

RADHA GOVIND UNIVERSITY
RAMGARH, JHARKHAND
DEPARTMENT OF COMMERCE



FYUGP

MULTIDISCIPLINARY COURSES
(MDC) For Semester -I,II & III

FOR UNDER GRADUATE COURSES RADHA GOVIND UNIVERSITY

Implemented from 1st Semester of Session 2023-27 Onwards

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Students are Instructed to

Refer Syllabus of Allied/ Opted Subjects from R.G.U. Website

HIGHLIGHTS OF REGULATIONS OF FYUGP**CREDIT OF COURSES**

The term 'credit' refers to the weightage given to a course, usually in terms of the number of instructional hours per week assigned to it. The workload relating to a course is measured in terms of credit hours. It determines the number of hours of instruction required per week over the duration of a semester (minimum 15 weeks).

- a) One hour of teaching/ lecture or two hours of laboratory /practical work will be assigned per class/interaction.

One credit for Theory = 15 Hours of Teaching i.e., 15 Credit Hours

One credit for Practicum = 30 Hours of Practical work i.e., 30 Credit Hours

- b) For credit determination, instruction is divided into three major components:

Hours (L) – Classroom Hours of one-hour duration.

Tutorials (T) – Special, elaborate instructions on specific topics of one-hour duration

Practical (P) – Laboratory or field exercises in which the student has to do experiments or other practical work of two-hour duration.

MULTIDISCIPLINARY COURSES

1. The introductory Multidisciplinary course will be of 9 credits to be covered during the first three semesters, in which 03 credits will be for each course aligned with broad disciplines mentioned above.
2. Students are not allowed to choose or repeat courses already undergone at the higher secondary level (12th class) in the proposed major and minor stream under this category.
3. One subject will be taken by the students in First, Second & Third Semesters respectively from the 'Bunch of Subjects' offered in each semester.

Abbreviations:

AEC	Ability Enhancement Courses
SEC	Skill Enhancement Courses
IAP	Internship/Apprenticeship/ Project
MDC	Multidisciplinary Courses
MJ	Major Disciplinary/Interdisciplinary Courses
DMJ	Double Major Disciplinary/Interdisciplinary Courses
MN	Minor Disciplinary/Interdisciplinary Courses
AMJ	Advanced Major Disciplinary/Interdisciplinary Courses
RC	Research Courses

Regulation related with any concern not mentioned above shall be guided by the Regulations of the University for FYUGP.

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COURSE STRUCTURE FOR FYUGP 'HONOURS/ RESEARCH'

Table 1: Credit Framework for Four Year Undergraduate Programme (FYUGP) under State Universities of Jharkhand [Total Credits = 160]

Level of Courses	Semester	MJ; Discipline Specific Courses – Core or Major (80)	MN; Minor from discipline (16)	MN; Minor from vocational (16)	MDC; Multidisciplinary Courses [Life sciences, Physical Sciences, Mathematical and Computer Sciences, Data Analysis, Social Sciences, Humanities, etc.] (9)	AEC; Ability Enhancement Courses (Modern Indian Language and English) (8)	SEC; Skill Enhancement Courses (9)	VAC; Value Added Courses (6)	IAP; Internship/ Dissertation (4)	RC; Research Courses (12)	AMJ; Advanced Courses in lieu of Research (12)	Credits	Double Major (DMJ)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
100-199: Foundation or Introductory courses	I	4	4		3	2	3	4				20	4+4
	II	4+4		4	3	2	3					20	4+4
Exit Point: Undergraduate Certificate provided with Summer Internship/ Project (4 credits)													
200-299: Intermediate-level courses	III	4+4	4		3	2	3					20	4+4
	IV	4+4+4		4		2		2				20	4+4
Exit Point: Undergraduate Diploma provided with Summer Internship in 1 st or 2 nd year/ Project (4 credits)													
300-399: Higher-level courses	V	4+4+4	4						4			20	4+4
	VI	4+4+4+4		4								20	4+4
Exit Point: Bachelor's Degree													
400-499: Advanced courses	VII	4+4+4+4	4									20	4+4
	VIII	4		4						12	4+4+4	20	4+4
Exit Point: Bachelor's Degree with Hons. /Hons. with Research												160	224

Note: Honours students not undertaking research will do 3 courses for 12 credits in lieu of a Research project / Dissertation.

Implemented from 1st Semester of Academic Session 2023-27 onwards

COURSES OF STUDY FOR FOUR YEAR UNDERGRADUATE PROGRAMME **2022 onwards****Table 2: Semester wise Course Code and Credit Points for Single Major:**

Semester	Common, Introductory, Major, Minor, Vocational & Internship Courses		Credits
	Code	Papers	
I	AEC-1	Language and Communication Skills (MIL 1 - Hindi/ English)	2
	VAC-1	Value Added Course-1	4
	SEC-1	Skill Enhancement Course-1	3
	MDC-1	Multi-disciplinary Course-1	3
	MN-1A	Minor from Discipline-1	4
	MJ-1	Major paper 1 (Disciplinary/Interdisciplinary Major)	4
II	AEC-2	Language and Communication Skills (MIL 2 - English/ Hindi)	2
	SEC-2	Skill Enhancement Course-2	3
	MDC-2	Multi-disciplinary Course-2	3
	MN-2A	Minor from Vocational Studies/Discipline-2	4
	MJ-2	Major paper 2 (Disciplinary/Interdisciplinary Major)	4
	MJ-3	Major paper 3 (Disciplinary/Interdisciplinary Major)	4
III	AEC-3	Language and Communication Skills (Language Elective 1 - Modern Indian language including TRL)	2
	SEC-3	Skill Enhancement Course-3	3
	MDC-3	Multi-disciplinary Course-3	3
	MN-1B	Minor from Discipline-1	4
	MJ-4	Major paper 4 (Disciplinary/Interdisciplinary Major)	4
	MJ-5	Major paper 5 (Disciplinary/Interdisciplinary Major)	4
IV	AEC-3	Language and Communication Skills (Language Elective - Modern Indian language including TRL)	2
	VAC-2	Value Added Course-2	2

	MN-2B	Minor from Vocational Studies/Discipline-2	4
	MJ-6	Major paper 6 (Disciplinary/Interdisciplinary Major)	4
	MJ-7	Major paper 7 (Disciplinary/Interdisciplinary Major)	4
	MJ-8	Major paper 8 (Disciplinary/Interdisciplinary Major)	4
V	MN-1C	Minor from Discipline-1	4
	MJ-9	Major paper 9 (Disciplinary/Interdisciplinary Major)	4
	MJ-10	Major paper 10 (Disciplinary/Interdisciplinary Major)	4
	MJ-11	Major paper 11 (Disciplinary/Interdisciplinary Major)	4
	IAP	Internship/Apprenticeship/Field Work/Dissertation/Project	4
VI	MN-2C	Minor from Vocational Studies/Discipline-2	4
	MJ-12	Major paper 12 (Disciplinary/Interdisciplinary Major)	4
	MJ-13	Major paper 13 (Disciplinary/Interdisciplinary Major)	4
	MJ-14	Major paper 14 (Disciplinary/Interdisciplinary Major)	4
	MJ-15	Major paper 15 (Disciplinary/Interdisciplinary Major)	4
VII	MN-1D	Minor from Discipline-1	4
	MJ-16	Major paper 16 (Disciplinary/Interdisciplinary Major)	4
	MJ-17	Major paper 17 (Disciplinary/Interdisciplinary Major)	4
	MJ-18	Major paper 18 (Disciplinary/Interdisciplinary Major)	4
	MJ-19	Major paper 19 (Disciplinary/Interdisciplinary Major)	4
VIII	MN-2D	Minor from Vocational Studies/Discipline-2	4
	MJ-20	Major paper 20 (Disciplinary/Interdisciplinary Major)	4
	RC/ AMJ-1 AMJ-2 AMJ-3	Research Internship/Field Work/Dissertation OR Advanced Major paper-1 (Disciplinary/Interdisciplinary Major) Advanced Major paper-2 (Disciplinary/Interdisciplinary Major) Advanced Major paper-3 (Disciplinary/Interdisciplinary Major)	12/ 4 4 4
		Total Credit	160

SEMESTER - I

MDC 1A: FOUNDATION OF COGNITIVE SCIENCE

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. This course provides an introduction to the study of intelligence, mind and brain from an interdisciplinary perspective.
2. It encompasses the contemporary views of how the mind works, the nature of reason, and how thought processes are reflected in the language we use.
3. Central to the course is the modern computational theory of mind and it specifies the underlying mechanisms through which the brain processes language, thinks thoughts, and develops consciousness.
4. Biopsychology is focused on the structure and function of the nervous system.
5. This course will provide the foundation for understanding the biological basis of behaviour.
6. It will cover the perspectives, questions, and techniques of neuroscience, brain cell structure and function, neural communication, neurotransmitters, neurological disorders and treatment, brain development, and neural systems responsible for motivation, learning, emotion, stress, sleep, sensation, perception, and consciousness.

Course Content:**Part-A COGNITIVE PSYCHOLOGY****UNIT-I Introduction to Cognitive Psychology**

1. Nature, History, and Methods in Cognitive Psychology

UNIT-II Attention and consciousness

1. Types: Selective Attention, Divided Attention and Sustained Attention
2. Consciousness: Nature, Types and Functions.

UNIT-III Memory Processes

1. Encoding, Storage and retrieval.
2. Metaphors of Memory: Sensory, Short-term and Long-term.

UNIT-IV Reasoning and Decision Making

1. Types of Reasoning: Inductive and Deductive.
2. Approaches to Reasoning: Componential, Rules/Heuristics and Mental Models.

Part – B: BIOLOGICAL BASIS OF BEHAVIOUR**UNIT-V: The Nervous System**

1. Concept of biopsychology, Neurons, Synapses, Neurotransmitters.
2. The nervous system: Basic Subdivisions-Peripheral and Central,
3. Hemisphere function: Brain; Left handedness; Emotion and the right hemispheres.
4. Psychosis and Psychoneurosis,
5. Alzheimer disease.

UNIT-VI Sleep and Arousal

1. Concept of arousal; Physiological measures of arousal
2. Function of sleep.

UNIT-VII Emotion and Motivation

1. Anxiety; stress and arousal
2. Physiology of Hunger and Thirst.
3. Homeostasis; Obesity and Anorexia.

Reference Books

1. Galotti, K. M. (2008). Cognitive psychology: In and out of the laboratory (2nd Ed.).
 2. Bangalore: Wadsworth, Cengage Learning.
 3. Goldstein, E.B. (2011/2014). Cognitive Psychology: Connecting Mind, Research, and Everyday Experience. Belmont, CA: Wadsworth Cengage.
 4. Hunt, R. R., & Ellis, H. C. (2004). Fundamentals of cognitive psychology (7th Ed.). New Delhi: Tata McGraw - Hill.
 5. Riegler, B. R., & Riegler, G. R. (2008). Cognitive psychology: Applying the science of the mind (2nd Ed.). New Delhi: Dorling Kindersley.
 6. Singh, A. K. () Cognitive Psychology
 7. Breedlove, S. M., Rosenzweig, M. R., & Watson, N. V. (2007) Biological Psychology: An Introduction to behavioral, cognitive, and clinical neuroscience, 5th Edition. Sinauer Associates, Inc., Sunderland, Massachusetts.
 8. Carlson, N. R. (2012). Foundation of physiological psychology. (Sixth Edition). Delhi: Pearson Education.
 9. Green, S. (1995). Principles of biopsychology. UK: Lawrence Erlbaum Associates Ltd.
 10. Singh, A. K. () General Psychology
 11. Pinel, J. P. J. (2011). Biopsychology, 8th Edition. Pearson Education, New Delhi.
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OR**MDC 1B: PERFORMANCE MANAGEMENT AND COUNSELLING**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

1. The main objective of performance counselling is to help the employee to overcome his weaknesses and to reinforce his strengths.
2. It is a developmental process where the supervisor and the subordinate discuss the past performance with a view to help the subordinate to improve and become more effective in future.

Course Learning Outcomes:

1. The student will learn methods of performance counselling to help the employee to overcome weaknesses and to reinforce strengths.
2. They will know the need of Appraisal and Counselling in uplifting the overall ambiance of an organisation.

Course Content:**UNIT – I**

Performance Management as a Business Strategy: Theoretical Framework; Designing Performance Management Systems: Setting Goals, Measuring Performance, Rewarding Performance, Process Links, Feedback and Amendments.

UNIT – II

Performance Appraisal: Concept, PA Process, Methods of PA, MBO, 360 Degree Appraisal; Developing an Appraisal: Choosing the Appraiser; Role of HR Manager; Reliability and Validity of Appraisal.

UNIT – III

Feedback, Potential Appraisal, Career Planning, Identification of Training Needs, Benchmarking

UNIT- IV

Counselling: Meaning; Need for Counselling in Work Place; Goals of Counselling: Immediate, Long Term; Types of Counselling; Counselling Process: Problem Identification; Strategies and Skills; Counsellor – Counselee Relationship.

UNIT – V

Content of Counselling: Preparation, Intake Procedure, Rapport, Counselling Environment; Specifics of Counselling: Observation, Listening, Nonverbal Behaviour, Communication, Questioning, Science, Transference, Follow-up; Post-Appraisal Counselling; Counselling for Separation.

Reference Books

1. Rao T.V. and Pareek, Uday (ed): Redesigning Performance Appraisal Systems, Tata McGraw-Hill Pub. Co., New Delhi.
2. Neale, Francis: Hand Book of Performance Management, Jaico Pub. House, New Delhi.
3. Benson, Gary: Stepping up performance, Jaico, Publishing House, New Delhi.
4. Walters, Mike: The Performance Management Hand Book, Jaico Pub., House, New Delhi.
5. Murphy, Kerin, and Cleveland, Jeanette N: Understanding Performance Appraisal, Sage, London.
6. Mabey, Christofer and Salman, Graeme: Strategic Human Resource Management, Beacon Book, New Delhi.
7. Dave, Indu: Th Basic Essentials of Counselling, Sterling Pub. Pvt. Ltd., New Delhi.
8. Barclay, James, R: Foundations of Counselling Strategies, John Wiley & sons, Inc., New York.
9. Blocher, Donald. H, Developmental Counselling, Ronald Press, New York.
10. Hahn, Milton E, and Maclean, Malcom, S: Counselling Psychology, McGraw- Hill Book Co., New York.
11. Patterson, CH, Theories of Counselling & Psychotherapy Harper & Row Pub., New York.
12. Mehta, Perin H, Odgers, Hohn & Wadia Khorshed. A: A Handbook of Counselling, NCERT, New Delhi.
13. Dinesh K. Srivastava (2005) Strategies for Performance Management Excel Books New Delhi
14. R. Krishna Veni (2008) Human Resource Development Excel Books New Delhi
15. Tapomoy Feb (2008) Performance appraisal and Management Excel Books New Delhi

OR
MDC 1C: INTRODUCTION TO GENDER EQUALITY

(Credits: Theory-03)
Theory: 45 Lectures

Marks: 75 (ESE: 3 Hrs) = 75

Pass Marks: Th (ESE) = 30

Course Learning Outcomes:

The Course on Gender Equity aims to provide students:

1. An understanding of the basic concepts related to Gender, the norms and the processes that shape Gender perceptions and the importance of Gender equity and equality.
2. A comprehension of the various indicators of Gender inequality, and the institutions and processes that sustain it.
1. An awareness of the various Conventions, constitutional and legal provisions for Gender equity.
3. An understanding of the concept, importance, measurement and indicators of Gender disaggregated data and Gender audit.

Course Learning Outcomes:

The course on Gender equity would enable the students to:

1. Have an understanding of the various concepts related to Gender, social norms and processes that foster gender inequality, and the importance of Gender equity and equality.
1. Understand the variables of Gender inequality, institutions and processes that foster discrimination, prejudiced portrayal and violence against women
2. Be equipped with the knowledge of various international conventions, Constitutional and legal provisions available for bringing about greater Gender equity and equality
4. Be aware of the concept, measurement and indicators of gender equity and gender equality and appreciate the value and importance of gender data and gender audit

Course Content:**UNIT I: Understanding Gender Equity**

Basic concepts - Sex, Gender, Sexuality, Patriarchy, Gender Stereotypes, Gender Division of Labour, Gender Bias, Socialisation, Internalisation of Gender values, Devaluation and Marginalisation, Gender Equity –Meaning and Definition; Gender Equality –Meaning and Definition; Gender Equity and Gender Equality - Relationship; The importance of Gender Equity and Gender Equality in society.

UNIT II: Discrimination and Violence 9 hours

Indicators of inequality - Sex Ratio, Education, Health and nutrition, Work participation, Institutions of Gender Inequality- Family, Economy, Religion, Education and Political institutions, Discrimination and Violence - Female Foeticide, Infanticide, Child Marriage, Domestic Violence, Unequal access to property, Unequal access to political participation, Trafficking and commodification of Women's body, Representation of women in Media.

UNIT III: Gender Equity and Legal provisions

International Conventions - CEDAW, Millennium Development Goals (MDG's), Sustainable Development Goals (SDG's),

Constitutional Rights of Women in India (Relevant articles of Fundamental Rights and Directive Principles), Protective Legislation for Women in India – The Dowry Prohibition Act, 1961; Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013; Protection of Women from Domestic Violence Prevention Act, 2005

National Commission for Women - –Composition, powers and functions; Jharkhand State Commission for Women – Composition, powers and functions

UNIT IV: Towards Measuring Gender Equity and Equality 3 hours

Gender Empowerment measure (GEM) – Meaning and Indicators, Global Gender Gap Index – Meaning and indicators,

Gender Disaggregated Data - Meaning and importance, Gender Audit -Meaning and importance

References book:

1. Human Development Reports, 2018, UNDP
 3. Kamal Shankar Srivastava, Women in Indian Constitution and Human Rights, Ranchi, A.P.H. Pub., 2007
 4. Mohini Chatterjee, Feminism and Gender Equality, Jaipur, Aavishkar Pub., 2005
 5. Flavia Agnes, Sudhir Chandra and Monmayee Basu, Women and Law in India, New Delhi: OUP, 2016.
 6. Shailly Sahai. Social Legislation and Status of Hindu Women, Jaipur: Rawat, 1986.
 7. Alka Singh, Women in Muslim Personal Law, Jaipur: Rawat 1991.
 8. Devaki Jain and Pam Rajput, Narratives from Women's Studies Family –Recreating Knowledge, New Delhi: Sage, 2003
 9. H.M. Hemalatha, Mahila Adhyayana 1 mattu 2, Mysore: DVK Murthy, 2004
 10. R. Indira, Mahila Mattu Kautimbika Himse, Mysore: Srimati Yashoda Rana Trust, 2000
 11. Kishori Nayak K., ed., Gender Equity, Mangalagangothri, Centre for Women's Studies, Mangalore University, 2007
 12. Neera Desai and Maithreyi Krishna Raj, Women and Society in India, Delhi: Ajantha, 1987.
 13. Alfred D'Souza, ed., Women in Contemporary India, Delhi: Ajantha, 1997.
 14. Maria Mies, Indian Women and Patriarchy, Delhi: Concept, 1980.
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OR**MDC 1D: E-COMMERCE**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

1. To know the students "Ecommerce" or "electronic commerce" as the trading of goods and services on the internet.
2. To know varieties of Business Transactions viz: Business to Business (B2B), Business to Customer (B2C), Customer to Customer (C2C) & Customer to Business (C2B).
3. To understand the present status and trends of E-Commerce; and
4. To reveal the key variables influencing the increased usage of E-Commerce

Course Learning Outcomes:

On successful completion of this course the student should be able to:

1. Know the technological aspects of e-commerce
2. Know the ways of electronic data interchange.
3. Understand the security aspects in e-commerce
4. Understanding Ethical, Social and Political issues in E-Commerce

Course Content:**UNIT- I: E-commerce and its Technological Aspects**

Overview of developments in Information Technology and Defining E-Commerce: The scope of E commerce, Electronic Market, Electronic Data Interchange, Internet Commerce, Benefits and limitations of E-Commerce, Produce a generic framework for E-Commerce, Architectural framework of Electronic Commerce, Web based E Commerce Architecture.

UNIT- II: Consumer Oriented E Commerce

E-Retailing: Traditional retailing and e retailing, Benefits of e retailing, Key success factors, Models of e retailing, Features of e retailing. E services: Categories of e-services, Web-enabled services, matchmaking services, Information-selling on the web, e entertainment, Auctions and other specialized services. Business to Business Electronic Commerce

UNIT- III: Electronic Data Interchange

Benefits of EDI, EDI technology, EDI standards, EDI communications, EDI Implementation, EDI Agreements, EDI Security. Electronic Payment Systems, Need of Electronic Payment System: Study and examine the use of Electronic Payment system and the protocols used, Study Electronic Fund Transfer and secure electronic transaction protocol for credit card payment. Digital economy: Identify the methods of payments on the net – Electronic Cash, Cheques and Credit cards on the Internet.

UNIT- IV: Security in E Commerce

Threats in Computer Systems: Virus, Cyber Crime Network Security: Encryption, Protecting Web server with a Firewall, Firewall and the Security Policy, Network Firewalls and Application Firewalls, Proxy Server.

UNIT- V: Issues in E Commerce

Understanding Ethical, Social and Political issues in E-Commerce: A model for Organizing the issues, Basic Ethical Concepts, Analyzing Ethical Dilemmas, Candidate Ethical principles Privacy and Information Rights: Information collected at E-Commerce Websites, The Concept of Privacy, Legal protections Intellectual Property Rights: Types of Intellectual Property protection, Governance.

Reference Books

1. Elias. M. Awad, " Electronic Commerce", Prentice-Hall of India Pvt Ltd.
2. Ravi Kalakota, Andrew B. Whinston, "Electronic Commerce-A Manager's guide", Addison-Wesley.
3. Efraim Turban, Jae Lee, David King, H. Michael Chung, "Electronic Commerce—A Managerial Perspective", Addison-Wesley.
4. Elias M Award, "Electronic Commerce from Vision to Fulfilment", 3rd Edition, PHI,
5. Judy Strauss, Adel El-Ansary, Raymond Frost, "E-Marketing", 3RDEdition, Pearson Education.

OR**MDC 1E: LIFE SCIENCE – CELLULAR ORGANISATION
& FUNDAMENTAL PROCESSES**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. To know about the cellular basis of life and cell theory.
2. To be aware of the different organelles of a Eukaryotic cell, their ultra-structure and function, types of cell division and cell cycle.
3. To be aware of mechanism of ions transport in excitable tissue.
4. To be aware of mechanism of Active and passive transport of cellular molecules.
5. To be aware of molecular organisation of genetic material, types of DNA and its packing in chromosomes.
6. This course provides an introduction to the study of intelligence, mind and brain from an interdisciplinary perspective.
7. To be aware of the structure and function of different biochemical components and molecular composition of life.
8. To be aware of genetic basis of life. Its molecular structure and function.
9. To be aware of enzymatic and energy dynamics of life.

Course Content:**UNIT-I: Molecules of Life:**

Structure of atoms, molecules and chemical bonds.

Composition, structure and function of biomolecules (carbohydrates, lipids, proteins, nucleic acids and vitamins).

Stabilizing interactions (Van der Waals, electrostatic, hydrogen bonding, hydrophobic interaction, etc.).

Principles of biophysical chemistry (pH, buffer, reaction kinetics, thermodynamics, colligative properties).

Bioenergetics, glycolysis, oxidative phosphorylation, coupled reaction, group transfer, biological energy transducers.

Principles of catalysis, enzymes and enzyme kinetics, enzyme regulation, mechanism of enzyme catalysis, isozymes. Conformation of proteins (Ramachandran plot, secondary, tertiary and quaternary structure; domains; motif and folds).

Conformation of nucleic acids (A-, B-, Z-, DNA, t-RNA, micro-RNA). Stability of protein and nucleic acid structures. Metabolism of carbohydrates, lipids, amino acids, nucleotides and vitamins.

UNIT-II: Membrane structure and function: Structure of model membrane, lipid bilayer and membrane protein diffusion, osmosis, ion channels, active transport, ion pumps, mechanism of sorting and regulation of intracellular transport, electrical properties of membranes.

UNIT-III: Structural organization and function of intracellular organelles: Cell wall, nucleus, mitochondria, Golgi bodies, lysosomes, endoplasmic reticulum, peroxisomes, plastids, vacuoles, chloroplast, structure & function of cytoskeleton and its role in motility.

UNIT-IV: Organization of genes and chromosomes: Operon, interrupted genes, gene families, structure of chromatin and chromosomes, unique and repetitive DNA, heterochromatin, euchromatin, transposons.

UNIT-V: Cell division and cell cycle: Mitosis and meiosis, their regulation, steps in cell cycle, and control of cell cycle.

Microbial Physiology: Growth, yield and characteristics, strategies of cell division, stress response.

Reference Books

1. The Cell by Cooper
2. Cell biology by Karp
3. Cell biology by De Robertis
4. Harper's Biochemistry.
5. Cambridge University low priced book on biology.
6. Cytogenetics by P.K Gupta

OR**MDC 1F: MATHEMATICAL & COMPUTATIONAL THINKING AND ANALYSIS**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Objectives & Outcomes:**

This course will enable the students to:

1. To focus primarily on the mathematical and statistical tools used to support the study of natural and social sciences.
2. To focus on the methodology used to analyse quantitative information to make decisions, judgments, and predictions
3. To focus on the methodology of quantitative analysis.
4. To ensure that students achieve a level of proficiency in using and analysing quantitative information.
5. To enable students for defining a problem by means of numerical or geometrical
6. representations of real-world phenomena, determining how to solve it, deducing inferences, formulating alternatives, and predicting cause and effect relationships.
7. To Explain the application of computational thinking across multiple domains

Course Content:**Unit I - Statistics & Probability**

Measure of Dispersion: Range, Mean Deviation, Variance, Standard Deviation

Random experiment, sample space, Events: occurrence of events, 'not', 'and' & 'or' events, exhaustive event, mutually exclusive events, probability of an event, conditional probability

LPP: objective functions, constraints, mathematical formulation of LPP, Graphical method of solution, feasible and infeasible regions/solutions, optimal feasible solution

Unit II – Introduction to Computational Thinking

What is computational thinking? Problem definition, Problem Solving, Problem decomposition, Abstraction, Greedy Method, Divide and Conquer, pseudocode, understanding algorithms, Concept and designing of flowchart

Unit III – Computational Thinking and Analysis

Data organizing and Data filtering by quantitative dataset using Excel files. Data analysis using bar chart, column chart, line chart, pie chart, scatter chart, surface chart, statistical chart and radar chart. Computing sum, average, mid-point, relative frequency, variance and standard deviation.

Reference Books:

1. Lorenzo Peccati, Mauro D'Amico & Margherita Cigola, Maths for Social Sciences, Springer Nature Switzerland, 2018
2. Kumar Mrityunjay, Indra Nath Sahu, "Mathematical and Computational Thinking and Analysis" U.P.(Agra), Shiksha Sagar Publisher and Distributors.
3. N.M. Kapoor, Fundamentals of Mathematical Statistics, Pitambar Publication, 2005.
4. David Riley and Kenny Hunt, Computational thinking for modern solver, Chapman & Hall/CRC, 2014
5. R.G. Dromey, "How to solve it by Computer", PHI, 2008
6. Nabendu Paul and Sahadeb Sarkar, Statistics, Concepts and Applications, PHI, 2013.

SEMESTER - II

MDC 2A: CONCEPTUALIZING WOMEN'S STUDIES

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. To introduce students to the discipline of Women's Studies and its specific purposes and perspectives.
2. To enable the students to understand the basic concepts of Women's Studies
3. To make students aware of the women's exclusion from knowledge and need for women's studies as an academic discipline.
4. It deliberates on the prevailing strategies of the growth of women's studies in India.
5. To trace the evolution of gender studies from women's studies

Course Content:**UNIT I: Fundamental Concept**

1. Sex and Gender, Social Construction of Gender
2. Femininity and Masculinity
3. Understanding Patriarchy
4. Equality and Difference Debate

UNIT II: Women's Studies

1. Nature and Scope of Women's Studies in India – Feminist perspective
2. Emergence of Women's Studies as an Academic Discipline
3. Experiences and Challenges Faced by Women's Studies Centers
4. Growth and Changing Perspectives of Women's Studies and Research
5. Emergence of Women's Studies as an Academic Discipline
6. Women's Studies in Higher Education (with reference to UGC Guidelines)
7. Experiences and Challenges Faced by Women's Studies Centers

UNIT III: Growth of Women's Studies in India

1. Socio-Political Impact of Women's Studies and Women's Movement
2. Pioneers of Women's Studies in India
3. Contribution of Women's Studies Centers Over Last Three Decades

UNIT IV: Women's Studies in Universities

1. Research in Women's Studies; Theories and Methodologies
2. Threats and Challenges to Women's Studies
3. Curriculum and Teaching

UNIT V: Women's Studies and Gender Studies

1. From Women's Studies to Gender Studies: A Paradigm Shift
2. Women's Studies v/s Gender Studies
3. Changing Studies on Men and Masculinities

Reference Books

1. Mary E John, (2008). *"Women's Studies in India: A Reader"*. Penguin Books, India
2. Maithreyi Krishna Raj. (1986). *"Women Studies in India: Some Perspectives"*. Popular Prakasham, Bombay.
3. Amy S. Wharton. (2005). *"The Sociology of Gender: An Introduction to Theory and Research"*. (Key Themes in Sociology) Blackwell Publishing, UK, Indian Reprint, Kilaso Books, New Delhi.
4. Jasbir Jain (Ed). (2005). *"Women in Patriarchy: Cross Cultural"*. Rawat Publications, Jaipur.
5. Lerner, Gerda. (1986). *"The Creation of Patriarchy"*. Oxford University Press, New Delhi.
6. Sharmila Rege, (Ed.). (2003). *"Sociology of Gender: The Challenge of Feminist Sociological Knowledge"*. Sage, New Delhi.
7. Jane Freedman, (2002). *"Feminism"*. Open University Press, Viva Books Private Limited, Delhi

8. Devaki Jain and Pam Rajput (Ed). (2003). *"Narratives from the Women's Studies Family: Recreating Knowledge"*, Sage, and New Delhi.
 9. Mala Khullar, (Ed). (2005). *"Writing the Women's Movement: A Reader"*. Zubaan, Kali for Women, New Delhi.
 10. Amy S. Wharton. (2005) *"The Sociology of Gender: An Introduction to Theory and Research"*. (Key Themes in Sociology) Blackwell Publishing, UK, Indian Reprint, Kilaso Books, New Delhi.
 11. Devaki Jain and Pam Rajput (Ed). (2003) *"Narratives from the Women's Studies Family: Recreating Knowledge"* Sage, and New Delhi.
 12. Jasbir Jain (Ed). (2005) *"Women in Patriarchy: Cross Cultural"*. Rawat Publications, Jaipur.
 13. Kumkum Sangari and Sudesh Vaid *"Recasting Women: Eassy in Colonial History"*.
 14. Lerner, Gerda. (1986) *"The Creation of Patriarchy"* Oxford University Press, New Delhi.
 15. Maithreyi Krishna Raj. (1986) *"Women Studies in India: Some Perspectives"* Popular Prakasham, Bombay.
 16. Mala Khullar, (Ed). (2005). *"Writing the Women's Movement: A Reader"*. Zubaan, Kali for Women, New Delhi.
 17. Mies, Maria. (1980) *"Indian Women and Patriarchy"*. Concept Publishing Company, New Delhi.
 18. Sharmila Rege, (Ed.). (2003) *"Sociology of Gender: The Challenge of Feminist Sociological Knowledge"*. Sage, New Delhi.
 19. Veena Majumdar. (1974) *"Report on the committee on the Status of Women: Towards Equality"*. Journal of Women Studies.
 20. Suryakumari (Ed.) (2006) *"Women's Studies: An Emerging Academic Discipline"* Gyan Publishing House, New Delhi
 21. Vij Madhu, Bhatia Manjeet, Pandey Shelly (2014) *"Women's Studies in India: A Journey of 25 Years"* Rawat Publications, New Delhi
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OR**MDC 2B: INTRODUCTION TO INTELLECTUAL PROPERTY RIGHTS (IPR)**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. To provide comprehensive knowledge to the students regarding the general principles of IPR, Concept and Theories, Criticisms of Intellectual Property Rights, International Regime Relating to IPR.
2. To learn the procedure of obtaining Patents, Copyrights, Trade Marks & Industrial Design.

Course Learning Outcomes:

On successful completion of this course the student should be able to:

1. Distinguish and explain various forms of IPRs.
2. Identify criteria to fit one's own intellectual work in particular form of IPRs.
3. Apply statutory provisions to protect particular form of IPRs.
4. Analyze rights and responsibilities of holder of Patent, Copyright, Trademark, Industrial Design etc.
5. Identify procedure to protect different forms of IPRs national and international level.

Course Content:**UNIT I: Understanding and overview of the IPR regime**

Introduction, types of intellectual property, Industrial property. Need for intellectual property rights. Rationale for protection of IPR. Impact of IPR on development. health, agriculture and genetic resource. The role and liabilities of IPR in India

UNIT II: Concerns in IPR

Patents: Definition, Kinds of inventions, process and product patent, double patent, patent of addition. Legal requirements for patents. Patent application process. Patent law and traditional knowledge.

Trademarks: Rights of trademarks; kind of signs used as trademark types, purpose and function of trademark, Trademark protection, registration, acquisition, protectable matter, selecting and evaluating trademark.

Copyrights: Fundamental of copy right law, originality of material, right of protection, international copy right law.

UNIT III: Cyber Law & Industrial Designs

Cyberlaw: Cyberlaw issues, criminal law, data safety, health privacy, national security.

Industrial Designs: Protection, kind of protection is provided by industrial designs, integrated circuit. Trade secret; Enforcement of IPR

UNIT IV: Technological interventions and legal developments in IPR

Biotechnology: adoption and dissemination, need for protection, Existing protection. New plant varieties: protection, need, law, benefits, case studies of biotechnology, patenting of microorganism.

Reference Books:

1. Fundamentals of IPR for Engineers: K. Bansal & P. Bansal
 2. Intellectual property right, Deborah, W.E.B. Du Bois, Cengage learning.
 3. Intellectual property right - Unleashing the knowledge economy, P.M. Buddha Ganguli, Tata McGraw Hill Publishing Company Ltd.
 4. Electronic resource guide ERC published online by the American Society of Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights, London September 2002 (web resources)
 5. WIPO Intellectual Property Handbook. Policy, Law and Use (web resource)
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OR
MDC 2C: INCOME TAX

(Credits: Theory-03)
Theory: 45 Lectures

Marks: 75 (ESE: 3 Hrs) = 75**Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

1. The main objective of introducing Income Tax is to aware the students to the importance of Income Tax and its contribution in the development of the country.
2. The students will be known with the provisions and penalty consequences of non-adhere to the IT rules.

Course Learning Outcomes:

1. The student will know the provisions of Income Tax in India.
2. They will know the sources of income like salary or capital gain from other sources.
3. They will be aware of Rights & liabilities of IT payee
4. The student will know the difference between 'Income statement', 'Balance sheet', and 'Cash flow statement'.

Course Content:**UNIT-I: Basic Concepts**

1. Income, Agricultural Income, Person, Assesses, Causal Income, Assessment Year, Previous Years, Gross Total Income, Total Income;
2. Tax Evasion, Tax Avoidance, Tax Planning
3. Scope of Total Income; Residence and Tax Liability;
4. Income which does not fall part of total income

UNIT-II: Heads of Income-I

1. Income from Salaries; Income from house property

UNIT-III: Heads of Income-II

1. Profits or gains of business or profession, including provisions relating to specific business;
2. Capital gains and income from other sources

UNIT-IV: Computation of Total Income and Tax Liability

1. Computation of total income and tax liability of an individual, H.U.F., and firm; Aggregation of Income; Set off and carry forward of losses

UNIT-V: Preparation of Return of Income

1. Filling of returns: Manually, On-line filing of Returns of Income and TDS;
2. Provision and procedure of compulsory online filing of return for specified assesses.

Reference Books

1. Singhanar V.K: Students' Guide to Income Tax; Taxmann, Delhi.
 2. Prasadi, Bhagwati: Income Tax Law & Practice: Wiley Publication, New Delhi,
 3. Mehrotra H.C: Income Tax Law & Accounts; Sahitya Bhawan, Agra.
 4. Dinker Pagare Income Tax Law and Practice: Sultan Chand & Sons, New Delhi.
 5. Girish Ahuja and Ravi Gupta: Systematic approach to income tax: Sahitya Bhawan Publications, New Delhi.
 6. Chandra Mahesh and Shukla D.C.: Income Tax Law and Practice; Pragati Publications, New Delhi
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OR
MDC 2D: DEVELOPMENT PSYCHOLOGY

(Credits: Theory-03)
Theory: 45 Lectures

Marks: 75 (ESE: 3 Hrs) = 75**Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. To impart knowledge and understanding of the basic concepts, principles, perspectives and modern trends in Developmental Psychology
2. To foster interest in Developmental Psychology as a field of study and research
3. To make the students aware of the implications and applications of the various concepts, principles and theories of Developmental Psychology in daily life in the Indian context

Course Content:**UNIT I: The Start of Life; Birth and the Newborn Infant**

1. The Future Is Now; Earliest Development
2. The Interaction of Heredity and Environment
3. Prenatal Growth and Change
4. Birth and Birth Complications; Pre-term infants and the Competent newborn

UNIT II: Physical Development in Infancy

1. First Steps; motor development
2. Sensation power of baby
3. Factors influencing of motor development

UNIT III: Cognitive Development in Infancy

1. Piaget's Approach to Cognitive Development
2. Stages of cognitive development
3. The Roots of Language

UNIT IV: Physical, Social and Personality Development in the Preschool Years

1. Physical Development - the Growing Body; the Growing Brain;
2. Social and Personality Development - Forming a Sense of Self; Friends and Family: Preschoolers' Social Lives; Moral Development and Aggression

UNIT V: Cognitive Development in Pre-school years

1. Piaget's Approach
2. Information Processing and Vygotsky's Approach to Cognitive Development
3. The Growth of Language and Learning

UNIT VI: Physical, Social and Personality Development in Middle Childhood

1. Physical Development - the Growing Body; Motor Development and Children with Special Needs
2. Expression of creativity in childhood and fostering creativity in childhood
3. Relationships: Building Friendship in Middle Childhood

UNIT VII: Cognitive Development in Middle Childhood

1. Cognitive Development - Intellectual and Language Development
2. Moral development in childhood
3. Intelligence: Determining Individual Strengths

Reference Books

1. Feldman, R. S. (2009). *Discovering the Life Span*. Pearson Prentice Hall, Indian reprint
2. Berk, L. E. (2006). *Child Development*. (7th Ed). N. Delhi: Pearson Education Dorling Kindersley (India) Pvt Ltd.
3. Berk, L. E. (2004). *Development through the lifespan*. (3rd Ed). New Delhi: Pearson Education Dorling Kindersley (India) pvt ltd.
4. Cook, J. L., & Cook, G. (2009). *Child Development: Principles and Perspectives*. Boston: Pearson Education
5. Crandell, T. L., Crandell, C. H., & Zanden, J. W. V. (2009). *Human Development*. (9th Ed). New York: McGraw Hill co. Inc.

6. Dacey, J. S. & Travers, J. F. (2004). *Human Development across the lifespan*. (5thEd). McGraw Hill co.
 7. Kail, R. V. (2007). *Children and their Development*. (4th Ed). New Jersey: Pearson Education Inc.
 8. McDevitt, T. M., & Omrod, J. E. (2007). *Child Development and Education*. (3rd Ed). New Jersey: Pearson Education Inc.
 9. Papalia, D. E., Olds, S. W., & Feldman, R. (2004). *Human Development*. (9th Ed). McGraw Hill, international Edition
 10. Shaffer, D. R., & Kipp, K. (2007). *Developmental Psychology: Childhood and Adolescence*. (7th Ed). Thomson Learning, Indian reprint 2007
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OR
MDC 2E: TRIBAL STUDIES

(Credits: Theory-03)
Theory: 45 Lectures

Marks: 75 (ESE: 3 Hrs) = 75**Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. This course aims to help students to understand tribal society and its distinct cultural characteristics.
2. It also intends to enhance the knowledge about current scenario of tribal society and its changing culture.
3. This course aims to help students to identify & understand the major issues in tribal development such as socio-political, economic, cultural & infrastructural.

Course Content:**UNIT-I: Tribal Concept, Meaning & Identity**

Meaning, definition and characteristics of tribe.

Concept of tribe from various perspective – British perspective, Indian perspective, tribals own perspective.

Constitutional Meaning of tribe.

UNIT-II: Tribal Organisations

Social Organisations: Tribal family, marriage, kinship, Yuvagruh, Religion and customary practices.

Economic organisations: Concept, forms, functions and changing nature. Political Organisations: Tribal council, customary laws and practices.

UNIT-III: Tribal Culture

Component of tribal culture: Dance, Drama, Folklore, dialect, Instruments. Religion, customs & Rituals

Literature and Art, Life philosophy in cultural practices.

UNIT-IV: Tribal Transformation

Tribe-caste Continuum

Detribalisation, 'Sanskritization' and Religions conversions, 're- tribalisation' Assertion of tribal identity, revitalisation. Cultural invasion and culture of silence Cultural synthesis, Cultural action for tribal freedom, Cultural hegemony

UNIT-V: Socio-Political Issues

Social Issues, Political issues such as political participation, Tribal self-rule Educational issues-accessibility, marginalisation, migration, drop-out.

Health issues-accessibility, malnutrition, mortality & morbidity, reproductive health, anemia and sickle cell anemia.

Superstitions, addiction, isolation.

UNIT- VI: Economic Issues

Land alienation & Agriculture Poverty & indebtedness Unemployment

UNIT-VII: Infrastructural Issues Habitat and settlement Basic civic Amenities

Transportation & communication. Access to Forest.

UNIT-VIII: Cultural Issues

Cultural conflicts

Customary laws, rituals & customs

Public space & Journalism in Tribal areas. Cultural invasion and domination.

Culture of silence.

Reference Books

1. Dynamics of Tribal migration, Sonali Publication New Delhi.
2. Frontiers of Social Anthropology, Amitabha Sankar, Dasgupta Samira -Gyan Books PVT LTD Delhi 1990.
3. Gare G M, Social Change, Among the tribal of western Maharashtra, 1974.
4. Mishra R N, Tribal cultural and Economy - Ritu Publication.
5. Mohanty P K, Encyclopaedia of scheduled Tribes -2006 Gyan PVT LYD.

6. Sharma B.D, People of India Series, New Delhi.
 7. Singh k S, Tribal situation in India, Indian Institute of Advanced Study, Simla,1972.
 8. Vidarthi L P, Tribal culture of India, Concept publishers New Delhi 1976.
 9. Freire Paulo, Pedagogy of the Oppressed;30thAnniversary Edition
 10. Gramsci Antonio; Prison Notebooks, Vol.2, Colombia University Press
 11. Sachindra Narayan, The Dynamics Of Tribal Development Issues and Challenges -2002, Gyan Books PVT LTD Delhi
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OR**MDC 2F: AN INTRODUCTION TO SUSTAINABLE DEVELOPMENTS**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

1. How sustainability considerations can actually be embedded within an
2. individuals and community's day to day activities and decision making processes
3. How existing sustainable development tools and methods can be adjusted/fine-tuned accordingly
4. How to design sustainability performance metric to assess the impact on community's sustainable development
5. How to design feedback systems that can readjust the pathways of processes and procedures to ensure success in implementing sustainable development initiatives.
6. How to empower communities set sustainability targets using appropriate metrics

Course Learning Outcomes:

1. Understand the basic concept of Sustainable Development (SD), the environmental, social and economic dimensions.
2. In depth learning and analysis of factors that support to achieve sustainability and resilience in an individual level and in a community
3. Develop an encompassing understanding of sustainability issues.
4. Understand the embedment of sustainability issues in environmental, societal, and economic systems.
5. Be familiar with potential strategic options for SD (efficiency, sufficiency).
6. Be able to discuss the (dis-)advantages of instruments for SD.
7. Demonstrate knowledge and understanding of the current sustainable development policies followed by selected countries.
8. Demonstrate capability in designing specialized methodology for designing and implementing localized sustainable development measures.
9. Understand the SD challenges for communities, industries, and academic institutions, their responsibility and their potentials for action

Course Content:**UNIT-I: INTRODUCTION TO SUSTAINABLE DEVELOPMENT:**

1. Broad introduction to SD - its importance, need, impact and implications;
2. definition coined; evolution of SD perspectives (MDGs AND SDGs) over the years;
3. recent debates;
4. 1987 Brundtland Commission and outcome;
5. later UN summits (Rio summit, etc.) and outcome.

UNIT-II: ECOSYSTEM AND SUSTAINABILITY

1. Fundamentals of ecology - types of ecosystems & interrelationships, factors influencing sustainability of ecosystems, ecosystem restoration -developmental needs.
2. Introduction to sustainability & its factors, requirements for sustainability:
3. food security and agriculture, renewable resources - water and energy, non-renewable resources, factors and trade-offs,
4. sustainability conflicts,
5. a conceptual framework for linking sustainability and sustainable development

UNIT-III: DIMENSIONS TO SUSTAINABLE DEVELOPMENTS

1. society, environment, culture and economy;
2. current challenges - natural, political, socio-economic imbalance;
3. sustainable development initiatives and policies of various countries: global, regional, national, local;
4. needs of present and future generations - political, economic, environmental.

UNIT-IV: FRAMEWORKS OF SUSTAINABILITY-

1. Analytical frameworks in sustainability studies,

2. Sustainability metrics: criteria and indicators; the significance of quantitative and qualitative assessments of sustainability;
3. Current metrics and limitations; metrics for mapping and measuring sustainable development;
4. Application of the metrics in real scenarios

UNIT- V: CRITICAL PERSPECTIVES ON SUSTAINABLE DEVELOPMENT

1. Resource management and implications on sustainable development - implications for valuation, risk assessment;
2. Integrated decision-making processes: requirements of information, information flow, data analytics, learning from historical data, multi-criteria decisions, multi-level decisions, participatory decisions;
3. Translating impact chains to information flows- impact of governance and policies

UNIT -VI: CASE STUDIES & PROJECTS ON RURAL SUSTAINABLE DEVELOPMENT (INDIAN VILLAGE PERSPECTIVES)

1. Village resources (broad perspectives);
2. Current challenges and thematic areas;
3. Village social hierarchy;
4. Village economy;
5. Needs of present and future generation; conflicts - sustainability and rural culture & tradition;
6. Road to achieving sustainable development goals - bridging conflicts and way forward

Reference Books

1. Franco, I.B. and Tracey, J. (2019), "Community capacity-building for sustainable development: Effectively striving towards achieving local community sustainability targets", International Journal of Sustainability in Higher Education, Vol. 20 No. 4, pp. 691-725
 2. Our Common Journey: A Transition Toward Sustainability. National Academy Press, Washington D.C. Soubbotina, T. P. 2004.
 3. Elliott, Jennifer. 2012. An Introduction to Sustainable Development. 4th Ed. Routledge, London.
 4. Rogers, Peter P., Kazi F. Jalal, and John A. Boyd. "An introduction to sustainable development." (2012).
 5. Sachs, J. D. 2015. The Age of Sustainable Development. Columbia University Press, New York.
 6. Soubbotina, Tatyana P. 2004. Beyond Economic Growth: An Introduction to Sustainable
 7. Development. WBI learning resources series. Washington DC ; World Bank.
 8. Kerr, Julie. Introduction to energy and climate: Developing a sustainable environment. CRC Press, 2017.
 9. Saito, Osamu. Sharing Ecosystem Services. Springer Singapore, 2020. Nhamo, Godwell, and Vuyo Mjimba. Sustainable Development Goals and institutions of higher education. Springer, 2020
 10. Patel, Bimal N. Ranita Nagar, sustainable development and India, Oxford, 2018
 11. Ossewaarde Martin J., Introduction to sustainable development.
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SEMESTER - III

MDC 3A: COPYRIGHT & PATENT LAW

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. The course is designed to provide comprehensive knowledge to the students regarding Indian position of the Copyright Law, 1957, Historical background and Development of Copyright Law, Infringement.
2. The course is designed to provide comprehensive knowledge to the students regarding Indian position of the Patent Law (1970), Historical development, Procedure for granting a patent, Infringement.

Course Content:**UNIT I**

1. Copyright and Neighbouring Rights, Concept and Principles
2. Historical background and Development of Copyright Law
3. Leading International Instruments, Berne Convention, Universal Copyright Convention,
4. International Copyright under Copyright Act
5. WIPO Phonograms and Performances treaty

UNIT II

1. Copyright Act, 1957, Terms of Copyright
2. Conditions for grant of copyright,
3. Extent of rights exception to copyright protection,
4. Fair use provision, assignment and licensing,
5. Copyright in Literary, Dramatic and Musical, Works, Sound Recording, Cinematograph, Films,
6. Copyright in Computer Programme, Author Special Rights, Right of Broadcasting and performers.

UNIT- III:

1. Research exemption Introduction to Patents Overview
2. Historical development Concepts, Novelty, Utility Inventiveness/Non-obviousness

UNIT- IV:

1. Patent Act 1970 – amendments of 1999, 2000, 2002 and 2005
2. Patentable subject matter, Patentability criteria, non-patentable inventions Pharmaceutical products and process and patent protection
3. Software Patents, Patenting of Micro-organism

UNIT- V:

1. Rights of patentee
2. Procedure for granting a patent and obtaining patents Grounds for opposition
3. Working of Patents, Compulsory License Acquisition, Surrender, Revocation, restoration Transfer of patent rights,

Reference Books

1. P. Narayanan (Eastern Law House), Intellectual Property Law
2. W. Cornish (Universal Publication), Intellectual Property Law
3. R.K. Nagarjan, Intellectual Property Law
4. Ganguli (Tata Megraw), Intellectual Property Rights
5. Brian C. Reid, A Practical Guide to Patent Law, 2nd Edition, 1993
6. N.S. Gopalakrishnan & T.G. Agitha, Principles of Intellectual Property (2009), Eastern Book Company, Lucknow
7. Dr. B.L. Wadhwa, Law Relating to Patent, Trademarks, Copyright & Designs
8. The Patent Act, 1970
9. The Copyright Act, 1957
10. The Trade Marks Act. 1999

OR**MDC 3B: GOODS AND SERVICES TAX (GST)**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

1. The objective of the course is to equip students with various aspects of GST.
2. The student will know the framework of GST as introduced in India and understand the various benefits to be accrued from implementation of GST.

Course Learning Outcomes: The students will be able to:

1. explain the concept of tax and the objective for its levy.
2. describe the concept of direct and indirect tax and the differences between the two types of taxes.
3. enumerate the basic features of indirect taxes and the principal indirect taxes in India.
4. explain the concept of GST and the need for GST in India.
5. explain the constitutional provisions pertaining to levy of various taxes.

Course Content:**UNIT I: INTRODUCTION TO GOODS AND SERVICES TAX (GST)**

1. Objectives and basic scheme of GST,
2. Meaning – Salient features of GST
3. Subsuming of taxes – Benefits of implementing GST
4. Constitutional Amendments
5. Structure of GST (Dual Model)
6. Central GST, State/Union Territory GST – Integrated GST – GST Council:
7. Structure, Powers and Functions. Provisions for Amendments.

UNIT II: GST ACTS: CGST ACT, SGST ACT (JHARKHAND STATE), IGST ACT

1. Salient Features of CGST Act, SGST Act (Jharkhand State), IGST Act-
2. Meaning and Definition: Aggregate turnover, Adjudicating authority, Agent, Business, Capital goods, Casual taxable person,
3. Composite supply, Mixed supply, Exempt supply, Outward supply, Principal supply, Place of supply, Supplier, Goods, Input service distributor,
4. Job work, Manufacture, Input tax, Input tax credit, Person,
5. Place of business, Reverse charge, Works contract, Casual taxable person, Non-resident person.
6. Export of goods/services, Import of goods/services, Intermediary, Location of supplier of service, Location of recipient of service.

UNIT III: PROCEDURE AND LEVY UNDER GST

1. Registration under GST: Procedure for registration, Persons liable for registration, Persons not liable for registration, Compulsory registration, Deemed registration, Special provisions for casual taxable persons and Non-resident taxable persons. Exempted goods and services – Rates of GST.
2. Procedure relating to Levy: (CGST and SGST): Scope of supply, Tax liability on mixed and composite supply,
3. Time of supply of goods and services, Value of taxable supply. Computation of taxable value and tax liability.
4. Procedure relating to Levy: (IGST): Inter-state supply, intrastate supply, Zero rates supply, Value of taxable supply – Computation of taxable value and tax liability.
5. Input tax Credit: Eligibility, Apportionment, Inputs on capital goods, Distribution of credit by Input Service Distributor (ISD) – Transfer of input tax credit - Simple problems on utilization of input tax credit.
6. Provision related to TDS and TCS under GST.

UNIT IV: ASSESSMENT AND RETURNS

1. Furnishing details of outward supplies and inward supplies, First return, Claim of input tax credit, Matching reversal and reclaim of input tax credit, Annual return and final return.

2. Problems on assessment of tax and tax liability.

UNIT V: GST AND TECHNOLOGY

1. GST Network: Structure, Vision and Mission, Powers and Functions.
2. Goods and Services Tax Suvidha Providers (GSP):
3. Concept, Framework and Guidelines and Architecture to integrate with the GST system. GSP ecosystem. (Theory only).

Reference Books

1. Taxmann's GST Acts with Rules & Forms - As Amended by Finance Act 2020 (Bare Act) (3rd Edition July 2020) [Paperback]
 2. Vinod Singhania and Monica Singhania, *Student's Guide to Income Tax Including GST*, Pub. Taxmann
 3. CA Vivek KR Agrawal, *GST Guide for Students*, Pub. Neelam Book House
 4. Shubham Jain, *Goods and Services Tax law book for students*
 5. CA Apeksha Solanki, *GST for the Layman: How it impacts your daily life*, Pub. Bloomsbury India
 6. CA Nikhil Singhal, *Summary book of GST*, Pub. Mukhaksh
 7. S.S. Gupta, *Taxmann's GST New return's: How to meet your obligations*, Pub. Taxmann
 8. Aditya Singhania, *Taxmann's GST Audit and Annual Returns*, Pub. Taxmann
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OR**MDC 3C: MANAGEMENT OF UNORGANISED LABOUR**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. The students will be able to understand the distribution of labour in India.
2. They will understand the difference between organised and unorganised labours.
3. Relevant acts and legal Provisions for all Sectors of labours.
4. Human Rights and Unorganized Labour.
5. Initiatives and HRD Interventions for Unorganized Labour.

Course Content:**UNIT – I:**

Unorganised labour: Concept, nature, size and structure its role in the national economy: size causes and problems

UNIT – II:

Unorganized Labour in the Different sectors: Nature, Employment Status, Wage levels and Problems of Home-based workers – Domestic workers – Sex Workers – Plantation Workers – Scavengers- Casual Labour, Agriculture Labour, Forest Labour, Bonded Labour, Contract workers, relevant acts and legal Provisions for all Sectors

UNIT – III:

Construction workers, Mine and Quarry workers, Fisheries, Beedi workers, Inter State Migrant workers in shops and commercial establishments, Employees in small and Medium Enterprises, Relevant acts and Legal Provisions, Accident Risk at Work – social security and social measures – unorganized Workers depending on common prosperity resources

UNIT – IV:

Human Rights and Unorganized Labour; Employment of Women and Children, Pattern of Women Employment Wages, Legal Provisions, social status, Problem, Women and Trade Unions, Employment of Children, Nature and extent, Legal Provisions, Problems of Girl child, ILO Conventions

UNIT – V:

HRD Interventions for Unorganized Labor; Skill and Knowledge up gradation, Leadership Development, Creating awareness for Cooperative Organization, Involvement of Community Leaders, Non-Government Organizations, Government Schemes, Organized the Unorganized Labor, Role of Trade Union, Role of ILO, CBWE and Jana Sikshana Sansthan

Reference Books

1. Government of India, Report of the National Commission on Labour, New Delhi
2. Government of India, Report of the Royal Commission on Labour, New Delhi.
3. Rastayannikaar, V.G. Agrarian Revolution in multiform Structure Society of Experience of Independent India, Routledge, London.
4. Holmstrom, Mark, Industry and Inequality, Orient Longman, Hyderabad.
5. Gangrade, K.D. Gathia, J.A. Women and Child Workers in Unorganised Sector; Non-government Organizations Perspective, Concept Pub. Co., New Delhi;
6. Sinha, G.P., and Ranade, S.N. Women Construction Workers (Two Vol.) Allied Pub., New Delhi.
7. Rao, usha, N.J. Women in a Develeoping socie, Ashish Pub. House, New Delhi.
8. Bahatia, Ajit S., rural Urban Migration; Deep and Deep Pub., New Delhi.
9. Nirmala, Banerjee women Construction Workers in Unorganised Sector, Sangam books, Hyderabad.
10. Sethuraman, S.V. Urban Informal Sector in Developing Countries, ILO, Geneva.
11. Sivramakrishna, K. Ramesh, K. and Ganghadhara Rao, MHRM in Agriculture; discovery Pub. House, New Delhi
12. Dhanagare, D.N. Peasant Movement in India, Oxford University Press, Bombay.
13. Etienne, Gibert; studies in Indian in Agriculture; University of California Press, California.
14. Krishna, Daya, Indian Farmer at Crossroads, Swan Pub., New Delhi.

15. Dutt, Ruddra organized Workers, Vikas Pub. House Pvt. Ltd., New Delhi.
 16. Papola, T.S. Urban Informal Sector in a Developing Economy, vikas Pub. House New Delhi.
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 27. Radhakrishna, R and Sharma, Alak, N (Ed). Empowering Rural Labour in India – Market, State and Mobilization, Institute for Human Development, New Delhi
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OR**MDC 3D: DEVELOPMENT & MANAGEMENT OF HUMAN RESOURCE**

(Credits: Theory-03)

Theory: 45 Lectures**Marks: 75 (ESE: 3 Hrs) = 75****Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

1. This course provides an exposure to the concerns of HRD in developing Human Resources.
2. It explores the dimension of Human Resource Training and Development.
3. It also deals with difficulties in implementing the development initiatives in practices.

Course Content:

UNIT – I: HRD-Macro Perspective: HRD Concept, Origin and Need, HRD as a Total System; Approaches to HRD; Human Development and HRD; HRD at Macro and Micro Climate.

UNIT –II: HRD–Micro Perspective: Areas of HRD; HRD Interventions Performance Appraisal, Potential Appraisal, Feedback and Performance Coaching, Training, Career Planning, OD or Systems Development, Rewards, Employee Welfare and Quality of Work Life and Human Resource Information; Staffing for HRD: Roles of HR Developer; Physical and Financial Resources for HRD; HR Accounting; HRD Audit, Strategic HRD

UNIT – III: Instructional Technology for HRD: Learning and HRD; Models and Curriculum; Principles of Learning; Group and Individual Learning; Transactional Analysis; Assessment Centre; Behaviour Modeling and Self-Directed Learning; Evaluating the HRD

UNIT – IV: Human Resource Training and Development: Concept and Importance; Assessing Training Needs; Designing and Evaluating T&D Programmes; Role, Responsibilities and challenges to Training Managers.

UNIT – V: Training Methods: Training with in Industry (TWI): On the Job & Off the Job Training; Management Development: Lecture Method; Role Play; In-basket Exercise; Simulation; Vestibule Training; Management Games; Case Study; Programmed Instruction; Team Development; Sensitivity Training; Globalization challenges and Strategies of Training Program, Review on T&D Programmes in India.

Reference Books

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3. Rao, T.V: Readings in HRD, Oxford IBH Pub. Pvt. Ltd., New Delhi, 2004.
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6. Rao, T.V: HRD Audit, Sage Publications, New Delhi.
7. ILO, Teaching and Training Methods for Management Development Hand Book, McGraw-Hill, New York.
8. Rao, T.V: Human Resource Development, Sage Publications, New Delhi.
9. Kapur, Sashi: Human Resource Development and Training in Practice, Beacon Books, New Delhi.
10. Lynton, Rolf. P and Pareek, Udai: Training for Development, Vastar Publishers, New Delhi.
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12. Jaya Gopaki, R: Human Resource Development: Coneputal analysis and Strategies, Sterling Publishing Pvt. Ltd., New Delhi.
13. Truelove, Steve. A: hand book of Training and Development, Beacon Books, New Delhi.
14. Goldstein, Irwin: Training in Organisations, Cole Publishing Co., California.
15. Malcom W. Warrant: Training for Results, Addison Wesley Pub. Co., London.
16. Graig, Robert L. and Bittel, Lester r. (Ed): Training and Development Hand Book, McGraw-Hill, New Delhi.
17. Padmalita Roury Kalyani Mohanthy, Human Resource Development and Organisational Effectiveness, Excel Books New Delhi 2009

OR
MDC 3E: SOCIETY & PSYCHOLOGY

(Credits: Theory-03)
Theory: 45 Lectures

Marks: 75 (ESE: 3 Hrs) = 75**Pass Marks: Th (ESE) = 30****Course Learning Outcomes:**

1. To impart knowledge of the basic concepts and modern trends in Social Psychology
2. To foster interest in Social Psychology as a field of study and research
3. To make the students aware of the applications of the various concepts in Social Psychology in the Indian context

Course Content:**UNIT I: The Field of Social Psychology**

1. Social Psychology: what it is and what it does
2. Methods of social psychology
3. The role of theory in Social Psychology

UNIT II: Social Cognition & Perception

1. Social and person perception
2. Determinants of person perception
3. Theories of social perception- Festinger's social comparison theory and Bem's self-attribution theory
4. Nature of interpersonal behaviors

UNIT-III

1. Social cognition and characteristics of social cognition
2. Affect and Cognition: how feelings shape thought and thought shapes feelings
3. Strategies of social cognition
4. Attribution: Understanding the Causes of Others' Behaviour
5. Impression Formation and Impression Management

UNIT IV: Attitudes

1. Attitude Formation: How Attitudes Develop. When and why do Attitudes Influence Behaviour?
2. Dimension of attitude How do attitudes guide behaviors?
3. Measurements of attitude and resistance to attitude change
4. Cognitive Dissonance: What it is and how do we manage it?

UNIT V: Groups and Individuals

1. Groups: what is a social group. The benefits of joining social group and what groups do for us
2. Methods of studying group structure and group function
3. Group effectiveness---meaning, determinants and interactional factor
4. Decision Making by Groups: Approaches, models of decision making
5. Rational approach to decision-making and heuristic approach

Reference Books

1. Aronson, E., Wilson, T. D., & Akert, R. M. (2007). *Social Psychology*. (6th edn.), New Jersey: Pearson Education prentice Hall
2. Baumeister, R. F., & Bushman, B. J. (2008). *Social Psychology and Human Nature*. International student edition, Thomson Wadsworth USA
3. Delamater, J. D., & Myers, D. J. (2007). *Social Psychology*. (6th edn.), Thomson Wadsworth International student edition, USA
4. Franzoi, S. L. (2003). *Social Psychology*. (3rd ed.). New York McGraw Hill co.
5. Kenrick, D. T., Newberg, S. L., & Cialdini, R. B. (2007). *Social Psychology: Goals in Interaction*. (4th edn.). Pearson Education Allyn and Bacon, Boston
6. Taylor, S. E., Peplau, L. A., & Sears, D. O. (2006). *Social Psychology*. (12th edn.). New Delhi: Pearson Education

OR
MDC 3F: HUMAN RIGHTS

(Credits: Theory-03)
Theory: 45 Lectures

Marks: 75 (ESE: 3 Hrs) = 75**Pass Marks: Th (ESE) = 30****Course Learning Objectives:**

The course on Human Rights aims to:

1. Provide an understanding of the concept of Human Rights, its classifications, and the correlation between rights and duties.
2. Offer an insight on the global efforts and major instruments for promotion of Human Rights.
3. Enable critical understanding of the Constitutional provisions, role of judiciary and other statutory/legal bodies as well as civil society agencies in promotion of Human Rights in India.
4. Make students grasp the nature, issues and concerns of Human Rights in Indian society and the challenges in its implementation.

Course Learning Outcomes:

1. The course on Human Rights would enable students to:
2. Have a nuanced understanding of the concept and dimensions of Human Rights as well as prerequisites for translation of its objectives and principles into reality.
3. Understand and appreciate the global efforts, standards and instruments for promotion of Human Rights.
4. Comprehend the Constitutional provisions, contributions of the judiciary, and the efforts of state and civil society institutions in promotion and defence of Human Rights.
5. Critically reflect on the nature and issues in Indian society that affects the practice and translation of Human

Course Content:**Unit I: An Introduction to Human Rights**

1. Values – Dignity, Liberty, Equality, Justice, Unity in Diversity,
2. Human Rights –Meaning, features, scope and Significance of the study,
3. Classification of Human Rights,
4. The Human Rights of First generation (Civil and Political Rights), Second generation (Economic, Social and Cultural Rights), Third generation (Collective Rights) and Fourth generation (Subjective Rights)

Unit II: International Protection and promotion of Human Rights

1. Universal Declaration of Human Rights, RTI as Human Right
2. International Covenants –ICCPR and ICESCR, Convention on the Elimination of All Forms of Discrimination against Women, 1979 and Convention on the Rights of the Child, 1989.

Unit III: Human Rights in India

1. Human Rights and Fundamental Rights,
2. Fundamental Rights and Fundamental Duties, Directive Principles,
3. Role of Judiciary in the protection of Human Rights.

Unit IV: Protection and promotion of Human Rights in India

1. National Human Rights Commission-Composition and functions, Jharkhand State Human Rights Commission – Composition and functions,
2. Human Rights and NGOs, Human Rights and Media, Minorities' Commission, Women' Commission

Unit V: Issues and concerns in Human Rights

1. Changing dimensions of Human Rights, Challenges to Human Rights promotion in India – Poverty, Illiteracy, Communal and caste conflicts, patriarchal values, lack of inclusive development,
2. Human Rights and Terrorism,
3. Human Rights and problems of health and environment,
4. Discrimination and violence against women, children, Dalits and Minorities, Child Labour and Bonded Labour.

References Books:

1. Baxi Upendra (ed.), The Right to be Human, Lancer International, Crawford, New Delhi, 1987.
 2. James(ed.), The Rights of People, Oxford, New York, 1988.
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 4. Rhonda L. Callaway& Julie Harrelson- Stephens, "International Human Rights",
 5. Published by viva books private limited, New Delhi, 2010.
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