNIT - IV: Linen, Uniform room & Laundry Operation (5 Hours)**

- Lay out of linen room, Types of linen, activities in linen room, equipments used.
- Records maintained in linen room, linen inventory, linen recycling & linen hire.
- Uniform room: Importance, Layout, records and registers maintained in uniform room.
- Sewing room: Role of sewing room, activities, tools & equipments used in sewing room.
- Laundry: Laundry symbols, Flow process, laundry aids & equipments.
- Stains: classification, general rules of stain removal & stain removal agents.

## **UNIT – V: Allied responsibilities of Housekeeping Department**

**(10 Hours)**

- Horticulture: study of different types of flowers, plants, foliage, Tools & fertilizers.
- Interior decoration: Elements & Principles of design, Colour wheel, Types of lighting, window treatment, Floor finishes & floor seals.
- Safety & security in HK: Fire, Accidents: Causes & prevention, handling of a sick guest.
- Budgetary control: Importance of budget, types, Preparation of budget & purchasing control.
- Case studies related to HK operation

### **Prescribed Text Books:**

1. Hotel Housekeeping Operations and Management: Raghubalan; Oxford University Press India.
2. Hotel, Hostel and Hospital Housekeeping: Joan Cameron Branson, Margaret Lennox, Edward Arnold Publication, 1988.
- 3.

### **Suggested Additional Readings:**

1. Text book of hotel Housekeeping-Sudheer Andrews
2. Hotel & motel management operation: Gray and Ligouri; PHI, New Delhi, 2000.
3. Guide to Hotel Housekeeping: Mary E. Palmer
4. Hotel housekeeping training manual: Sudheer Andrews
5. Professional Management of Housekeeping Operations: Thomas J. A. Jones
6. Housekeeping management: Matt A Casado
7. The Professional Housekeeper: M. Schneider, G. Tucker, M.Scoviak, MSC Lerner
8. Housekeeping management for hotels and residential establishments: Rosemary Hurst
9. Managing housekeeping operations: Margaret M. Kappa, Aleta Nitschke, Patricia B. Schappert



## Front office operation in Hotels

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** TTM437 (4<sup>th</sup> Semester MBA T&T)

**Course Name:** Front office operation in Hotels

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To make student aware of the evolution and growth of hotel industry across the world.
- To bring about an understanding of Hotel industry in India.
- To make student understand the basic concept of a Hotel and its operational departments.
- To make student familiar with the various sections and areas of Front office department and their day to day activities.
- To clarify the role of front office department in contributing to the hotel revenue as well as guest satisfaction.

### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

- 1. Mid Term Examination: 25%**
- 2. End Term Examination: 50%**
- 3. Continuous Internal Assessment : 25%**
  - Presentations: 10 %
  - Class test: 10 %
  - Assignments: 5%

**Course Contents:**

**UNIT - I: Introduction to Hotel & Hospitality industry**

**(13 Hours)**

- Origin & evolution of accommodation units & Hotels.
- History & development of Hotel industry in India & abroad.
- Inter Relationship between Travels, Tourism & Hospitality.
- International airlines, currencies, credit cards, Travel agencies, hotel chains, capitals etc.
- Types of Hotels, Classification of Hotels (Govt. classification, location, clientele basis etc.)
- Lay out of FO department & function of its various sections.
- Organizational chart of front office department in Large, medium and small hotels.
- Duties and responsibilities of Front office staff members.

**UNIT - II: Front Office operation**

**(12 Hours)**

- Types of rooms, Tariff structure: definition, factors, basis of charging, meal plans etc.
- Types of room rates, Room tariff fixation
- Product selling tools-Brochures, Tariff cards, summer package brochure, tent card etc.
- Guest cycle, comparative study Front office activities & guest activities.
- Reservation: Importance, Source & modes of Reservation and its various types.
- Systems of Reservations: diary system, whitney system, computerized reservation system
- Amendment and cancellation procedures for various systems of reservation
- CRS: Centralized reservation system, Group reservations, cancellations, overbooking etc.

**UNIT - III: Front office Guest Services**

**(5 Hours)**

- Registration Process, forms and formats used, Handling FITs( with reservation & walk-in)
- Handling GIT (Group registration), handling Registration of foreigners ( C-Forms)
- Mail & message handling, paging, Safe deposit locker procedure.
- Room key control process & Room change procedure
- SB check-in procedure & Wakeup call procedure.
- Handling Guest Complaints.

**UNIT - IV: Front office accounting & audit****(7 Hours)**

- Guest check out procedure & Mode of bill settlement, C/O problems and solutions.
- Front office guest accounting: types of accounts, vouchers, folios, ledger etc.
- Front office accounting cycle.
- Night auditing: Importance, function of Night Auditor & the night auditing process
- Yield Management: Concept, tools, elements, benefits, strategies & challenges.
- Forecasting: benefits, data required, necessary records, RAF: formula.
- Budgeting: types, Budgetary control: Objectives, essentials, Advantages & limitations

**UNIT - V: Role of Computers in FO operation & Case studies****(3 Hours)**

- Computer Application in Front office: MIS, HIS, CRS, PMS
- Case studies related to Guest Handling in Front office

**Prescribed Text Books:**

1. Front Office Management: S.K. Bhatnagar, Frank Bros. & Co. Ltd.
2. Hotel front office operation and management: J R Tewari, Oxford University press India.

**Suggested Additional Readings:**

1. Professional Hotel Management: Jagmohan Negi; S. Chand Co., New Delhi.
2. Hotel & motel management operation: Gray and Ligouri; PHI, New Delhi, 2000.
3. Managing front office operations: Michael L. Kasavana, Richard M. Brooks
4. Hotel Front Office Training Manual: Sudheer Andrews
5. Hotel front office management: James A. Bardi, Wiley India publication
6. Text book of front office Management and operation: Sudheer Andrews
7. Check-In Check-Out: Managing Hotel Operations: Vallen Gary K., Vallen

## e- Tourism

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**CENTRAL UNIVERSITY OF HIMACHAL PRADESH**  
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PO BOX: 21, DHARAMSHALA, DISTRICT KANGRA - 176215 (HP)  
[www.cuhimachal.ac.in](http://www.cuhimachal.ac.in)

**Course Code:** TTM 526

**Course Name:** e- Tourism

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To make student understand the basic concepts of e tourism
- To create awareness of tourism in international context & to make student familiar with use Client Relationship Methods in Tourism.
- To clarify the role of CRM in Tourism.
- To clarify the role of social Networking; Cyber Marketing and its importance in current scenario.
- Current debates in e- Tourism and future of e Tourism

### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

1. **Mid Term Examination: 25%**
2. **End Term Examination: 50%**
3. **Continuous Internal Assessment : 25%**

- Presentations: 10 %
- Class test: 10 %
- Assignments: 5%

**Course Contents:**

**UNIT - I: INTRODUCTION TO e TOURISM**

**(5Hours)**

- Introduction to e - Tourism
- Historical Development.
- Tourism and information technology.
- Information flow in the tourism industry.
- The benefits of E Marketing in Tourism
- The Model of Intermediation – Disintermediation – Reintermediation Cycle.

**UNIT - II: Use of ICT in Travel Agency Operations**

**(4 Hours)**

- Travel access and use of IT with Advantages and Disadvantages.
- E-tourism: Supply (The Tourism Industry Sectors).
- E-tourism: Demand (Customers).
- Computerized Reservation System (CRS).
- A case study of IRCTC – Electronic Ticketing and Ticket delivery network.

**UNIT - III: Client Relationship Management**

**(4 Hours)**

- Development of CRM – History and Growth.
- Client Relationship Management.
- Role /Importance of CRM.
- Advantages and disadvantages of CRM.
- Barriers in adoption of CRM.

**UNIT - IV: Social Networking and Cyber Marketing**

**(4 Hours)**

- Social Networking – Meaning; Importance and its impacts on tourism business.
- Cyber Marketing.
- Cyber Marketing and Conventional Marketing.
- Cyber Marketing Model.
- The nature of cyber marketing and limitations of Cyber Marketing.
- 10 Keys to Successful E Marketing activities in Tourism.

**UNIT – V: Role of Net Banking; Mobile Banking and Current Debates.**

**(3 Hours)**

- Net Banking and mode of Payment through internet, Steps in Online Payment
- Mobile Banking and its applications in Travel Trade, Mobile Marketing of Tourism Products
- Current Debates in e – Tourism.
- Future of e- Tourism.
- Case Study on e tourism.

**Prescribed Text Books:**

**E Tourism - CTR Contemporary Tourism Reviews - Dimitorias Buhalis and Soo Hyun Jun PHD.**

**REFERENCES**

1. Sheldon, P. **Tourism Information Technology: CABI,2002**
2. Inkpen, G. **Information Technology for Travel and Tourism: Addison Wesley,2000**
3. Buhalis, D. **E Tourism: Information technology for strategic tourism management: PH,2004**
4. Poon,A. **Tourism, Technology, and Competitive strategies: CABI,1998**
5. Rayport, J.F. and Jaworski, B.J. **Introduction to E-Commerce: McGrawHill,2003**
6. Eisenmann, T.R.**Internet Business Models – Text and Cases: McGrawHill,2002** Malvino, A.P. **Electronic Principles: McGraw-Hill,1995**
7. Lucas Jr., H. C. ( 2005) **Information Technology For Management McGraw Hill.**
8. Burch, J. and Grudnitski G. (1989), **Information Systems: Theory and Practice. 5th ed., John Wiley, New York.**
9. David, V. (1992). **Foundations of Business Systems, Dryden Press, Fort Worth.**
10. Eliason, A. L. (1987). **On-line Business Computer Applications, 2nd ed., Science Research Associates, Chicago.**
11. Estrada, S. (1993). **Connecting to the Internet, O'Reilly,Sebastopol, CA.**

## Management Information System

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**Course Code:** TTM 528

**Course Name:** Management Information System

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- To make student understand the basic concepts of Management Information Systems.
- To make student understand the E Commerce Business in india.
- To make students understand the role of MIS at various Management Levels.

### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### **Evaluation Criteria:**

- 1. Mid Term Examination: 25%**
- 2. End Term Examination: 50%**
- 3. Continuous Internal Assessment : 25%**
  - Presentations: 10 %
  - Class test: 10 %
  - Assignments: 5%

**Course Contents:**

**UNIT -I: INTRODUCTION TO IT IN TOURISM**

**(5Hours)**

- Introduction.
- Definitions of Information Technology.
- Types of Information Systems.
- Business Perspective of IT.
- Internet and its application in Tourism Business.
- Computer Aided Decision Making.

**UNIT – II MANAGEMENT INFORMATION SYSTEM : AN INTRODUCTION**

**( 4 Hours )**

- Management Information Systems – An Introduction.
- Factors for the growth of MIS.
- Historical Background.
- Theories of Evolution of MIS.
- Organization and Information System – Two Way Relationship.
- Growing need of information
- Data; information and Knowledge
- Value and cost of information
- Information Systems: Success and Failure.

**UNIT – III MANAGEMENT INFORMATION AND CONTROL SYSTEMS**

**(4 Hours)**

- System Concepts and what is a system- Waterfall Model, V Model, SDLC , Prototyping
- Role of MIS at various Management Levels.
- Decision – Assisting Information Systems.
- System Vulnerability and Abuse
- Auditing information System.

**UNIT – IV INFORMATION SYSTEM SECURITY**

**(4 Hours)**

- Introduction: Ethics in Information Society.
- Information rights; Privacy and Freedom in an information society.
- Protecting Computer Equipment and Files.



- Limiting Logical Access to computer systems.
- Disaster Recovery Plan
- Computer Virus and Prevention.

**UNIT – V EMERGING TRENDS IN IT**

**(3 Hours)**

- Competitiveness of ICT
- E Commerce: Essential Components and Future issues.
- E commerce design issues
- Privacy in the context of E- Commerce.
- Supply chain Management , M Commerce, Knowledge Management , Business Process Re Engineering

**Prescribed Text Books:**

**Management Information Systems – Sahil Raj – Pearson Publications**

**Management Information Systems - P Mohan – Himalaya Publishing House.**

**REFERENCES:**

**Lauden; K C AND Laudén J P ( 2002) Management Information Systems – Managing the Digital Firm ; Pearson Education.**

**Turban E McLean ; E and Warehouse J ( 1999 ) Information Technology for Management John Wiley and Sons Inc. ( Asia ).**

**Davis GB 1974 MIS Conceptual Foundations; Structure and Development; Mcgraw Hill New York.**

**Zani W.S 1973 “A Blue Print for MIS “, Harvard Business Review.**

**Kanter J. 1972 Management Oriented MIS; Prentice Hall Inc : Englewood – Cliffs.**

**Jawadekar; W.S. 1998 Management Information System; Tata McGraw Hill Publishing Company Ltd.**

**John Ward; Joe Peppard; Strategic Planning for Information Systems; John Wiley and and Sons; Third Edition (2002)**

## Introduction to travel agency and tour operation business

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**Course Code:** TTM401

**Course Name:** Introduction to travel agency and tour operation business

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to Travel Agency Mgt. is the basis for understanding the modus operandi of a travel and tour company. It shall substantiate the students with the basic practical inputs about the various procedures involved in handling the operations of a travel agency. Further the objectives of the course are to acquire an in-depth knowledge about the Tour Operation Management and to become familiar with the Tour Operation Techniques and strategies required for successful handling of Tour Operation Business.

- Introduce students to the travel agency and tour operation business.
- The students will also know the procedures involved in getting permission for opening travel business.
- To clarify the Role of the State in Tourism to the students.

#### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Presentations: 10 %
  - Class test: 10%
  - Assignments: 5%

## **Course Contents:**

### **UNIT – I: INTRODUCTION TO TRAVEL AGENCY & TOUR OPERATIONS (5 Hours)**

- History and growth of travel agency business, emergence of Thomas Cook.
- Emergence of Travel Intermediaries, Indian travel agents and tour operators - an overview
- Definition of travel agent and tour operator; differentiation, interrelationship of TA/TO and principles of present business trends and future prospects, problems and issues.
- Organization structure of a standard Travel Agency with examples of some leading agencies (SITA, COX & KINGS, MERCURY TRAVELS).
- Various divisions or departments of a Travel Agency and their functional & operational co-ordination (with special reference to the above mentioned agencies).

### **UNIT – II: Role of Tour operations in Indian perspective (4 Hours)**

- Tour Operation: Definition- Concept-History and Growth of Tour Operation business.
- Types of Tour Operators. Organizational Structure, Forms of Organization, Departments and its functions.
- The Process of travel decision making, Mode and Destination selection.
- Reservation and Cancellation procedures for Tour related services-Hotels, Airlines, Cruise liners, Car rentals and Rail travel.
- Commission Structures from Suppliers of Service.

### **UNIT – III: Tour Operation Documentation (4 Hours)**

- Tour Operation Documentation: Voucher-Hotel and Airline Exchange Order, Pax Docket, Status Report, Daily Sales Record, AGT Statements-Credit Cards-Importance and Future.
- RBI Regulations for Tour Operators.
- Managing Tour Operation. Field Operations- inbound and outbound.
- Managing Distribution
- Role of Distribution in exchange process, Selling through distribution chains.
- Distribution System in Tourism Operation.
- Management of In-house operations.

### **UNIT – IV: APPROVAL OF TRAVEL AGENTS AND TOUR OPERATORS:(3 Hours)**

- Setting up travel agency/tour operation business: Market research, sources of funding
- Comparative study of various types of organization proprietorship, partnership, private limited and limited,
- Government rules for getting approval, IATA rules, regulation for accreditation, Documentation, Sources of earning: commissions, service charges etc

## **UNIT – V: TRAVEL FORMALITIES -INTRODUCTION (4Hours)**

- Travel formalities-Passport, visa, health certificate, taxes, customs, Forex entitlement, currencies, and travel insurance.
- Difference between Passport & VISA, Visas issued in India.
- Protectorate of emigrants (POE) - ECR, ECNR, POE.
- Passport -methods & procedures involved in passport
- Formalities to get visa of U.K, Saudi Arabia, Thailand, New-Zealand.

### **Prescribed Text Books:**

1. Chand, Mohinder, Travel Agency Management, Anmol Publication
2. Successful tourism management volume-II,tourism practices-Pran Nath Seth, sterling publishers
3. Tourism-Principles, Practices, Philosophies-Charless R. Goeldner& J.R.Brent Ritchie (Wiley publications).

### **Suggested Additional Readings:**

1. Tourism: Transport & Travel Management by P.C. Sinha,Anmol Publishers
2. Travel Agency and Tour Operation: Concepts And Principles -by Jag Mohan Negi
3. Travel Agency And Tour Operation: Concepts And Principles, Lalita Sharma, Centrum Press (2010)
4. Travel Agency And Ticketing ,by Deepa Garg,Publisher,Mohit Publications (2009)
5. Tourism Development: Principles and Practices by Bhatia, A K; Sterling Publishers Pvt Ltd- (2009).
6. Tourism The Business Of Travel,3/ed - Roy A. Cook, Laura J. Yale, Joseph J. Marqua, Pearson (2007)

## Security, Rescue and Disaster Management

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**Course Code:** TTM 429

**Course Name:** Security, Rescue and Disaster Management

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Disaster natural or manmade results in death and destructions. In maximum cases tourism remains the worst affected business aftermath disaster. Over the period of years researchers globally have designed ways to reduce the impact of various types of disaster. It has become imperative for tourism professionals to understand the different steps to be initiated in post disaster situation and pull tourists, affected communities, and tourism business out of trouble. This course is mainly designed for the students to understand the negative impact of disaster and motivate them to initiate steps in right direction to avoid loss to life and property

#### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

**1. Mid Term Examination: 25%**

**2. End Term Examination: 50%**

**3. Continuous Internal Assessment : 25%**

- Presentations: 10 %
- Class test: 10 %
- Assignments: 5%

## Course Contents

### UNIT 1: Dimension of Disaster

- Defining Disaster
- Types of Disaster
- Measuring Disaster
- Type of Disaster Impacts
- Disaster Archive
- Changes in Physical Environment
- Changes in Socio-Cultural Environment
- Managing Disaster
- Post-Disaster Recovery

### UNIT - II: Impact of Disaster on Tourism

- Understanding Destination as a competitive unit
- Understanding the Image of the Destination
- The Image effects of Security Events
- The Significance of Negative Events in Tourism Decision Process
- Rebuilding the image of the destination

### UNIT III: Impact of Terrorism on Tourism

- Analysis of Impact of Terrorism on Tourism
- Immediate needs of Tourists after Terror Attack at destinations
- Strategic actions as Preventive Measures
- Ways to eradicate Impact of Terrorism on Tourism

### UNIT IV: Crisis Planning and Organisational Measures

- Generic Planning
- Contingency Planning
- Preventive Planning

### UNIT V: Safety and Security in Tourism Industry

- Security and security services
- Safety signs
- Possible risk at crowded places
- First aid
- Incident Reporting
- Communication during emergencies
- Emergency Planning

- Crowd management plan
- Fire Procedures
- Evacuation Procedures
- Bomb Threat procedures
- Instructions for all employees during Disaster

### **Prescribed Text Books**

Crisis Management in Tourism Industry (2003), Drik Glaesser, Elsevier Butterworth-Heinemann, Burlington, ISBN 0 7506 5976 9.

Dimensions of Disaster Environmental Hazards, Assessing Risk and Reducing Disaster sixth edition (2013), Keith Smith, Routledge, Oxon, ISBN: 978- 0-415-68105-9

Event Management for Tourism, Cultural, Business and Sporting Event, Lynn Van Der Wagen, Brenda R. Carlos, Pearson, New Delhi, ISBN: 978 – 81 – 7758 – 065 – 5.

“Developing Tourism amidst Economic Slowdown and Terror Attacks”, S.Sundararaman, JOHAR, Vol. No. 5, No. 2, July 2010. ISSN No. 0973 - 4538

“Managing Environmental Degradation – An Effective Tool for Increasing Economic Benefits of Tourism”, S.Sundararaman, Indian Journal of Applied Hospitality & Tourism Research, Vol. No. 2, January 2010., ISSN No. 0975 - 4954

“Terrorism a Key Deterrence to Tourism: Ways to Mitigate Impacts” S.Sundararaman, Indian Journal of Applied Hospitality & Tourism Research, Vol. No. 1, January 2009, ISSN No. 0975 – 4954

## Specialization travel Agencies and tour Operations

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**Course Code:** TTM518

**Course Name:** Specialization travel Agencies and tour Operations

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to

- Introduce students to the travel agency and tour operation business.
- The students will also know the procedures involved in getting permission for opening travel business.
- To clarify the Role of the State in Tourism to the students.

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. Mid Term Examination: 25%
2. End Term Examination: 50%
3. Continuous Internal Assessment : 25%
  - Presentations: 10 %
  - Class test: 10%
  - Assignments: 5%

**Course Contents:**

**UNIT – I: INTRODUCTION TO TRAVEL AGENCY & TOUR OPERATIONS (5 Hours)**

- Travel Agency -Definition , history & development, Functions
- Type of Travel Agencies & tour operators
- Travel trade: Changing dimensions
- Differentiation between Travel Agency and Tour Operation business.
- Organization structure of a travel agency/ Departments of a travel agency



**UNIT – II: TRAVEL FORMALITIES -INTRODUCTION TRAVEL FORMALITIES (4 Hours)**

- Travel formalities-Passport, visa, health certificate, taxes, customs, Forex entitlement, currencies, and travel insurance.
- Difference between Passport & VISA, Visas issued in India.
- Protectorate of emigrants (POE) - ECR, ECNR, POE.
- Passport -methods & procedures involved in passport
- Formalities to get visa of U.K, Saudi Arabia, Thailand, New-Zealand.

**UNIT – III: Automation in tourism industry (3 Hours)**

- Computer Reservation system-overview
- Benefits & disadvantages of CRS in travel industry.
- Computer Reservation system - types, major CRS systems (Amadeus, sabre, Galileo) & there market share.

**UNIT – IV: Approval of Travel Agents and Tour Operators: (4 Hours)**

- Govt. rules for getting approval for travel business(travel agency, inbound tour operator, domestic tour operator, tourist transport operator, travel guides)
- IATA rules and regulations for approval of a travel agency
- The Role of the Department of Tourism, TAAI, IATO, ITDC, TFCI)

**UNIT – V: Role of transportation in tour operations in Indian perspective (4 Hours)**

- Surface transportation, modes-automobile, bus, coach, car rental, campers, Railways (Indian railways, tourist trains in India).
- Main highways & Inland waterways of India
- Airline- history, scheduled & non-scheduled carriers, regulations of airline industry, open sky policy in India, major airline players in India.
- Role of DGCA & AAI in development of air transportation.

**Prescribed Text Books:**

1. Chand, Mohinder, Travel Agency Management, Anmol Publication
2. Successful tourism management volume-II, tourism practices-Pran Nath Seth, sterling publishers
3. Tourism-Principles, Practices, Philosophies-Charless R. Goeldner & J.R.Brent Ritchie (Wiley publications).

**Suggested Additional Readings:**

1. Tourism: Transport & Travel Management by P.C. Sinha, Anmol Publishers
2. Travel Agency and Tour Operation: Concepts And Principles -by Jag Mohan Negi
3. Travel Agency And Tour Operation: Concepts And Principles, Lalita Sharma, Centrum Press (2010)
4. Travel Agency And Ticketing ,by Deepa Garg, Publisher, Mohit Publications (2009)
5. Tourism Development: Principles and Practices by Bhatia, A K; Sterling Publishers Pvt Ltd- (2009).
6. Tourism The Business Of Travel, 3/ed - Roy A. Cook, Laura J. Yale, Joseph J. Marqua, Pearson (2007)

## Strategic Management for Travel and Tourism

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**Course Code:** TTM 522

**Course Name:** Strategic Management for Travel and Tourism

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** Strategy plays a vital role in managing the business successfully. Tourism being a complex business often requires a shift in strategies to overcome the cut throat competition. Emergence of similar destinations and services globally paved way for tourism professionals to concentrate on their strategies to attract the tourists towards their destinations, services and products. Course is mainly designed to inspire students to learn from yesterday, think about today, and to design better strategies to overcome problems in future

#### **Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

#### **Evaluation Criteria:**

- 1. Mid Term Examination: 25%**
- 2. End Term Examination: 50%**
- 3. Continuous Internal Assessment : 25%**
  - Presentations: 10 %
  - Class test: 10 %
  - Assignments: 5%

## Course Contents

### UNIT 1: Strategic Purpose

- Introduction-Importance
- Purpose and Process
- Vision, Mission and Objectives
- Contexts and uses of Strategy in Tourism

### UNIT – II: Strategic Analysis

- PEST Analysis
- External Environment
- Porters Five Forces Analysis
- Destination Competitiveness
- Evolution of Product
- SWOT Analysis
- Performance Monitoring and Control

### UNIT - III: Strategic Choices

- Porter's Generic Strategies
- Sustaining Competitive Advantage
- Strategic Direction and Methods
- Strategic Evaluation

### UNIT IV: Strategic Implementation

- Organising and Resourcing
- Managing and Monitoring
- Preparation of Strategy

### UNIT V: Pricing Strategies

- Pricing Strategies When the Customer means "Value is low price"
- Pricing Strategies When the Customer means "Value is everything I want in Service"
- Pricing Strategies When the Customer means "Value is the quality I get for the Price I pay"
- Pricing Strategies When the Customer means "Value is all that I get for all that I give"

### Prescribed Text Books

**Strategy for Tourism (2010), John Tribe. Goodfellow Publishers Limited, Oxford.**

Services Marketing 5<sup>th</sup> Edition, Valarie A Zeithaml, Mary Jo Bitner, Dwanye D Gremler, Ajay Pandit, Tata Mc Graw Hill Edu Pvt Ltd, ISBN 13: 978-0-07-070099-4.

Business Policy (2009), Azar Kazmi, Tata Mc Graw Hill Ltd, New Delhi

## Tourism Geography II

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**Course Code:** TTM525

**Course Name:** Tourism Geography II

**Credits Equivalent:** 4 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** The course is designed to -

- Geography is the basic edifice of tourism.
- The knowledge of geography shall give an extra edge to the students in designing the itineraries for the travellers,
- Suggesting them various destinations to the clients for their travel etc.

### Attendance Requirement:

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

### Evaluation Criteria:

1. **Mid Term Examination: 25%**
2. **End Term Examination: 50%**
3. **Continuous Internal Assessment : 25%**
  - Presentations: 10 %
  - Class test: 10 %
  - Assignments: 5%



**Prescribed Text Books:**

1. Boniface, B.G. and Chris Cooper, *The Geography of travel and Tourism* Oxford: Butterworth Heinemann.
2. Hall C.M. and Stephen, J. Page, *The Geography of tourism and recreation. Environment, place & space*, London: Routledge.
3. Pearce Douglas, *Tourism Today: A Geographical Analysis*; New York: Longman.
4. Singh R.L., *India- A Regional Geography*, Varanasi: National Geographical Society of India
5. Seth P.N., *Successful Tourism Management*, Sterling Publisher: New Delhi

## Economics of Tourism

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**Course Code:** TTM 533

**Course Name:** Economics of Tourism

**Credits Equivalent:** 2 Credits (One credit is equivalent to 10 hours of lectures / organised classroom activity / contact hours; 5 hours of laboratory work / practical / field work / Tutorial / teacher-led activity and 15 hours of other workload such as independent individual/ group work; obligatory/ optional work placement; literature survey/ library work; data collection/ field work; writing of papers/ projects/dissertation/thesis; seminars, etc.)

**Course Objectives:** It is a well known fact that tourism operates within a complex and interwoven social, ecological and economic system. Understanding the economics of tourism will help the tourism students in gaining the ideas to run the business successfully amidst slowdown and recession. It will help the students in gaining adequate expertise about the present situation and future economic problems. Course is designed exclusively to inculcate flexibility in approaches to run the tourism business in cost effective manner even when the economic situations are not conducive to create profits

**Attendance Requirement:**

Students are expected to attend all lectures in order to be able to fully benefit from the course. A minimum of 75% attendance is a must failing which a student may not be permitted to appear in examination.

**Evaluation Criteria:**

1. **Mid Term Examination: 25%**
2. **End Term Examination: 50%**
3. **Continuous Internal Assessment : 25%**
  - Presentations: 10 %
  - Class test: 10 %
  - Assignments: 5%

## Course Contents

### UNIT 1: Economic Systems

- Allocation of Resources
- Economic Goals
- Economics Systems
- Circular Flow Model

### UNIT – II: Measuring the Economy

- Unemployment
- Inflation
- GDP
- Business Cycles
- Competitive Environment

### UNIT III: International Trade

- Foreign Exchange Rate
- Foreign Exchange Market
- BOP
- Barriers to Trade
- Free Trade Vs Protectionism

### UNIT IV: Understandings the Micro Foundations of Tourism Demand

- Demand for Tourism Relative to Other Goods and Services
- Tourists Destination as Complements
- Tourist Destination as Substitutes
- Effect of a Rise in Income on Tourism Consumptions
- Effect of a Fall in Income on Tourism Consumptions
- Effect of fall in Price and Rise in Income on Tourism Consumption
- Tourism Demand over Time
- Social Context of Tourism Decision Making

### UNIT V: Impact of Economic Slowdown on Indian Tourism

- Understanding Economic Slowdown
- Economic slowdown and fall in Demand of Tourism Product
- Tourism Product and Service Condition during Economic Slowdown
- Steps to overcome slackness in Tourism Business during Economic Slowdown

### UNIT VI: Financial Distress and Restructuring

- Definition and Measuring of Financial Distress
- Characteristics of Financial Distress



- Cause of Corporate Financial Distress
- Impact of Financial Distress
- Financial Distress Restructuring
- Countering Financial Distress
- Government Support to Overcome Distress
- Other ways to Overcome Financial Distress

**Prescribed Text Books:**

1. Introductory Economics Fourth Edition, Arleen J. Hoag and John H. Hoag, Cambridge University Press India Pvt. Ltd. New Delhi, ISBN – 13: 978-81-7596-717-5
2. Strategic Financial Management, 2011, Rajini Sofat and Preeti Hiro, PHI Learning Private Limited, New Delhi 110 011, ISBN: 978-81-203-4341-2
3. Investment Management, 2008, Yogesh Maheshwari, PHI Learning Private Limited, New Delhi 110 011, ISBN: 978-81-203-34256-7
4. The Economics of Tourism (1997), M. Thea Sinclair and Mike Stabler, Routledge, London, ISBN: 0-415-08523-3
5. Developing Tourism amidst Economic Slowdown and Terror Attacks, S.Sundararaman, JOHAR, Vol. No. 5, No. 2, July 2010. ISSN No. 0973 - 4538