



Central University of Haryana Mahendergarh (Haryana), 123031

Criterion 1-Curricular Aspects

Key Indicator Metric	1.3	Curriculum Enrichment
Metric	1.3.1	Integration of cross-cutting issues into the curriculum relating to Professional Ethics, Human Values, Gender, Environment and Sustainability

Syllabus of the Courses related to Professional Ethics, Human Values, Gender, Environment and Sustainability

Unit -III

Diagnosis of Non-infectious Diseases: Diagnosis of Lifestyle disorder- Causes, types, symptoms, complications, diagnosis and prevention of Diabetes (Type I and Type II), Hypertension (Primary and secondary), Testing of blood glucose using Glucometer/Kit

Diagnosis of Tumours-Types (Benign/Malignant), Detection and metastasis; Medical imaging: X-Ray, PET, MRI and CT scan (using photographs). Molecular diagnosis of tumorigenesis types of tumor.

Unit -IV

Diagnosis of Infectious Diseases: Causes, types, symptoms, diagnosis and prevention of Tuberculosis and Hepatitis Molecular diagnostics of bacterial infections-*Mycobacterium tuberculosis*, Staphylococci, *Schwenella typhus*, Pathogenic *E.coli*, sample preparation and pathogen detection. Prenatal diagnostics of various genetic disorders.

Molecular diagnostic of various viral diseases- HIV type -1, HIV type –II, HPV, Various hepatitis strains, Influenza (H1N1), sample preparation, various steps required for viral infection analysis and Viral load monitoring,

Suggested readings:

1. Preventive and Social Medicine, Park, K. (2007), B.B. Publishers
2. Textbook of Medical Laboratory Technology, II Godkar P.B. and Godkar D.P. Edition, Bhalani Publishing House
3. A Laboratory Manual for Rural Tropical Hospitals, A Basis for Training Courses, Cheesbrough M.,
4. Textbook of Medical Physiology, Guyton A.C. and Hall J.E. Saunders
5. Pathologic Basis of Disease, VIII Edition, Robbins and Cortan, Saunders
6. Lab Manual on Blood Analysis and Medical Diagnostics, Prakash, G. (2012), S. Chand and Co. Ltd.

SEMESTER-III

Course title: Human Health and Diseases

Credit:4

Course code: SIAS BC 13 04 DCEC 3104

Lectures:60

Course objective: To acquire knowledge on different diseases of humans and their management.

Learning outcomes:

Upon completion of this course, the student will be able to:

- Be aware of energy requirements for humans, malnutrition disorders in children and role of vitamins and minerals in maintaining health
- Understanding basic concept of life style disease, hormonal imbalance, autoimmune disease and viral diseases
- Assess pathophysiology, risk factors and clinical manifestation of diseases related to nutrition
- Gain insights about the current lifestyle as a consequence of industrialization

Unit I

Inborn errors of metabolism, Nutritional deficiency based diseases: Alkaptonuria, Phenylketonuria, SCID, Clotting disorders. Kwashiorkar, Marasmus, Beri-beri, Scurvy, Pellagra, Anaemia, Night blindness, Rickets, Osteomalacia, Osteoporosis, Wilson's disease.

Unit II

Life style diseases, Hormonal Imbalances: Obesity, Cardiovascular diseases, Atherosclerosis, Diabetes mellitus-II. Inflammatory Bowel Disease (IBD). Outline of hormone action and imbalances leading to disease – precociouspuberty, hyper and hypopituitarism. Hyper and hypothyroidism.

Unit III

Autoimmune diseases, Diseases caused due to misfolded proteins: Concepts in immune recognition - self and non-self-discrimination, organ specific autoimmune diseases – Hashimoto’s thyroiditis, Grave’s disease, Myasthenia Gravis; Systemic diseases - SLE, rheumatoid arthritis; Diabetes Mellitus-I. Alzheimer’s, Huntington’s disease, Kuru, Creutzfeldt-Jakob disease, Sickle cell anemia, Thalassemia.

Unit IV

Infectious diseases: Viral infection (polio, measles, mumps, influenza, HIV); Bacterial infections (tetanus, diphtheria, tuberculosis, typhoid, cholera); Protozoan (*Plasmodium* and *Trypanosoma*) and parasitic infections. Vaccines against diseases. General strategies in the design and development of vaccines.

Suggested readings :

1. Textbook of Biochemistry with Clinical Correlations (2011) Devlin, T.M. John Wiley & Sons, Inc. (New York), ISBN: 978-0-4710-28173-4.
2. Immunology: A Short Course (2009) 6th ed., Coico, R and Sunshine, G., John Wiley& sons, Inc (New Jersey), ISBN: 978-0-470-08158-7
3. Biochemistry (2012) 7th ed., Berg, J.M., Tymoczko, J.L. and Stryer, L., W.H Freeman and Company (New York), ISBN: 13:978-1-4292-7635-1.
4. Genetics (2012) 6th ed., Snustad, D.P. and Simmons, M.J., John Wiley & Sons. (Singapore), ISBN: 978-1-118-09242-2.

SEMESTER-III

Course title: Clinical Biochemistry

Course code: SIAL BC 1 3 01 GEC 4004

Credit:4

Lectures: 60

Course objective: The objectives of this course are to demonstrate how basic biochemistry and analytical chemistry can be applied to medical diagnosis, treatment and management.

Learning outcomes:

Upon completion of this course, the student will be able to:

- Clinically assess the laboratory indicators of physiologic conditions and diseases
- Understanding the biochemical and molecular tools needed to accomplish diagnostic, and therapeutic intervention on hereditary and acquired disorders
- Understanding the importance of quality control and assurance to diagnostic work
- Illustrate, compare and appreciate functions and biochemical attributes of Liver and Implications in Clinical Biochemistry

Unit-I

Clinical Biochemistry - concept, definition and scope; biological samples - types, collection, processing, stability and storage; phlebotomy; chemical composition of biological fluids and its importance - blood, urine and cerebrospinal fluid; reference ranges.

3. Biochemistry (2012) 7th ed., Berg, J.M., Tymoczko, J.L. and Stryer, L., W.H Freeman and Company (New York), ISBN: 13:978-1-4292-7635-1.

SEMESTER -I

Course title: Biochemical and Environmental Toxicology

Credit: 4

Course code: SIAL BC 1 1 02 GEC 4004

Lectures: 60

Course objective: To study the fundamental concepts, methods, approaches of Biochemical and environmental toxicology.

Learning outcomes:

- Identifying a variety of environmental toxicants in terms of their occurrence and toxic effects
- Understanding the fate and transport of toxicants in the environment and how these processes affect their toxicity
- Understanding the toxicological effects of biochemical and environmental toxicants on humans

Unit –I

Definition and scope of toxicology, eco-toxicology and its environmental significance. Toxic effect: Basis for general classification & nature. Dose – Response relationship: synergism and antagonism, determination of ED₅₀&LC₅₀/LD₅₀, minimum effective dose (MED), minimum tolerance dose (MTD). Acute and chronic exposures. Factors influencing toxicity.

Unit-II

Xenobiotic metabolism: absorption & distribution. Phase I reaction. Oxidation, reduction, hydrolysis and hydration. Phase II reaction/conjugation: methylation, glutathione, glucouronic acid and amino acid conjugation. Detoxification. Biochemical basis of toxicity: distribution of Excitable membrane function. Altered calcium homeostasis. Covalent binding to cellular macromolecules & genotoxicity. Tissue specificity of toxicity. Toxicity testing: in-vitro test systems- bacterial mutation test: reversion test, Ames test, fluctuation tests. Comet assay. Chromosome damage tests.

Unit-III

Food Toxicology: role of diet in cardio-vascular disease and cancer. Toxicology of food additives. Metal toxicity: Toxicology of arsenic, mercury, lead and calcium. Environmental factors affecting metal toxicity – effect of light, temperature and pH.

Unit-IV

Diagnosis of toxic changes in liver and kidneys: metabolism of haloalkanes, haloalkenes and paracetamol with their toxic effects on tissues. Air pollution: common air pollutant & their sources. Air pollution and ozone. Air pollution due to chlorofluorocarbons (CFCS) and asbestos. Water pollution; major water pollutants. Effects of selected pollutions on fresh water flora & fauna. Effect of UV radiation on human health.

Suggested readings:

1. Introduction to Environmental Toxicology: Molecular Substructures to Ecological Landscapes (2017) 5th ed., Landis WG, Sofield RM and Yu MH, CRC Press, ISBN: 978- 1498750424.
2. Environmental Toxicology: Biological and Health Effects of Pollutants (2011) 3rd ed., Yu MH, Tsunoda H and Tsunoda M, CRC Press, ISBN: 978-1439840382.
3. Environmental Toxicology Current Developments (2014) 1st ed., Rose J, Taylor and Francis, ISBN: 0203-30551-5.
4. An Introduction to Environmental Toxicology (2018) 4th ed., Dong MH, Create space Independent Publishing platform, ISBN: 1979904510.
5. Foodborne Microbial Pathogens: Mechanisms and Pathogenesis (2018) 2nd ed., Bhunia AK, Springer Nature, ISBN: 978-1493973477.

Course Name: Environmental Biotechnology					Course Code: SIAS BT 1 2 03 DCEC 3003		
Batch:	Programme:	Semester	L	T	P	Credits	Contact Hrs. per Week: 03
2021-2023	M.Sc. Biotechnology	II	3	0	0	3	Total Hrs.: 45
Total Evaluation Marks: 100							
CIE: 30 Marks		Examination Duration:				3 Hrs.	
TEE: 70 Marks							
Course Objectives	To provide information about various factors responsible for environmental pollution and its mitigation using biotechnology.						
Course Outcomes:	After completing this course, student is expected to learn the following: CO1: Understanding the source and mechanism of environmental pollution. CO2: Understanding the role of microbes and plants in remediation and management of environmental pollution. CO3: Understanding the replacement/options available for non-degradable pollutants.						
COURSE SYLLABUS							
NOTE:							
i) Question no. 1 is compulsory and to be set from the entire syllabus. It will have seven sub-parts and students need to answer any four. Each part carries three and half marks.							
ii) Question nos. 2 to 5 are to be set from all four units one from each. Every question will have three sub-parts and students need to answer any two sub-parts of each question. Each part carries seven marks.							
Unit No.	Contents						Contact Hrs.
I	Water, Soil and Air pollutants: their sources and effects. Major pollutants and their effects on flora and fauna, Bioremediation-mechanism and process, Factors affecting the bioremediation process, Natural and engineered bioremediation, concepts of bioaugmentation, biostimulation, biodegradation, biosorption and biofilms in the bioremediation of pollutants, In-situ and ex-situ bioremediation strategies. Phytoremediation, microbial systems for heavy metal accumulation, biosorption & detoxification mechanisms.						12
II	Primary, secondary and tertiary treatment of waste water, anaerobic and aerobic process of treatment; biochemistry and microbiology of aerobic and anaerobic treatment, use of genetically engineered organisms. Emerging biotechnological processes in wastewater treatment, Bioremediation of contaminated ground water; Membrane technology in waste water treatment, Bioreactors for waste water treatment, treatment of typical industrial effluents: dairy, distillery, dye, and pharmaceutical industries.						11

III	Solid waste treatment, characteristics of municipal, industrial and biomedical wastes; Aerobic and anaerobic methods, Physical and chemical treatment of solid waste, Composting and vermicomposting. Use of bacteria, fungi, plants, enzymes and genetically engineered organisms; Bioremediation of contaminated soils and waste land. Phytoremediation of soil metals; Concept of stubble burning and pollution, Wealth generation from solid agricultural residues in terms of biofuels and other value-added products. production of biogas from solid waste.	11
IV	Xenobiotic compounds: Degradation of aliphatic, aromatics, polyaromatic hydrocarbons, polycyclic aromatic compounds, pesticides, microbial treatment of oil pollution. Enzymes-types and role in biodegradation of pollutants, advantages & disadvantages of biocatalysts - isolated enzymes versus whole cell systems Immobilized biocatalysts in bioremediation. Use of solar radiation in industrial effluent treatment; Environment friendly technologies and products: biosurfactants, biofertilizers, biopesticides, integrated waste management. Recent advances and applications in the field.	11
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Environmental Science and Technology, (2019) 9th ed., Stankey EM, Lewis Publishers, New York. ISBN: 1420059203. 2. Environmental Biotechnology: Principles and Applications (2017) 1st ed., Rittmann B and Mccarty P, McGraw Hill Education; ISBN: 978-1259002885. 3. Environmental Biotechnology: Biodegradation, Bioremediation, and Bioconversion of Xenobiotics for Sustainable Development (2016) 1st ed., Sangeetha J, Thangadurai D, David M and Abdullah MA, Apple Academic Press; ISBN: 978-1771883627. 4. Environmental Biotechnology: Basic Concepts and Applications (2011) 2nd ed., Thakur IS, I K International Publishing House Pvt. Ltd; ISBN: 978-9380578477. 5. Biodegradation and Bioremediation: (2004), Singh A. and Ward O.P., Soil Biology, Springer, ISBN: 978-3-540-21101-3. 		

Course Name: Biosafety, Bioethics and IPR					Course Code: SIAS BT 1 2 03 C 3003		
Batch:	Programme:	Semester : II	L	T	P	Credits	Contact Hrs. per Week: 03
2021-2023	M.Sc. Biotechnology		3	0	0	3	Total Hrs.: 45
Total Evaluation Marks: 100							
CIE: 30 Marks		Examination Duration:				3 Hrs.	
TEE: 70 Marks							
Course Objectives	To introduce the concept of intellectual property rights, patenting and emphasis on biosafety and bioethics.						
Course Outcomes:	After completing this course, student is expected to learn the following: CO1: Understanding the basics of intellectual property rights. CO2: Understanding the importance and level of biosafety at laboratory and industrial levels. CO3: Understanding the ethical practices and concepts appropriate to the discipline.						
COURSE SYLLABUS							
NOTE:							
i) Question no. 1 is compulsory and to be set from the entire syllabus. It will have seven sub-parts and students need to answer any four. Each part carries three and half marks.							
ii) Question nos. 2 to 5 are to be set from all four units one from each. Every question will have three sub-parts and students need to answer any two sub-parts of each question. Each part carries seven marks.							
Unit No.	Contents						Contact Hrs.
I	Biosafety: introduction; historical background; introduction to biological safety cabinets; primary containment for biohazards; biosafety levels; GRAS organisms, biosafety levels of specific microorganisms; recommended biosafety levels for infectious agents and infected animals; definition of GMOs & LMOs; principles of safety assessment of transgenic plants – sequential steps in risk assessment; concepts of familiarity and substantial equivalence; risk – environmental risk assessment and food and feed safety assessment; problem formulation – protection goals, compilation of relevant information, risk characterization and development of analysis plan; risk assessment of transgenic crops vs cisgenic plants or products derived from RNAi, genome editing tools. Regulations: International regulations-Cartagena protocol, OECD consensus documents and Codex Alimentarius; Indian regulations-EPA act and rules, guidance documents, regulatory framework-RCGM, GEAC, IBSC and other regulatory bodies.						12
II	Bioethics: Introduction, ethical conflicts in biological sciences-interference with nature, bioethics in health care - patient confidentiality, informed consent, euthanasia, artificial reproductive technologies, prenatal diagnosis, genetic screening, gene						12

	therapy, transplantation. Bioethics in research - cloning and stem cell research, Human and animal experimentation, animal rights/welfare, Agricultural biotechnology-Genetically engineered food, environmental risk, labeling and public opinion. Sharing benefits and protecting future generations - Protection of environment and biodiversity - biopiracy.	
III	Patenting: Basics of patents: types of patents; Indian Patent Act 1970; recent amendments; WIPO Treaties; Budapest Treaty; Patent Cooperation Treaty (PCT) and implications; procedure for filing a PCT application; role of a Country Patent Office; filing of a patent application; precautions before patenting-disclosure/non-disclosure - patent application forms and guidelines including those of National Bio-diversity Authority (NBA) and other regulatory bodies, fee structure, time frames; types of patent applications: provisional and complete specifications, PCT and conventional patent applications.	10
IV	International patenting-requirement, procedures and costs; financial assistance for patenting, introduction to existing schemes; publication of patents-gazette of India, status in Europe and US; patent infringement- meaning, scope, litigation, case studies and examples; commercialization of patented innovations; licensing-outright sale, licensing, royalty; patenting by research students and scientists-university/organizational rules in India and abroad, collaborative research-backward and forward IP; benefit/Credits sharing among parties/community, commercial (financial) and non-commercial incentives. Recent advances and applications in the field.	11
<p>Suggested Readings:</p> <ol style="list-style-type: none"> 1. Office of the Controller General of Patents, Design & Trademarks; Department of Industrial Policy & Promotion; Ministry of Commerce & Industry; Government of India. http://www.ipindia.nic.in/ 2. World Trade Organisation. http://www.wto.org 3. World Intellectual Property Organisation. http://www.wipo.int 4. International Union for the Protection of New Varieties of Plants. http://www.upov.int 5. National Portal of India. http://www.archive.india.gov.in 6. IPR, Biosafety and Bioethics (2013) Parashar S, Goel D, Pearson Publishing India, ISBN: 9788131774700. 7. An Introduction to Ethical, Safety and Intellectual Property Rights Issues in Biotechnology (2017) Nambisan P, Academic Press, ISBN: 9780128092316. 8. http://dbtindia.gov.in/guidelines-biosafety 		

Course title: Biosafety and IPRs
Course code: SIAS BT 2 1 02 C 3003

Credit: 3
Contact hours: 45

Course objective:

- To study various biosafety measures involved in a proposed research work/study and protecting its rights through IPR

Learning Outcomes: After completion of this course, the students will be able:

4. To identify the safety risks associated with a proposed research work based on the involvement of microbes, plants and animals
5. To understand the role of different regulatory bodies in a proposed research work
6. To get information about the novelty of a research work followed by its protection by IPR

Unit-I

Biosafety: Microbes and Plants

Orientation of bio-risk management, Introduction of bio-risk, biosafety, biosecurity, bioterrorism, contaminant. Bio-risk characterization and evaluation; likelihood and consequences of risk. Bio-risk mitigation strategies; bio-risk management methodology and its implementation: Certification of equipment, Institutional Biosafety Committee, Good Laboratory Practices, Principal of Biosafety: Biosafety equipment (Primary Barriers and personal protection equipment), facility design and construction (secondary barriers). Biosafety cabinets: Class I, II (A1, A2, B1, B2) and III, biosafety level lab practices: Level 1,2,3,4, labs. Sterilization and decontamination of hazardous biological agents, GMO hazards. Development, evaluation and validation of SOPs (Standard Operating Procedures). Biological waste segregation and disposal.

Unit-II

Biosafety: Animal and Human

Safety in research (handling of bio-hazardous substances, disposal of bio-hazardous waste; Biosafety issues- Chemical, radiation, recombinant DNA, biological material), Risk groups and their categorization. Different biosafety levels, research ethics, information & significance of regulatory bodies in research

Unit-III

Intellectual Property Right (IPR)

Introduction, patent, requirement of patentability, ownership of tangible and intellectual property, foreign patent; special issues pertaining to Biotechnology patents: Disclosure requirements, ethical issues, Plant Biotechnology –UPOV and Plant Breeder’s rights, IPR issues in the Indian context, Copyright vs patents; International Treaties and Conventions; Business Software patents. Procedure for filing of Indian and Foreign patents.

Unit-IV

Regulatory bodies in research: Institutional Permissions and adherence to community guidelines / standards (Institutional Ethics Committee, Institutional Biosafety committee, Institutional Animal Ethics Committee). Ethics in human research: guideline and codes of best practice (Numbering code, Declaration of Helsinki, etc).

Suggested readings:

1. IPR, Biosafety and Bioethics (2013) 1st edi., Goel D and Parashar S. Pearson Education. ISBN: 978-8131774700
2. Office of the Controller General of Patents, Design & Trademarks; Department of Industrial Policy & Promotion; Ministry of Commerce & Industry; Government of India. <http://www.ipindia.nic.in/>
3. World Trade Organisation. <http://www.wto.org>
4. World Intellectual Property Organisation. <http://www.wipo.int>
5. International Union for the Protection of New Varieties of Plants. <http://www.upov.int>
6. IPR, Biosafety and Bioethics (2013) Parashar S, Goel D, Pearson Publishing India, ISBN: 9788131774700.
7. An Introduction to Ethical, Safety and Intellectual Property Rights Issues in Biotechnology (2017) Nambisan P, Academic Press, ISBN: 9780128092316.
8. <http://dbtindia.gov.in/guidelines-biosafety>

Sequencing of microbial genomes; database of microbial genomes; understanding microbial genomes; house keeping genes, essential genes; cluster of orthologous genes; minimal genome; microbiome analysis through genetic tools; metagenome and advances of metagenomics; application of crispr-cas9 system based genome editing.

Suggested readings:

1. Krebs JE, Elliott S and Goldstein (2017) Lewin's GENES XII 12th ed.. Jones and Bartlett Publishers. ISBN: 9781284104493.
2. Klug, Cummings and Spencer (2016) Concepts of Genetics 10th ed.. Pearson Education India. ISBN: 9332577463.
3. Snyder L, Peters, Henkin and Champness (2013) Molecular Genetics of Bacteria 4th ed. ASM Press; ISBN: 9781555816278.
4. Gardner, Simmons and Snustad (2010) Principles of Genetics 8thed., Wiley India Pvt Ltd ISBN: 9788126510436.
5. Kalia VC, Shouche Y, Purohit HJ and Rahi P (2017) Mining of Microbial Wealth and MetaGenomics 1st ed.. Springer Nature Singapore Pte Ltd. ISBN: 9789811057076.
6. Das S and Dash HR (2018) Microbial Diversity in the Genomic Era 1st ed.. Academic Press, ISBN: 9780128148495.

SEMESTER-II

Course title: Biosafety, Bioethics and IPR

Credit: 2

Course code: SIAL MB 1 2 03 C 2002

Lecture: 30

Course objectives:

- To impart knowledge of biosafety issues on microbes and genetically modified organisms
- To introduce the concept of intellectual property rights, patenting.

Course learning outcomes

- Learning of importance of Personnel Protective Equipment (PPE), general biosafety rules and different biosafety levels
- Understanding the role of regulatory agencies for working products derived from biotechnology
- Awareness on ethical issues involving biological material
- Knowledge on intellectual property rights and their implications in biological research and product development.

Unit-I

Biosafety: introduction; historical background; introduction to biological safety cabinets; primary containment for biohazards; biosafety levels; PPE, GRAS organisms, biosafety levels of specific microorganisms; recommended biosafety levels for infectious agents and infected animals; definition of GMOs & LMOs; principles of safety assessment of transgenic plants –Regulations: International regulations-Cartagena protocol, OECD consensus documents and Codex

Alimentarius; Indian regulations-EPA act and rules, guidance documents, regulatory framework-RCGM, GEAC, IBSC and other regulatory bodies.

Unit-II

Bioethics: Introduction, ethical conflicts in biological sciences-interference with nature, bioethics in health care - patient confidentiality, informed consent, euthanasia, artificial reproductive technologies, prenatal diagnosis, genetic screening, gene therapy, transplantation. Bioethics in research - cloning and stem cell research, Human and animal experimentation, animal rights/welfare, Protection of environment and biodiversity - biopiracy.

Unit-III

Patenting: Basics of patents: types of patents; Indian Patent Act 1970; recent amendments; WIPO Treaties; Budapest Treaty; Patent Cooperation Treaty (PCT) and implications; procedure for filing a PCT application; patent application forms and guidelines including those of National Bio-diversity Authority (NBA) and other regulatory bodies.

Unit- IV

Patent infringement- meaning, scope, litigation, case studies and examples; commercialization of patented innovations; licensing-outright sale, licensing, royalty; patenting by research students and scientists-university/organizational rules in India and abroad

Suggested readings:

1. Office of the Controller General of Patents, Design & Trademarks; Department of Industrial Policy & Promotion; Ministry of Commerce & Industry; Government of India. <http://www.ipindia.nic.in/>
2. World Trade Organisation. <http://www.wto.org>
3. World Intellectual Property Organisation. <http://www.wipo.int>
4. International Union for the Protection of New Varieties of Plants. <http://www.upov.int>
5. National Portal of India. <http://www.archive.india.gov.in>
6. Parashar S, Goel D (2013) IPR, Biosafety and Bioethics Pearson Publishing India, ISBN: 9788131774700.
7. Nambisan P (2017) An Introduction to Ethical, Safety and Intellectual Property Rights Issues in Biotechnology. Academic Press, ISBN: 9780128092316.
8. <http://dbtindia.gov.in/guidelines-biosafety>

SEMESTER-II

Course title: Microbial Physiology and Metabolism

Course code: SIAL MB 1 2 04 C 4004

Credit: 4

Lectures: 60

Course objectives:

- To describe metabolic and physiological diversity among prokaryotes.
- To impart knowledge on metabolic cycles of prokaryotic microorganisms

Microorganisms in biogeochemical cycles of carbon, nitrogen, phosphorus, sulphur, iron and manganese; biodegradation of starch, cellulose, hemicellulose, pectin and lignin in soil; biodegradation of pesticides and other xenobiotics; production of biogas; composting-microbiology, types and factors affecting composting; vermicomposting, green manuring

Unit-III

Plant-microbe interactions, Concepts of Rhizosphere, R:S ratio, Rhizoplane, spermosphere, phyllosphere microorganisms; PGPR, Biological Nitrogen fixation - symbiotic, non-symbiotic, associative symbiotic and endophytic organisms, process of nitrogen fixation; Molecular biology of Nitrogen fixation

Unit-IV

Biofertilizers – Types (Bacterial, fungal and algal), mass production and quality assurance; Microbial Biocontrol agents for insects and diseases- development and their significance. Mycorrhizae, Types of mycorrhizae and their interactions with plants

Suggested readings:

- Mehnaz S, Springer (2017) Rhizotrophs: Plant Growth Promotion to Bioremediation vol 2., ISBN: 9789811048616.
- Hakeem KR, Akhtar MS and Abdullah SNA (2016) Plant, Soil and Microbes Vol-1 Implications in Crop Science 1st ed., Springer Cham, ISBN: 9783319274539.
- Lugtenberg B (2016) Principles of plant-microbe interactions. Springer Cham, ISBN 3319381857.
- Paul EA (2017) Soil Microbiology, Ecology and Biochemistry 4th ed., Academic Press, New York, USA. ISBN: 9780124159556.
- Sylvia D, Fuhrmann J, Hartel P and Zuberer D (2005) Principles and Applications of Soil Microbiology 2nd ed., Pearson Education, USA. ISBN: 9780130941176.
- Alexander M (1985) Introduction to Soil Microbiology 3rd ed., , Wiley Eastern, New Delhi. ISBN: 9780894645129.

SEMESTER-II

Course title: Environmental Microbiology

Course code: SIAS MB 1 2 02 DCEC 4004

Credit: 4

Lectures: 60

Course objectives:

- To understand the role of microorganisms in environmental processes
- To learn principles and applications of microbiology in bioremediation of pollutants and wastewater treatment.

Learning outcomes:

- Know-how of the effect of environmental condition on microbes
- Understanding the interactions between microorganisms and their environment
- Understanding of applications of microorganisms in solving environmental problems

Unit-I

Historical developments and contributions of scientists in environmental microbiology; introduction and scope of environmental microbiology; environmental factors affecting microbial growth; impacts of GMOs on environment; role of microorganisms in mitigating global climate change; tools and techniques for studying microbial interactions with their environment.

Unit-II

Microbiology of natural environments: terrestrial environments; rhizosphere; aquatic environments (freshwater, marine and estuarine habitats); ground water; aeromicroflora and dispersal of microbes; human microbiomics; microbial interactions in rumen.

Unit-III

Microbiology of extreme environments: microbial growth and survival under hot environments, cold environments, alkaline environments, acidic environments, saline environments, environments rich in heavy metal, low nutrient environments, environments with high hydrostatic pressure, organic solvents and radiation; polyextremophiles. Space microbiology.

Unit-IV

Microbial indicators of environmental pollution; bioremediation of recalcitrant organic pollutants; microbial technology for waste management and treatment- solid waste management, landfills, utilization of solid wastes for production of food and feed, fuel and fertilizer; wastewater microbiology: microbiology of sewage and industrial effluents (paper and pulp, distillery etc.) - aerobic (trickling filters, activated sludge, oxidation ponds etc.) and anaerobic processes in wastewater treatment; enhanced recovery of metals, petroleum and bioenergy from natural resources. Biodegradation and biodeterioration.

Suggested readings:

1. Manual of Environmental Microbiology (2016), 4th ed., Yates, MV, Nakatsu CH, Miller RV and Pillai RV, ASM Press (USA), Print ISBN: 9781555816025, e-ISBN : 9781555818821.
2. Environmental Microbiology for Engineers (2016), 1st ed., Ivanov V, ISBN: 9780429109003.
3. Environmental Microbiology: From Genomes to Biogeochemistry (2015), 2nd ed., Madsen EL, John Wiley & Sons, Inc., ISBN: 978-1-118-43963-0.
4. Environmental Microbiology: Fundamentals and Applications (2015), 1st ed., Bertrand JC, Caumette P, Lebaron, P, Matheron R, Normand P and Sime-Ngando T, Springer Netherlands, eBook ISBN: 978-94-017-9118-2, Hardcover ISBN: 978-94-017-9117-5.
5. Environmental Microbiology (2016-17), 1st ed., Sharma, PD, Rastogi Publications (India), ISBN: 978-93-5078-140-1.

Semester-II

Course Title: The Microbiome
Course Code: SIAS MB 1 02 03 DCEC 4004

Credit: 4
Lectures: 60

Course objectives:

- To define the microbiome of human, animal and plants
- To know the techniques used in studying the microbiomes

Course Learning outcomes

11. Isolation of different bacterial and fungal organisms important in recycling of C, N, P in soil;
12. Measurement of CO₂ evolution rate to study decomposition in soil,
13. Estimation of different Soil enzymes- (dehydrogenase/ FDA hydrolase/ β -glucosidase)
14. Determination of Microbial biomass carbon
15. Determination of RS ratio of soil
16. Determination of quality of milk by methylene blue reductase test (MBRT) and SPC;
17. Microbiological examination of different food samples;
18. Determination of antibacterial activity of lactic acid bacteria
19. Screening of microorganisms from soils and industrial effluents for bioremediation applications
20. Microbiological quality control tests for water;

Suggested readings:

1. Aneja KR (2014) Laboratory Manual of Microbiology and Biotechnology 1sted., Scientific International Pvt., Ltd. ISBN: 9789381714553.
2. Cappuccino, JH, Sherman, N., (2017) Microbiology: A Laboratory Manual. 11th ed., Pearson Education Inc, ISBN: 9780134298597

SEMESTER-II

Course title: Soil and Agriculture Microbiology

Credit: 4

Course code: SIAL MB 1 2 01 DCEC 4004

Lectures: 60

Course objectives:

- To make understand the students about role of soil microbes in biogeochemical cycle of nutrients and organic matter degradation
- To make students familiar with PGPR and other microbial inoculants, and their role in maintaining soil fertility

Learning outcome:

- Understanding the role of microorganisms in the biogeochemical cycles of nutrients
- Understanding the role of microbes in degradation of solid organic waste and other organic pollutants.
- Understanding the different types of interactions between plants and microbes

Unit-I

History of development of soil microbiology; soil microorganisms: major groups, their diversity, abundance, characteristics; direct and indirect methods of studying soil microorganisms and their activities; influence of soil and environmental factors on microflora; soil health-major microbial indicators and their significance

Unit-II

Microorganisms in biogeochemical cycles of carbon, nitrogen, phosphorus, sulphur, iron and manganese; biodegradation of starch, cellulose, hemicellulose, pectin and lignin in soil; biodegradation of pesticides and other xenobiotics; production of biogas; composting-microbiology, types and factors affecting composting; vermicomposting, green manuring

Unit-III

Plant-microbe interactions, Concepts of Rhizosphere, R:S ratio, Rhizoplane, spermosphere, phyllosphere microorganisms; PGPR, Biological Nitrogen fixation - symbiotic, non-symbiotic, associative symbiotic and endophytic organisms, process of nitrogen fixation; Molecular biology of Nitrogen fixation

Unit-IV

Biofertilizers – Types (Bacterial, fungal and algal), mass production and quality assurance; Microbial Biocontrol agents for insects and diseases- development and their significance. Mycorrhizae, Types of mycorrhizae and their interactions with plants

Suggested readings:

- Mehnaz S, Springer (2017) Rhizotrophs: Plant Growth Promotion to Bioremediation vol 2., ISBN: 9789811048616.
- Hakeem KR, Akhtar MS and Abdullah SNA (2016) Plant, Soil and Microbes Vol-1 Implications in Crop Science 1st ed., Springer Cham, ISBN: 9783319274539.
- Lugtenberg B (2016) Principles of plant-microbe interactions. Springer Cham, ISBN 3319381857.
- Paul EA (2017) Soil Microbiology, Ecology and Biochemistry 4th ed., Academic Press, New York, USA. ISBN: 9780124159556.
- Sylvia D, Fuhrmann J, Hartel P and Zuberer D (2005) Principles and Applications of Soil Microbiology 2nd ed., Pearson Education, USA. ISBN: 9780130941176.
- Alexander M (1985) Introduction to Soil Microbiology 3rd ed., , Wiley Eastern, New Delhi. ISBN: 9780894645129.

SEMESTER-II

Course title: Environmental Microbiology

Course code: SIAS MB 1 2 02 DCEC 4004

Credit: 4

Lectures: 60

Course objectives:

- To understand the role of microorganisms in environmental processes
- To learn principles and applications of microbiology in bioremediation of pollutants and wastewater treatment.

Learning outcomes:

- Know-how of the effect of environmental condition on microbes
- Understanding the interactions between microorganisms and their environment
- Understanding of applications of microorganisms in solving environmental problems

Unit-I

3. Laboratory Manual and Workbook in Microbiology: Applications to Patient Care (2003)
7th ed. Morello JA, Helen PA and Mizer E, McGraw Hill Publications ISBN: 0072463546.

SEMESTER - III

Course title: Seminar

Credit: 2

Course code: SIAL MB 1 3 06 C 0202

Seminar will be of 45-minute duration during which the presentation will be followed by questions session by the audience comprising of faculty and students. Every student shall be required to submit the topic of his/her seminar in consultation with the Head of the Department/Faculty members/student advisors well in advance so that the same may be displayed on the notice board. The presenter has to write an Abstract to be distributed during Seminar in addition to two copies of write-up giving relevant details of the background of the subject, methods used and references/List of sources from where the material for presentation has been collected.

SEMESTER - III

Course title: Biofertilizer and Compost Technology

Credit: 4

Course code: SIAS MB 1 3 04 DCEC 4004

Lectures: 60

Course objective:

- To familiarize the students with the basic concepts regarding the use of microorganisms as biofertilizers and compost inoculants, their mass production
- To familiar students with the quality assurance of bioinoculants.

Learning outcomes:

- Understanding the use of microorganisms as biofertilizer and compost inoculant
- Understanding various applications of microbial inoculants in agriculture and solid waste management
- Skill development in biofertilizer and compost technology

Unit-I

Principles of crop inoculation with microbial agents, organic farming-role of biofertilizers and organic manures; overview of microbial inoculants-types and their mode of application, types of formulation- advantages and disadvantages.

Unit-II

Carriers for inoculants: types and their characteristics, strain selection of bacteria and cyanobacteria for biofertilizer production and quality control, mass multiplication: methodology and constraints/benefits, bulk production (small scale and commercial scale), setting up of pilot scale inoculant production plants.

Unit-III

Rhizobium: Isolation, characterization and formulation; *Azotobacter*: isolation, characterization and formulation; phosphate solubilizing microorganisms: isolation, characterization and formulation; am fungi- types, multiplication methods and formulations; ecology of inoculants/ microorganisms in soil, cyanobacteria as biofertilizer for paddy cultivation.

Unit-IV

Composting- microbiology, types and quality testing; vermi-compost: types of earthworms, production technology and its evaluation; biocontrol agents: evaluation and formulations; biogas production technology; silage production.

Suggested Readings:

1. Sustainable Green Technologies for Environmental Management (2019). 1st ed. Shachi SV and Venkatramanan, RP, Springer (Singapore) ISBN 9789811327711.
2. Solid Waste as a Renewable Resource: Methodologies (2015) 1st ed. Albanese, JAF and Ruiz, MP CRC Press. ISBN 9781771882439.
3. Biofertilizer Technology (2013) 1st ed., Kannaiyan, S, Kumar, K and Govindarajan K Scientific Publisher. ISBN 9789386102485.
4. Compost Science and Technology, Vol 8. (2011) 1st ed. Diaz LF, De Bertoldi M and Bidlingmaier W, Elsevier, ISBN 9780080439600
5. Microbes for Sustainable Agriculture (2010) Tilak, KVBR, Pal, KK and De, R. I.K. International Publishing House Private Ltd. (New Delhi) ISBN 9789380026886

SEMESTER - III

Course title: Plant Pathology
Course code: SIAS MB 1 3 05 DCEC 4004

Credit: 4
Lectures: 60

Course objective:

- To appraise the students about principles plant pathology and diseases of agricultural crops.
- To upraise the students about disease resistance and various methods of controlling diseases

Learning Outcomes:

- Understanding of factors responsible for diseases in the crops
- Determining the mechanisms of pathogens for causing diseases in plants
- Demonstrating the techniques for management of crop diseases

Unit-I

Introduction and history of plant pathology; definitions and concepts of plant diseases; biotic and abiotic factors responsible for plant diseases; Interaction of microorganisms with plants and their effect on plant growth. Modern detection methods

Unit-II

Host-pathogen interactions - recognition and infection, symptomatology, disease development- role of enzymes, toxins, growth regulators; defense strategies; hypersensitivity responses including oxidative burst, phenolics, phytoalexins, PR proteins, elicitors and their effects on host plants.

Unit-III

Growth, reproduction, survival and dispersal of important plant pathogens; Role of environment and host nutrition on disease development; diseases of some important cereals (Rice, wheat), vegetables (Tomato, Potato), commercial crops (Cotton, Sugarcane) and fruit crops (Mango, Citrus, Grapes).

Unit-IV

Plant disease resistance – pathogen associated molecular patterns, pattern recognition receptors, PTI, effectors, ETI, disease control in plants - physical, chemical methods; use of biocontrol agents - bacteria and fungi; Molecular approaches for plant protection - applications and constraints.

Suggested readings:

1. Introduction to Principles of Plant Pathology (2018) 5thed. Singh RS, Scientific International Pvt. Ltd. ISBN: 9739386479488.
2. Plant Pathology (2018) 1sted., Burchett, S and Burchett S CRC Press, ISBN: 9780815344834.
3. Principles of Plant Pathology (2014) Jagtap G, Dhutraj D and Dey U. Agrobios (India), ISBN-978-8177544916.
4. Plant Pathology, (2005) 5thed., Agrios GN, Academic Press (New York) ISBN: 9780120445653.
5. Molecular Plant Pathology (2003) 1st ed., Dickinson M, Sheffield Annual Plant Reviews, CRC Press. ISBN: 9781841271088.

SEMESTER-III

Course title: Biofuels and Bioenergy

Credit: 4

Course code: SIAS MB 1 3 06 DCEC 4004

Lectures: 60

Course objectives:

- To provide a thorough understanding of various renewable feedstocks for production of biofuels
- To provide students with knowledge on different technologies used in biofuel facility operations.

Course Learning outcomes:

- Understand the situation of utilization of biomass for energy resources
- Learn the developments in different generations of biofuels
- Understand the technologies related to life cycle assessment

Unit I

Bioenergy/Biofuel concept, advantages and disadvantages, types and generations of biofuels, biomass resources/feedstocks for bioenergy production: types (agricultural residues, energy crops, forestry waste and municipal wastes and others), production, availability, and characteristics. General principles of the carbon cycle, greenhouse effect and global climate change. Bioeconomy, circular bioeconomy, biorefinery concept.

Unit II

Structure and function of lignocellulosic biopolymers, various types of pretreatment technologies (Mechanical, Physical, chemical, physicochemical, biochemical, ionic liquids, etc.) general scheme for bioconversion of biomass to biofuel; biomass characterization techniques, concept of pseudo-lignin and inhibitors, biodiesel production; environmental impacts of biofuel production

Unit III:

Lignocellulolytic enzymes (LCEs) such as cellulase, hemicellulase, etc.; accessory enzymes (swollenin; LPMOs and AAs); submerged and solid-state fermentation technology for enzyme production, recent developments and commercialization aspects of LCE enzyme; enzymatic hydrolysis process; saccharification yield and efficiencies; enzyme cocktail preparations for achieving higher saccharification yield; factors affecting biomass hydrolysis

Unit IV

Recent trends and advancements in biofuels production (ethanol, biodiesel from oil crops, microbial fuel cells, biohydrogen, biogas and other value-added product generation in an integrated approach), role of microbes, types and characterization, Effect of pH, temperature, nutrients, etc.; Life cycle assessment of biofuels and biofuel technologies, India's energy demand and supply management,

Suggested Readings

1. Mahesh & Dayal (1992). Renewable Energy Environment and Development, Konark Publishers (P) Ltd.
2. Rao S & Parulakar BB (1994). Energy Technology, Khanna Publishers, New Delhi.
3. David N-S Hon DNS & Nobuo Shiraishi N (2000). Wood and Cellulosic Chemistry, CRC Press.
4. Sorensen B (2010) Renewable Energy, Academic Press.
5. Kasthurirangan G, van Leeuwen J, Robert C (2012). Sustainable Bioenergy and Bioproducts, Springer.

SEMESTER - III

Course title: Applied Microbiology
Course code: SIAS MB 1 3 03 GEC 4004

Credit: 4
Lectures: 60

Course objective:

- To understand the role of microorganisms and microbial processes in welfare of humankind
- To correlate the traditional microbiological techniques to microbial applications and their control.

Learning outcomes:

- Understanding of basic applications of microorganisms
- Know-how of the beneficial and harmful roles played by microbes
- Understanding of the roles of microbes in medical, environmental, industrial and food processes

Unit-I

Course title: Public Health Nutrition
Course code: SIAS NB 1 2 02 DCEC 4004

Credit: 4
Lectures: 60

Course objectives: To familiarize the students with the concept of Public Health Nutrition and methods of nutritional assessment

Learning Outcomes:

- Become familiar with the concept of food and nutrition security as well as public health nutrition.
- Obtain the exposure of national healthcare delivery system and gain knowledge of assessment of nutritional status of individuals and community.
- Understand the public health aspects of malnutrition prevalent in the community.

UNIT I

Public Health Nutrition : Aim, scope and content of Public Health Nutrition, Role of Public Health Nutritionist in National development . Health – definition, dimensions, determinants and indicators , National Nutrition Mission- maternal nutrition (antenatal and postnatal care)

UNIT II

Assessment of Nutritional Status of Individual and Community, Meaning and significance of nutritional status assessment, Methods of nutritional assessment: Anthropometry, Biochemical and Biophysical methods, clinical methods, dietary intake and ecological variables including socio-cultural, biologic, environmental and economic, and vital health statistics. Errors in methods of assessing nutritional status, Rapid assessment procedures for community nutrition assessment

UNIT III

Public Health Aspects of Undernutrition: Etiology, clinical features, public health implications, preventive strategies for : Chronic Energy Deficiency/ Protein Energy Malnutrition and Severe Acute Malnutrition , Micronutrient deficiencies - Vitamin A deficiency, Nutritional Anemias, Iodine deficiency disorders, Vitamin D deficiency and Osteoporosis, Zinc Deficiency

UNIT IV

Public Health implications and preventive strategies for: Obesity, Hypertension, Cardiovascular diseases, Diabetes. Food and Nutrition Security : Concepts and definitions of food and nutrition security at the national, regional, household and individual levels, Impact of food production, losses, distribution, access, availability, consumption on food and nutrition security

Suggested Readings:

1. Community based Management of children with severe acute malnutrition, Operational & Technical guidelines (2012) Ministry of health & Family Welfare, NirmanBhawan, New Delhi
2. Indian Council of Medical Research: Dietary Guidelines for Indians. (2011)Dietary Guidelines for Indians: A manual (2nd ed.) second edition , NIN.
3. Gibney MJ, Margetts, BM, Kearney JM, Arab I (2004) Public Health Nutrition. NS Blackwell Publishing.
4. Longvah T, Ananthan R, Bhaskarachary K, Venkaiah K (2017) Indian food composition tables. National Institute of Nutrition.
5. Jelliffe DB and Jelliffe EFP (1989) Community Nutritional Assessment. Oxford University Press.
6. Management of SAM children through medical nutrition therapy (2009) Vol I & II. National Consensus Workshop. Published by DBT. Ministry of Science & Technology. Government of India and ICMR, New Delhi

7. Owen AY and Frankle RT (1986) Nutrition in the Community: The Art of Delivering Services (2nd ed.) Times Mirror/Mosby.
8. Park K (2017) Park's Textbook of Preventive and Social Medicine. 24th ed. Jabalpur M/s. Banarsidas Bhanot.
9. Ross AC (2012) Nutrition in health and disease. (Eds) Lippincott Williams & Wilkins.
10. Shils ME (1998) Nutrition in health and disease. (Eds) Lippincott Williams & Wilkins. 17
11. Vir S (2011) Public health nutrition in developing countries Part-1 & 2. Woodhead Publishing India limited.
12. Wadhwa A and Sharma S (2003) Nutrition in the Community. A text book.
13. SCN News, UN ACC/SCN Subcommittee on Nutrition.
14. <https://www.who.int>

Introduction to different Glands like - Pituitary Gland, Pineal Gland, Parathyroid Gland, Thyroid Gland, Thymus etc.

3. अग्नाशय तथा एड्रीनल ग्रन्थि, डिम्ब व अण्डकोष ग्रन्थियों की स्थिति, हार्मोन व उनके कार्य - Pancreas and Adrenal Glands, Position of Ovaries and Testes, Harmon and their Functions
4. योगाभ्यास का अन्तःस्रावी व बहिःस्रावी ग्रन्थियों पर प्रभाव - Impact of Yogic Exercises on Endocrine and Exocrine System of Glands
5. नाड़ी-तन्त्र – सामान्य परिचय, विभिन्न भाग, संरचना एवं कार्य - Nervous System, General Information, Different Parts, Its Structure and Function

आवश्यक पठनीय -Essential Readings:

1. Shirley Teles, A Glimpses of Human Body, Swami Vivekanand Yoga Prakashan, Bangalore- 2014
2. M.M. Gore, Anatomy and Physiology of Yogic Practices, Motilal Banarsidass, New Delhi- 2007
3. Ross and Wilson, Human Anatomy and Physiology in Health and Illness, Churchill Livingstone- 2010
4. पं. ब्रह्मवर्चस , प्रज्ञा अभियान का योग व्यायाम , श्रीराम शर्मा . शोध संस्थान- हरिद्वार , शान्तिकुञ्ज , 1998

सन्दर्भ ग्रंथ -Suggested Readings:

1. Inderveer Singh, Anatomy and Physiology for Nurses, Jaypee Brothers Publishers- 2008
2. राकेश दीक्षित 2005 - मथुरा , भाषा भवन , विज्ञान-रचना एवं क्रिया-शरीर ,
- .3डॉ भास्कर .गोविन्द घाणेकर 2018 - (शरीर स्थान) सुश्रुत ,
- .4डॉ 2013 - शरीर रचना विज्ञान , मुकुन्द स्वरूप वर्मा .
- .5डॉ - शरीर क्रिया विज्ञान , प्रियव्रत शर्मा .1954
- 62009 - आयुर्वेदीय क्रिया शरीर , वैद्य रणजीत राय देसाई .

SIAS YOGA 1105 C 4105 प्राचीन एवं मध्यकालीन प्रसिद्ध भारतीय दार्शनिक व योगी -

Eminent Ancient and Medieval Philosophers and Yogis of India

Objective of the Paper:

- To know about our great Indian Yogis

- To learn about the teachings of Yogies of India

Outcome of the Paper: Upon successful completion of this course, students will be able to:

- Recognise our great Yogis and their contribution towards society
- Familiar with our great ancient Indian heritage and culture

UNIT-I संक्षिप्त जीवन-वृत्त तथा दर्शन व योग के प्रति योगदान - Short Life Sketch and their Contribution to Philosophy and Yoga

1. महर्षि मनु - Maharṣi Manu, 2. महर्षि याज्ञवल्क्य - Maharṣi Yājñavalakya, 3. महर्षि अष्टावक्र - Maharṣi Aṣṭāvakra, 4. विदेह राजा जनक - Videha Rājā Janaka, 5. ऋषिका मैत्रेयी - Rṣikā Maitrey, 6. ऋषिका गार्गी - Rṣikā Gārgī

UNIT-II संक्षिप्त जीवन-वृत्त तथा दर्शन व योग के प्रति योगदान - Short Life Sketch and their Contribution to Philosophy and Yoga

1. महर्षि वाल्मीकि - Maharṣi Vālmīki, 2. महर्षि वेदव्यास - Maharṣi Vedavyāsa, 3. महर्षि वसिष्ठ - Maharṣi Vasiṣṭha, 4. महर्षि विश्वामित्र - Maharṣi Viśvāmitra

UNIT-III संक्षिप्त जीवन-वृत्त तथा दर्शन व योग के प्रति योगदान - Short Life Sketch and their Contribution to Philosophy and Yoga

1. मुनि अक्षपाद गौतम - Muni Akṣapāda Gautama, 2. मुनि कणाद - Muni Kaṇāda, 3. मुनि कपिल - Muni Kapila, 4. पतञ्जलि - Muni Patañjali, 5. मुनि जैमिनि - Muni Jaimini, 6. मुनि बादरायण - Muni Bādarāyaṇa,

UNIT-IV संक्षिप्त जीवन-वृत्त तथा दर्शन व योग के प्रति योगदान - Short Life Sketch and their Contribution to Philosophy and Yoga

1. आदि शंकराचार्य - Ādi Śaṅkarācārya, 2. योगी मत्स्येन्द्रनाथ - Yogi Matsyendranātha, 3. योगी गोरक्षनाथ - Yogi Gorakshanātha, 4. सन्त ज्ञानेश्वर - Santa Jñāneśwara, 5. मुनि गौतम बुद्ध - Muni Gautama Buddha, 6. मुनि महावीर जिन - Muni Mahavira Jina

आवश्यक पठनीय - Essential Readings:

- 1) विश्वनाथ मुखर्जी, भारत के महान् योगी, विश्वविद्यालय प्रकाशन, नई दिल्ली - 2005
- 2) विश्वनाथ मुखर्जी, भारत की महान् साधिकायें, विश्वविद्यालय प्रकाशन, नई दिल्ली - 2005

- 3) कल्याण (भक्त अङ्क), गीता प्रेस गोरखपुर
- 4) कल्याण (सन्त अङ्क), गीता प्रेस गोरखपुर
- 5) पं. श्रीराम शर्मा, प्रज्ञा अभियान का योग व्यायाम, ब्रह्मवर्चस् शोध संस्थान, शान्तिकुञ्ज, हरिद्वार - 1998.

सन्दर्भ ग्रंथ- Suggested Readings:

1. कल्याण (योग-तत्त्वांक व योगाङ्क), गीता प्रेस गोरखपुर, क्रमशः 1991 व 2002
2. राकेश दीक्षित, शरीर-रचना एवं क्रिया-विज्ञान, भाषा भवन, मथुरा - 2005
3. डॉ. भास्कर गोविन्द घाणेकर, सुश्रुत (शरीर स्थान)
4. डॉ. मुकुन्द स्वरूप वर्मा, शरीर रचना विज्ञान

द्वितीय सत्र -Second Semester

SIAS YOGA 1206 C 4105 - पातञ्जल योगसूत्र - Pātañjala Yogasūtra

Objective of the Paper:

- To provide teachings of Patanjali Yoga Sutra
- How does one can control their mental fluctuations?

Outcome of the Paper: Upon successful completion of this course, students will be able to:

- Know mental fluctuations and methods of control them.
- Use the teachings of Patanjali in daily life.

Unit-I पातञ्जल योगसूत्र का परिचयचित्त , की भूमियाँ, चित्तवृत्तियाँ, अभ्यास और वैराग्य रूपी संसाधन, योगअंतराय-, चित्तप्रसादन - Introduction of Patañjali's Yogasūtra, Cittabhūmis, Cittavṛttis, Abhyāsa & Vairāgya as the tools, Yoga-Antarāyas, Citta-Prasādana

Unit-II क्रियायोग- और उसके प्रकार, ईश्वर का स्वरूप, पंच क्लेश, चतुर्व्यूहवाद, कर्म सिद्धान्त - Kriyā-Yoga and its Kinds, Concept of Īśvara, Pañca-kleśas, Caturvyūhavāda, Karma Theory अष्टाङ्गयोग, यम ,नियम-वितर्क और महाव्रत की अवधारणा ,आसन, प्राणायाम, प्रत्याहार और उनकी सिद्धियाँ - Eight Steps of Yoga, Yamas & Niyamas, Concept of Vitarka and Mahāvratas, Āsanas, Prāṇāyāma, Pratyāhāra and their Siddhis

5. प्राणायाम - भस्त्रिका शीतली व भ्रामरी ,- Prāṇāyāma - Bhastrikā, Sītālī and Bhrāmārī
6. मुद्रा व बन्ध - अश्विनीमुद्रा, महामुद्रामहावेधमुद्रा व शक्तिचालिनीमुद्रा ,महाबन्ध , - **Mudrās and Bandhas** -
Aśvinīmudrā, Mahāmudrā, Mahābandha, Mahāvedhamudrā and Śakticālinīmudrā
7. ध्यान - सोऽहम् साधना, गायत्रीध्यान व-मन्त्र- विपश्यना-ध्यान - Dhyānas (Meditation) - So’ham Sādhanā,
Gāyatrī-Mantra-Meditation, Vipāśyanā-Meditation

आवश्यक पठनीय -Essential Readings:

1. स्वामी धीरेन्द्र ब्रह्मचारीनई ,निकट गोल डाकखाना ,मोरारजी देसाई नेशनल इंस्टिट्यूट ऑव योग ,सूक्ष्म व्यायाम ,
- दिल्ली 1966
2. स्वामी सत्यानन्द सरस्वती2006 - बिहार ,मुंगेर ,योग पब्लिकेशन्स ट्रस्ट ,बन्ध-मुद्रा-प्राणायाम-आसन ,
3. O.P. Tiwari - Asana Why and How, Kaivalyadham SMYM Samiti, Lonavala- 2012
4. M.L. Gharote - Guidelines for Yogic Practices, Medha Publication, Lonavala - 1982
5. पं - हरिद्वार ,शान्तिकुञ्ज ,ब्रह्मवर्चस् शोध संस्थान ,प्रज्ञा अभियान का योग व्यायाम ,श्रीराम शर्मा .1998

सन्दर्भ ग्रंथ- Suggested Readings:

1. B.K.S. Iyengar - Light on Yoga, Harper Collins Publisher, New Delhi- 2012
2. B.K.S. Iyengar - Light on Pranayama, Harper Collins Publisher, New Delhi- 2012
3. Swami Kuvlayanand - Asana, Kaivalyadham SMYM Samiti, Lonavala- 1993
4. Swami Satyananda Saraswati - Asana Pranayama Mudra Bandhas, Yoga Publication Trust,
Munger, Bihar - 2006

SIAS YOGA 1209 C 4105 - मुख्य उपनिषद्, श्रीमद्भगवद्गीता और योगवासिष्ठ

Principal Upaniṣads, Gītā and Yogavāsiṣṭha

Objective of the Paper:

- To know about principal Upanishads
- To learn about the teachings of Upanishadas

Outcome of the Paper: Upon successful completion of this course, students will be able to:

- Understad about teachings of Upanishadas

- How Upanishads are helpful to human beings

Unit-I ईशावास्योपनिषद् - कर्म-निष्ठा, विद्या और अविद्या, ब्रह्म का स्वरूप - **Īśāvāsyopaniṣad**- Karmaniṣṭhā, Vidyā & Avidyā, Nature of Brahman - **केनोपनिषद्** - आत्मा और मन, सत्य की अनुभूति, यक्ष के उपाख्यान का संदेश - **Kenopaniṣad** - Ātmā and the Mind, Realization of Truth, Message of Yakṣa-Episode - **कठोपनिषद्** - योग की परिभाषा, आत्मा का स्वरूप एवं आत्मानुभूति का महत्त्व - **Kaṭhōpaniṣad** - Definition of Yoga, Nature of Soul, Importance of Self Realization - **प्रश्नोपनिषद्** - प्राण और रयि की अवधारणा, पंचप्राण - **Praśnopaniṣad** - Concept of Prāṇa & Rayi (Creation), Pañcaprāṇa

Unit-II मुंडकोपनिषद् - विद्या - परा तथा अपरा, ब्रह्मविद्या की विशेषताएं, तप और गुरुभक्ति, सृष्टि की उत्पत्ति, ध्यान का उद्देश्य - **Muṇḍakopaniṣad** - Vidyā - Parā & Aparā, Characteristics of Brahmadevyā, Tapas & Gurubhakti, Creation, Goal of Meditation - **माण्डूक्योपनिषद्** - चेतना की चार अवस्थाएँ एवं ओंकार से इनका संबन्ध - **Māṇḍukyopaniṣad** - Four States of Consciousness and their relation with Om-kāra; **ऐतरेयोपनिषद्** - आत्मा, ब्रह्माण्ड और ब्रह्म की अवधारणा - **Aitareyopaniṣad** - Concepts of Ātmā, Universe and Brahman

Unit-III तैत्तिरीयोपनिषद् - पंचकोश, शिक्षावल्ली, आनंदवल्ली, भृगुवल्ली का संक्षिप्त विवरण - **Taittirīyopaniṣad** - Pañcakośa, Śikṣāvalli; Ānandavalli and Bhṛguvalli in short; **छान्दोग्योपनिषद्** - ओम ध्यान, शाण्डिल्य-विद्या - **Chāndogyopaniṣad** - Om Meditation, Śāṅḍilyavidyā - **बृहदारण्यकोपनिषद्** - याज्ञवल्क्य-मैत्रेयी-संवाद - **Bṛhadāraṇyakopaniṣad** - Dialogue between Yājñavalkya and Maitreyī, **योगवासिष्ठ** - योगवासिष्ठ का सामान्य परिचय, आधि और व्याधि, मुक्ति के चार द्वारपाल, सत्वगुण का विकास, ध्यान के आठ चरण, सप्त भूमियाँ - **Yogavāsiṣṭha** - General Introduction of Yogavāsiṣṭha, Three Methods of Yoga, Ādhi & Vyādhī, Four Gatekeepers of Salvation, Promotion of Sattva Guṇa, Eight Steps of Meditation, Sapta Bhūmis

IV-Unit श्रीमद्भगवद्गीता - Bhagavadgītā - योग की परिभाषाएं - आत्मा का स्वरूप, स्थितप्रज्ञ, सांख्ययोग (अध्याय-2), कर्मयोग (अध्याय-3), ध्यानयोग (अध्याय-6), भक्तों के प्रकार (अध्याय-7), भक्ति की प्रकृति (अध्याय-12), भक्तियोग के साधन और साध्य, त्रिगुण और प्रकृति का स्वरूप, योगी का आहार एवं उसका वर्गीकरण (अध्याय 14 व 17), देवासुर संपद्विभागयोग (अध्याय-16), मोक्ष का उपदेश (अध्याय-18) - Definitions of Yoga, Concepts of Ātmā, Sthitaprajña, Sāṅkhyayoga (Chapter-II), Karmayoga (Chapter-III), Dhyānayoga (Chapter-VI), Types of Bhakta (Chapter-VII), Nature of Bhakti (Chapter-XII), Means and Goal of Bhaktiyoga, the Trigūṇas and Concept of Prakṛti, Food prescribed for Yoga Practitioner & Classification of Food (Chapter-XIV & XVII), Daivāsurasampad-vibhāgayoga (Chapter-XVI), Concept of Salvation (Chapter-XVIII)

सन्दर्भ ग्रंथ- Suggested Readings:

1. उपनिषद् अंक, कल्याण, गीता प्रेस गोरखपुर 2015 -
2. उपनिषद् प्रकाशसत्यव्रत सिद्धांतालंकार - , विजयकृष्ण लखनपाल, डब्ल्यू 77 - ए, ग्रेटर कैलाश, नई दिल्ली - 1981
3. साधक संजीवनी - स्वामी प्रेमसुख दास जी महाराज, गीता प्रेस गोरखपुर 1990 -
4. उपनिषद् दीपिका डॉ. रामनाथ वेदालंकार -
5. श्रीमदभगवद्गीता, शाङ्करभाष्य, गीताप्रेस, गोरखपुर 2015 -
6. गीता रहस्य - बाल गंगाधर तिलक 2019 -
7. गीताभाष्य - सत्यव्रत सिद्धांतालंकार, उत्तर प्रदेश 2013 -
8. The Principal Upanishads, S.Radha Krishan, Harpee Collins Publishers, A-75, Sector 37, Noida ,Uttar Pradesh - 201301

SIAS YOGA 1101 GE 3104
योग के मूल तत्त्व -Fundamentals of Yoga

Objective of the Paper:

- To know about Yoga
- To eradicate the misunderstanding about Yogic practices

Outcome of the Paper: Upon successful completion of this course, students will be able to:

- Know about meaning and definition of Yoga
- Familiar with an authentic foundation of Yogic practices

Unit-I योग का अर्थ, परिभाषाएँ, योग का लक्ष्य व उद्देश्य, योग का इतिहास, वर्तमान समय में योग की प्रासंगिकता, योग पद्धतियाँ - मंत्र योग, ज्ञानयोग, भक्तियोग, कर्मयोग, हठयोग एवं राजयोग - Meaning of Yoga, Definitions, Aim and objectives of Yoga, History of Yoga, Relevance of Yoga in modern times, Mantra-Yoga, Jñānayoga, Bhakti-Yoga, Karma-Yoga, Haṭha-Yoga and Rāja-Yoga विभिन्न शास्त्रों में योग का स्वरूप - वेद, उपनिषद्, गीता, जैनमत, बौद्धमत, सांख्य, न्याय, वैशेषिक, मीमांसा तथा वेन्दात- **Form of Yoga in different Texts-** Veda, Upaniṣads, Gītā, Jainism, Buddhism, Sāṃkhya, Nyāya, Vaiśeṣikas, Mīmāṃsā and Vedānta

Course Title: **Indian Ethos and Ethics for Information Professionals**

Course Objective: To give an understanding of the ethical issue involved in managing libraries and information centers and the Indian value system to manage in a better way abiding moral values.

Learning Outcomes

On studying of the course, students will be able to:

1. Develop and communicate a personal understanding of the moral significance and ethical responsibilities of being a library professional.
2. Develop and communicate an understanding of the goals of librarianship, including the influence of culture and diversity on library services practices.
3. Develop the knowledge and skills necessary to make ethically responsible decisions, including the development of deliberative capacities in which communication, listening, reflection, and reasoning are part of moral deliberation and conflict resolution.
4. Assess their abilities in contexts with respect to critical reasoning, effective communication, and ethical decision-making in context of values residing in Indian value system
5. Examine role of Indian ancient texts for self-development in order to work in cross-cultural environment.

Unit-1: Professional Ethics

- Introduction to professional ethics and values
- Code of professional ethics: National and International
- Librarianship as a service profession
- Library philosophy as guide for values and ethics

Unit-2: Ethical dilemma

- Ethical values towards institution/society and the library
- Ethical values towards staff and users
- Ethical values towards other libraries, associations and profession
- Ethical values towards the issue of plagiarism, computer/internet filtering, user privacy, copyright, censorship, free and open access

Unit-3: Self-management as Ethical Practices in Indian Ethos

(For self-discipline and personal development, the key lessons from ancient Indian sources and leaders for motivation to be ethical)

Unit-4: Indian value system and professional ethics for librarianship

- Ethics for LIS managers
- Ethical Philosophy- Indian perspective
- Need for Spiritual Values in LIS Management

- Holistic approach to ethics for Library and Information Professionals

Recommended Readings

1. Chakraborty, S. K. (1985). Human response in organizations: Towards the Indian ethos. Vivekananda Nidhi.
2. Nair, S. N. (2008). Echoes of Ancient Indian Wisdom: The Universal Hindu Vision and Its Edifice. India: Pustak Mahal.
3. Pandey, K. C. (2011). Ethics & Epics: Reflections on Indian Ethos. Readworthy.
4. Panigrahy, D. How To Develop A New Work Culture: Exploring The Indian Ethos. (1994). India: Kanishka Publishers.
5. Pérez Pulido, M. (2017). Ethics Management in Libraries and Other Information Services. United Kingdom: Elsevier Science.
6. Pfister, J. (2009). Coda. The Indian Ethos of Service. In The Yale Indian (pp. 161-174). Duke University Press.
7. Ranganathan, S. R. (1931). The five laws of library science. Madras Library Association (Madras, India) and Edward Goldston (London, UK).
8. Ranganathan, S. R. (1951). Documentation Genesis and Development. Vikas Publishing House (Delhi, India).
9. Ranganathan, S. R. (1961). Reference service. Asia Publishing House (Bombay).
10. Ranganathan, S. R. (1963). Documentation and its Facets: Being a Symposium of Seventy Papers by thirty-two Authors. Asia Publishing House (Bombay).
11. Shrimad Bhagwad Gita
12. Valmiki Ramayan

Course Title: **E-Resource Management**

Course Objective: To give an understanding of the various types of e-resources, policy, access and use related issues in a modern library and information center.

Learning Outcomes

On studying this course, students shall be able to:

1. Understand the basic concept, types, and process of collection building of e-Resources
2. Grasp the issues related to licensing, negotiation, access and use.
3. Promote to work in collaborative environment for better resources access and delivery with examples from leading consortia in India
4. Understand the user requirements and offering user-centric services and further analyzing for meeting and satisfying these demands

UNIT I: Electronic Resources Collection Development

- Concept, Need, Characteristics, Benefits and Drawbacks of e-resources
- Types of e-Resources: E-databases, E-journals, E-books, Linking Technologies, etc. Preservation of e-Resources
- Collection Building Process - Formulating Policy
- Budgeting, Pricing, Licensing, Ordering and Receiving, Evaluation of e-Resources

UNIT II: e-Resources: Negotiations, Licensing, and Access

- Model Licenses and Guidelines for Collection Building
- Negotiation –Concept and Need
- Copyright in the Digital Environment and User Training
- Delivery of e-Resources & Access Management and Authentication

UNIT III: Consortia

- Concept, Need and Purpose of Consortia
- Growth, development of Consortia and steps followed in formation a Consortia
- Collection Building of e-Resources through Consortia
- National and International Consortia: E-ShodhSindhu, IIMs, CSIR and OCLC. ETDs: Shodhganga

UNIT IV: Usage of Electronic Resources

- Management of Information Needs: with alert, document delivery, ask-a-librarian services
- Usage Statistics, e-Resource Usage Analysis
- Standards and Guidelines (COUNTER); Processing, Analysis and Presentation of Data
- Discovery based services

Recommended Readings

1. W Pattie, L. Y., Cox, B. J. (2020). *Electronic Resources: Selection and Bibliographic Control*. United States: CRC Press.
2. Patra, N. K. (2017). *Digital Disruption and Electronic Resource Management in Libraries*. United Kingdom: Elsevier Science.
3. Halaychik, C. S., Reagan, B. (2018). *Licensing Electronic Resources in Academic Libraries: A Practical Handbook*. United Kingdom: Elsevier Science.
4. Stachokas, G. (2019). *The Role of the Electronic Resources Librarian*. United Kingdom: Elsevier Science.
5. Lal, J., Tripathi, A. (2016). *Library Consortia: Practical Guide for Library Managers*. Netherlands: Elsevier Science.
6. Talbott, H., Zmau, A. (2018). *Electronic Resources Librarianship: A Practical Guide for Librarians*. United States: Rowman & Littlefield Publishers.
7. Conger, J. E. (2004). *Collaborative Electronic Resource Management: From Acquisitions to Assessment*. Westport: Libraries Unlimited.
8. Curtis, D., & Scheschy, V. M. (2005). *E-journals: A how-to-do-it manual for building, managing, and supporting electronic journal collections*. New York: Neal-Schuman Publishers.
9. Fenner, A. (2014). *Managing digital resources in libraries*. New York: Routledge.
10. Fowler, D. C. (2004). *E-serials collection management: Transitions, trends, atechinicalities*. New York: Haworth Information Press.
11. Garibyan, M., McLeish, S., & Paschoud, J. (2017). *Access and identity management for libraries: Controlling access to online information*. London: Facet Publishing.
12. Hanson, A., & Levin, B. L. (2003). *Building a virtual library*. Hershey: Information Science Pub.
13. Jones, W. (2014). *E-journals access and management*. New York: Routledge.
14. Katz, L. S. (2003). *Collection Development Policies: New Dimension for Changing Collections*. London: Routledge.
15. Kemp, R. (2008). *E-resource evaluation & usage statistics: Selector's choices*. Saarbrücken: VDM Verlag Dr. Müller.
16. Lee, S. D. (2004). *Building an electronic resource collection: A practical guide*. London: Facet Publishing.
17. Lee, S. H. (2012). *Electronic Resources and Collection Development*. Hoboken: Taylor and Francis
18. Webster, P. M. (2008). *Managing electronic resources: New and changing roles for libraries*. Oxford: Chandos.
19. Verminski, A., & Blanchat, K. M. (2017). *Fundamentals of electronic resources management*. Chicago : Neal-Schuman
20. Lee, Sul H. (2003). *Electronic Resources and Collection Development*. London: Routledge
21. Yu, H., & Breivold, S. (2008). *Electronic resource management in libraries: Research and practice*. Hershey: Information Science Reference

FUNDAMENTALS OF ECOLOGY

Unit I: Introduction to Ecology

Definition, subdivision and scope, Basic concepts in ecology, Autecology and Synecology, Level of organization in Ecology, Environmental heterogeneity, Applied ecology, Environmental complexes, Interaction of ecological factors.

Unit II: Ecological factors

Light, temperature, precipitation (rainfall), humidity. Atmosphere: gases and wind, atmospheric gases, wind factor and fire factor, topographic and edaphic factors. Different environmental laws and limiting factors (Liebig's law of minimum, Shelford's law of Tolerance, Combined concept of limiting Factors). Biotic community, Interdependence in a community and community metabolism, Community ecology: structure, composition and development of community, species diversity in communities, Ecotones, Concept of edge effect, Ecological niche, Gause's Principle.

Unit III: Ecosystem

Introduction, kinds of ecosystem, structure and functions, abiotic and biotic component, Ecological energetics, Energy flow models, Food chain and Food web, Concepts of productivity and standing crops, Ecological Pyramids-types, Ecological succession, Ecological indicators, Ecological efficiencies, Biogeochemical cycles in ecosystems.

Unit IV: Population ecology

Population characteristics; density, natality, mortality, biotic potential, survivorship curves, age distribution, growth curves and models, r & k selection. Population interaction, Prey-Predator Relationship, Ecological Model

REFERENCES

1. Begon, M., Townsend, C.R. and Harper, J.L. (2005). Ecology: From Individuals to Ecosystems, 4th Edition, John Wiley & Sons.
2. Botkin, D. and Edward, K. (1997). Environmental Sciences, John Wiley & Sons, New York.
3. Chapman, J. L. and Reiss, M. J. (1998). Ecology: Principles and Applications. Cambridge University Press, UK.
4. Cunningham, W. P. and Cunningham, M. A. (2004). Principles of Environment Science. Enquiry and Applications. 2nd Edition. Tata McGraw Hill, New Delhi.
5. Dash, M.C. and Dash, S.P. (2009). Fundamentals of Ecology. McGraw Hill Education.
6. Odum, E.P. (2005). Fundamentals of Ecology, 5th Edition, Cengage Learning Publication.
7. Raven, P. H., Berg, L.R. and Hassenzahl, D.M. (2008). Environment. 6th Edition. John Wiley & Sons., USA.
8. Sharma, P.D. (2000). Ecology & Environment, 7th Edition, Rastogi Publications, Meerut.
9. Singh, J.S., Singh, S.P. and Gupta, S.R. Ecology, Environment and Resource Conservation. Anamaya Publishers, New Delhi, India. 2006.
10. Smith, T.M. and Smith, R.L. (2015). Elements of Ecology. 9th Edition, Pearson Benjamin Cummings, USA.

NATURAL RESOURCE CONSERVATION AND MANAGEMENT

Unit I: Introduction and Mineral resources

Natural resources: Concept of resource, classification of natural resources. Factors influencing resource availability, distribution and uses. Mineral resources: use of minerals, Resources and reserves. Mineral exploration and extraction, Ocean as new area for exploration of mineral resources. Ocean ore and recycling of resources, Environmental impacts of mineral extraction

Unit II: Soil and water resource

Soil as a resource; soil profile; Soil erosion; Soil conservation and management strategies; Role of organic matter and its maintenance; soil nutrient deficiencies, Remedial measures and management techniques; Use and over-utilization of surface and ground water, Dams-benefits and problems. Integrated water resources management and Rain Water Harvesting.

Unit III: Energy resources

Energy sources, Prospects of alternate energy sources. Principal of generation of renewable energy: Solar energy (Photovoltaic and thermal conservation), Hydroelectric power, Tidal, Ocean thermal energy conversion (OTEC), Wind, Geothermal energy, Nuclear energy: fusion and fission, Magneto hydrodynamic power, bio-energy. Energy use pattern in different parts of world.

Unit IV: Forest resources

Forest vegetation: status, distribution and management, Major forest types and their characteristics, Use and over-exploitation, Deforestation, Timber extraction, mining, dams and their effects on forest and tribal people, Urban forestry.

REFERENCES

1. Boyle, G. (2004). Renewable Energy, 2nd Edition. Oxford University Press.
2. Jain, A. K. (1989). Forests in India, Vorha Publication, Allahabad.
3. Oliver, S. O. and Daniel, D. C. (1990). Natural Resource Conservation: Management for a Sustainable future. Prentice Hall International, New Jersey.
4. Rai, G. D. (1993). Non Conventional Energy Sources, Khanna Publishers, Delhi.
5. Raven, P.H., Berg, L.R. and Hassenzahl, D.M. (2008). Environment. 6th ed. John Wiley & Sons., USA.
6. Tiwari, G.N. and Ghosal, M. K. (2005). Renewable Energy Resources: Basic Principles and Application, Narosa Publishing.
7. Twidell, I.J. and Tony, W. (2007). Renewable Energy Resources. Taylor and Francis Group.

BIODIVERSITY CONSERVATION

Unit I: Introduction

Concepts and components of biodiversity, types of diversity (Microbial, Plant, Soil, Agro-biodiversity), Biodiversity as an important and valuable resource, human population growth and its implications on biodiversity, biodiversity indices, biodiversity losses

Unit II: Strategies for biodiversity conservation

In-situ conservation: sanctuaries, biospheres reserves, national parks, preservation plots. Ex-situ conservation: botanical gardens, zoos, aquaria, homestead garden; herbarium; In-vitro Conservation of plant tissue culture; gene bank; pollen and spore bank, DNA bank. National and international programmes for biodiversity conservation

Unit III: Megadiversity zones and biodiversity hotspots

Concepts, distribution and importance of megadiversity zones, Biodiversity hotspots, National and global red data lists, Categories of species and their management, Restoration of biodiversity, Acceleration of ecological succession, Reintroduction of biota. Methods for monitoring biodiversity trends, IPRs, Patent protection and Biopiracy

Unit IV: Bioprospecting

Concept of bioprospecting, importance of biodiversity: aesthetic, cultural and ecosystem services, biodiversity informatics, International efforts and issues of sustainability. Wildlife values and eco-tourism, wildlife distribution in India, problem in wildlife protection, role of WWF, WCU, CITES, TRAFFIC.

REFERENCES

1. Benny J. (2006). 'Environmental Science and Engineering', Tata McGraw-Hill, New Delhi.
2. Botkin, D. and Edward, K. (1997). Environmental Sciences, John Wiley & Sons, New York.
3. Chapman, J. L. and Reiss, M. J. (1998). Ecology: Principles and Applications. Cambridge University Press, UK.
4. Cunningham, W.P., Cooper, T.H. Gorhani, (2001). "Environmental Encyclopedia", Jaico Publication, House, Mumbai.
5. Gilbert M. Masters. (2004). 'Introduction to Environmental Engineering and Science', 2nd edition, Pearson Education.
6. Laladhas, K.P., Nilayangod, Preetha, V. Oommen, Oommen (Eds.) (2017). Biodiversity for Sustainable Development. Springer International.
7. Miller Jr., G.T. (1997). Environmental Science: Working With the Earth. Wadsworth
8. Odum, E.P., Odum, H.T. & Andrews, J. (1971). Fundamentals of Ecology. Philadelphia: Saunders. Publishing Company, Belmont, California
9. Wager, K.D. (1998). "Environmental Management", W.B. Saunders CO., Philadelphia, USA.

FOUNDATION COURSE IN ECOLOGY AND ENVIRONMENT

Unit I: Fundamentals of Ecology

Definition and subdivision of ecology, Autecology and Synecology, scope of ecology, Basic concepts in ecology, Terminologies in ecology, Organizational level of ecological systems.

Unit II: Environmental Factors

Definition of environmental factors, Types of environmental factors, Abiotic factors: Temperature, light, water, precipitation and wind. Shelford's law of Tolerance, Liebig's law of Minimum, Concept of limiting factors, Biotic factors.

Unit III: Ecosystem Ecology

Definition, Types of ecosystem, Terrestrial: forest and grassland, Aquatic: lotic and lentic, Structure of an ecosystem, Function of an ecosystem, Food chain: grazing and detritus and trophic level, Energy Flow Ecological pyramids: number biomass and energy.

Unit IV: Population and Community Dynamics

Definition, Characteristics of population: natality, mortality, Age distribution, dispersion, migration. Age structure of population, Ecological niche, Ecotone and Edge effect, Interactions between populations, Life history strategies (r and k species), Key stone species, flagship species. Definition of ecological succession, Characteristics of succession, General process, Significance of ecological succession, types of succession: xerosere and hydrosere, Concept of climax, IVI.

REFERENCES

1. Begon, M., Townsend, C.R. and Herper, J.L. (2005). Ecology: From Individuals to Ecosystems, 4TH Edition, John Wiley & Sons.
2. Botkin, D. and Edward, K. (1997). Environmental Sciences, John Wiley & Sons, New York.
3. Chapman, J. L. and Reiss, M. J. (1998). Ecology: Principles and Applications. Cambridge University Press, UK. Cunningham, W. P. and Cunningham, M. A. (2004).
4. Dash, M.C. and Dash, S.P. (2009). Fundamentals of Ecology. McGraw Hill Education.
5. Odum, E.P. (2005). Fundamentals of Ecology, 5th Edition, Cengage Learning Publication.
6. Principles of Environment Science. Enquiry and Applications. 2nd Edition. Tata McGraw Hill, New Delhi.
7. Raven, P. H., Berg, L.R. and Hassenzahl, D.M. (2008). Environment. 6th Edition. John Wiley & Sons., USA.
8. Sharma, P.D. (2000). Ecology & Environment, 7th Edition, Rastogi Publications, Meerut.
9. Singh, J.S., Singh, S.P. and Gupta, S.R. *Ecology, Environment and Resource Conservation*. Anamaya Publishers, New Delhi, India. 2006.
10. Smith, T.M. and Smith, R.L. (2015). Elements of Ecology. 9th Edition, Pearson Benjamin Cummings, USA.

ENVIRONMENTAL HEALTH AND TOXICOLOGY

Unit-I: Principles of toxicology

Environmental toxicology and its importance; Occurrence of Toxicants and their chronic and acute effects; Exposure, uptake, transportation, storage, metabolism and excretion of pollutants

Unit-II: Pollution and human health

Trace element deficiency and disorders; Occupational health hazards; Biogeochemical factors in environmental health; Epidemiological issues- Goiter, Fluorosis, Arsenic poisoning.

Unit-III: Biotransformation: Metabolism of Xenobiotics

Types and Mechanism of Biotransformation, Characteristics of Biotransformation, Consequence of Biotransformation: Biotransformation of Endogenous Substances, Activation of Xenobiotics, Factors Affecting Biotransformation, Induction, Genetic Polymorphisms.

Unit-IV: Genetic Toxicology

Carcinogenesis; Carcinogens, chemical carcinogenicity, mechanism of carcinogenicity, Oncogenes and tumour suppressor genes. Environmental carcinogenicity testing. Mutagenicity: Mutagens, Environmental mutagen testing- Bacterial mutagenesis assays, gene mutation chromosome damage assays, DNA damage and repair assays.

References

1. Ayres, J., (2009). Occupational industrial and environmental toxicology, 2nd edition
2. Chatterjee, P., Progress in predictive toxicology- Clayson, Munro, Shubik & Swenderg (eds.)
3. Landis, W., Sofield, R., Yu, M.H., Wayne G. Landis, Yu, S.M.H. Introduction to Environmental Toxicology: Molecular Substructures to Ecological Landscapes, Fourth Edition
4. Niesink, R., Hollinger, M.A., Vries, J.D. (1999). Toxicology: Principles and Applications.
5. Perk, Preventive and Social Medicine
6. Phillip. R.B. (2001).Ecosystems and human health: toxicology and environmental hazards. 2nd edition. Boca Raton: Lewis Publishers

ENVIRONMENTAL CHEMISTRY

Unit I: Chemistry of water and aquatic system

Stoichiometry, Gibb's energy, chemical potential, chemical equilibria, acid base reactions, solubility product, solubility of gases in water. The carbonate system; Chemistry of water, Properties of water and their significance, types, sources and consequences of water pollution, Physico chemical and bacteriological sampling and analysis of water quality. Water quality standards. Concept of DO, BOD, COD, sedimentation, coagulation, filtration, Redox potential, alkalinity, acidity, calcium and other metals in water, organic pollutants in sewage, soaps, oil and detergents, radionuclide in water

Unit II: Atmospheric chemistry

Particles, ions and radicals in the atmosphere. Natural and anthropogenic sources of pollution. Primary and Secondary pollutants. Transport and diffusion of pollutants. Oxygen and ozone chemistry. Chemistry of air pollutants, Photochemical smog. Methods of monitoring and control of air pollution- SO₂, NO_x, CO, SPM. Effects of pollutants on human beings, plants, animals and materials. Air quality Standards

Unit III: Soil and sediment geochemistry

Inorganic and organic components of soil, Weathering of rocks, rock forming minerals, Soil properties, acid-base and ion-exchange reaction in soil, Macro and micronutrients in soil, Nitrogen pathways and NPK in soils, Interior of the earth- minerals and rocks- earth processes- plate tectonics- sea floor spreading, mountain building, rock deformation.

UNIT IV: Toxic chemicals in the environment

Organic compounds: Hydrocarbons, Chemistry of hydrocarbons, phenols, chlorofluorocarbons, pesticides, chemical fertilizers, environmental effects, effects on macro and microorganisms. Gasoline lubricants and greases, Pesticides: Classification, degradation, analysis, pollution due to pesticides and heavy metals

REFERENCES

1. De, A.K. (2001). Environmental Chemistry. Wiley Eastern Ltd, New Delhi
2. Field, F.W. & Haines, P.J. (2000). Environmental Analytical Chemistry, Blackwell Science Ltd. USA.
3. Karikalan, V.L. (2002). Environmental Engineering. Dhanpati Rai & Co. (P) Ltd., Delhi.
4. Manahan, S.E. (1991). Environmental Chemistry. Lewis Publishers, Chelsea, Michigan.
5. O' Neill, P. (1993). Environmental Chemistry. Chapman and Hall, London.
6. Rao, C.S. (1991). Environmental Pollution Control Engineering. Wiley Eastern, New Delhi.
7. Sharma, B.K. and Kaur H. (1998). Environmental Chemistry. Goel Publishing House, Meerut.
8. Sodhi, G.S. (2002). Fundamental concepts of Environmental Chemistry, Narosa Publishing House, New Delhi.

ENVIRONMENTAL POLICIES AND LAWS

Unit I: Introduction to Environmental Laws

Environment protection- Issues and Problems; International and national efforts for environment protection; General principles in Environmental law: Precautionary principle; Polluter pays principle; Sustainable development

Unit II: Global Environmental Awareness

Brief introduction to International conferences and conventions on environmental protection: Stockholm Conference, Earth Summit, World Summit on Sustainable Development, Ramsar convention, Vienna convention, Montreal Protocol, Kyoto Protocol; Constitutional provisions of Constitution of India regarding Environment (Article 48A, 51A(g) and 253); Ecomark.

Unit III: Water, Air and Biodiversity related Laws

The Water (Preventions and Control of Pollution) Act, 1974; Water Cess Act, 1977; Air (Prevention and Control of Pollution) Act, 1981; Environmental Protection Act, 1986; Motor Vehicle Act, 1988 (Environmental aspects only); Coastal Regulation Zone (CRZ) Notification, 1991; Noise Pollution (Regulation and Control) Rules, 2000; Wildlife (Protection) Act, 1972 and amendment, 2002; Forest Conservation Act, 1980; Biological Diversity Act, 2002; Forest Rights Act, 2006.

Unit IV: Hazardous Waste Management Rules

Manufacture, Use, Import, Export & Storage of Hazardous Microorganisms & Genetically Engineered cells Rules, 1989; Public Liability Insurance Act, 1991; Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016; Bio-Medical Waste Management Rules, 2016; e-waste (Management) Rules, 2016.

REFERENCES

1. Deshai, B. (1994). Environmental Law of India, Lencern Book, New Delhi.
2. Divan S. and Rosencranz A. (2005). Environmental Law and Policy in India, 2nded., Oxford, New Delhi
3. Leelakrishnan P. (2008). Environmental Law in India, 3rd ed., Lexis Nexis, India.
4. Mehta, C.S. (1991). Environmental Protection and the Law, Ashish Publishing House, New Delhi.
5. Nath B., Hens, L., Compton, P. and Devuyt, D. (1998). Environmental Management in Practice, Vol I, Routledge, London and New York.
6. Singh, G. (2005). Environmental law in India, Mc Millan, New Delhi.
7. Upadhyay S. and Upadhyay V. (2002). Hand Book on Environmental Law- Forest Laws, Wildlife Laws and the Environment; Vols. I, II and III, Lexis Nexis- Butterworths-India, New Delhi.

PHYSICAL ENVIRONMENT

Unit-I: Atmospheric Environment

Atmosphere: composition and vertical distribution of temperature, earth and sun relationship, heat budget, scales of meteorology, hydrostatic equilibrium, lapse rates, vertical stability of atmosphere, clouds (classification and formation), winds, wind roses, Coriolis force, global pressure belt system and monsoons.

Unit-II: Aquatic and Terrestrial Environment

Global water balance. Ice sheets and fluctuations of sea levels. Origin and composition of sea water. Hydrological cycle. Inland water bodies (lakes, streams, rivers, estuaries and wetlands). Rocks; Igneous, sedimentary and metamorphic rocks, weathering, erosion, transportation and deposition of earth's material through running water, wind, glaciers. The land use plan, soil surveys in relation to land use planning, methods of site selection and evaluation.

Unit III: Introduction to Remote Sensing and GIS

Fundamental concepts of remote sensing and GIS, EMR spectrum, Radiation laws, Elements of photographic systems, aerial photo interpretation. Spectral reflectance, vegetation, soil and water. Transmittance, Absorbance. Application of remote sensing and GIS in environmental management (Land use; Wastelands; Forest, Water resources, Wildlife habitat)

Unit-IV: Global climate change

History of climate change, Milankovitch's theory of climate change, greenhouse gases and their effects, role of humans, urban climatology, climatic feedback mechanisms, and possible impacts of global climate change.

REFERENCES

1. Conte, D.J., Thompson, D.J., Moses, L.L (1994). Earth Science : A holistic approach
2. Davis, R.A. (1991). Oceanography: An introduction to the Marine Environment 2nd edition. Publisher: William C Brown
3. Gross, M.G., Gross, E. (1995). Oceanography: A View of the Earth 7th edition.
4. Gross, M.G. (1996). Oceanography. Wallace, J., Hobbs, W.P. Atmospheric Science-An introductory survey. 2nd edition.
5. Lutgens, F.K. Tarbuck, E.J. Tasa, D.J. The atmosphere: An introduction to Meteorology. 13th edition.
6. Ritchie, G. Atmospheric Chemistry (from the surface to the stratosphere) 1st edition.
7. Rothschild, L.J. (2012). Evolution on Planet Earth: The Impact of the Physical Environment. San Diego, California, USA
8. Geography of the Physical Environment (2017). Springer International Publishing AG.

ENVIRONMENTAL MICROBIOLOGY

Unit-I: General and Aquatic Microbiology

Classification, characteristics, occurrence and distribution of microorganisms. Microbial cultivation and growth. Microbial mats, Bio-films, Role of Microorganisms in Wastewater and Water Treatment; Bioassay tests for toxicity evaluation, Pathogens and Indicator microorganisms; Eutrophication of water bodies.

Unit-II: Soil microbiology

General characteristics and activities of microorganisms in surface soil, Mineralization and Immobilization of soil nutrients, Microbial degradation of cellulose, hemicelluloses and lignin. Microbes in Agriculture- Biological nitrogen fixation, bio-fertilizers, Mycorrhiza and their environmental significance. Microbe mediated C, N and S transformations.

Unit-III: Food microbiology

Food borne infections: bacterial (Clostridium, Salmonella, Shigella, Staphylococcus), Mycotoxins in food with reference to Aspergillus species. Genetically modified foods. Microbes in food production. Applications of microbial enzymes in food industry.

Unit-IV: Applied Environmental Microbiology:

Bioremediation: principle and mechanisms, types and environmental applications. Specific Processes: Biodegradation of pesticides and hydrocarbons, Bio-hydrometallurgy, Microbial Enhanced Oil Recovery, Biodegradable Plastics, Biosurfactants. Release of genetically engineered microbes and environmental risk.

REFERENCES

1. Gaudy, A.F. & E.T. (1980). Microbiological Methods for Environmental Scientists and Engineers, McGraw Hill.
2. Grainer, J.M. & Lynch, J.M. (1984). Microbial Methods for Environmental Biotechnology: Academic Press.
3. Madigan, M.T. & Martinko, J.M. (2006). Brock Biology of Microorganisms. Pearson Prentice Hall.
4. Maier, R.M., Pepper, I.L. & Gerba, C.P. (2000). Environmental Microbiology, Academic Press.
5. Parihar, P. & Parihar, L. (2008). Advances in Applied Microbiology. 1st Ed., Agrobios (India).
6. Pelezar, M.J. Jr., Chan, E.C.S and Kreig, N.R (1993). Microbiology, Tata McGraw Hill, Delhi.
7. Purohit, S.S. (2010). Microbiology Fundamentals and Applications, 6th Ed., Agrobios.
8. Stainer, R.Y., Adelberg, E.A. & Ingraham, J.L. (1977). General Microbiology, Macmillan Press.

GLOBAL ENVIRONMENTAL ISSUES

UNIT-I: Environmental Issues and Movements

Creation of UNEP and its role, UNFCCC, Convention on Climate Change, CoPs, CDM, Convention on Conservation of Antarctic Marine Living Resource, Global and national movements of Significance impact: Green Belt movement, Green Peace, Chipko movement, Narmada Bachao Andolan, *Urja gram*, *Beej Bachao Andolan*, Silent valley- Doon valley and related issues / case studies

UNIT-II: Climate change

Sea level Change- primary and secondary impacts- Adapting to Sea level changes. Global Warming and Greenhouse gases- Global and national scenario. National Action Plan on Climate Change (NAPCC), Intergovernmental Panel for Climate Change (IPCC), Climate Change and Biodiversity loss.

UNIT-III: Nuclear issues

Nuclear issues, Nuclear power, Nuclear weapons, Nuclear and radiation accidents, Nuclear safety, High-level radioactive waste management.

UNIT-IV: Contemporary issues

Green Buildings, Genetic pollution, Genetically modified food controversies, Intensive farming Monoculture, Health and Diseases- Epidemics and Famines.

REFERENCES

1. Asthana, D.K. and Asthana, M. (2003). Environment: Problems and Solutions, , S. Chand & Co., New Delhi
2. Burroughs, W.J. (2007). Climate Change: A Multidisciplinary Approach. 2nd Edition. Cambridge University Press.
3. Cunningham, W. P. and Cunningham, M. A. (2004) Principles of Environment Science. Enquiry and Applications. 2nd Edition, Tata McGraw Hill, New Delhi.
4. Divan, S. and Rosencranz, A. (2001). Environmental Law and Policy in India: Cases, Materials and Statutes, Oxford University Press, New Delhi.
5. Goel P. K and Sharma K. P. (1996). Environmental Guidelines and Standards in India, Techno Science Publications, Jaipur.
6. Harris, F. (2004). Global Environmental Issues. Wiley & Sons, Inc., USA.
7. McCormick, J. Reclaiming paradise: The Global Environmental Movement
8. Singh, J.S., Singh, S.P. and Gupta, S.R. (2006). Ecology, Environment and Resource Conservation. Anamaya Publishers, New Delhi, India.

ENVIRONMENTAL MANAGEMENT AND IMPACT ASSESSMENT

Unit I: Introduction to EIA and Environmental Planning

Origin, aims and needs of EIA, EIA guidelines 1994, EIA notification and amendments; Environmental Impact Assessment (EIA) as a tool in environmental management, EMS, ISO 14001. Baseline information and predictions (Land, water, atmosphere, energy etc.), Restoration and rehabilitation technologies.

Unit II: EIA Methodology

Types of Projects requiring Environmental Clearance, Types of EIA, Project screening, Scoping, Base-line study, Impact identification, Prediction and assessment of impacts, Mitigation measures. Public participation, review and decision making, Generic structure of EIA Document, Composition of EAC, SEAC, Benefits and future of EIA.

Unit III: Environmental Audit

Introduction, concepts, steps, methodology. Environmental Auditing: Procedure, Matrix methods and Batelle method of auditing, National Environmental Policies and guidelines for environmental audit in India, Environmental impact statement

Unit IV: Case Studies

Environmental Impact Assessment of major developmental projects – river valley projects, mining projects, thermal power plants, transport (rail, road highway), oil refineries and petrochemicals. Prediction and assessment of impacts on the biological, cultural and socio-economic environments

REFERENCES

1. Glasson, J. Therivel, R. and Chadwick, A. (2006). Introduction to Environmental Impact Assessment. Routledge, London.
2. Jain, R.K., Urban L.V. and Stacey, G.S. (1981). Environmental Impact Analysis: A New Dimension in Decision Making. Van Nostrand Reinhold Company, New York.
3. Kreske, D.L. (1996). Environmental Impact Statement: A practical guide for agencies, citizens and consultants. John Wiley and Sons Inc., New York.
4. Kulkarni, V.S., Kaul, S.N. and Trivedi, R.K. (2002). A Handbook of Environmental Impact Assessment. Scientific Publishers, India.
5. Petts, J. (2005). Handbook of Environmental Impact Assessment- Volume 1 and 2. Blackwell Publishers, UK.
6. Reddy, M.A. (2010). Textbook of Environmental Science & Technology, BS Publications.
7. Singh, P.P. and Sharma, S. (2004). Environment and Pollution Education. Deep and Deep Publication Pvt. Ltd, New Delhi.

ENVIRONMENTAL POLLUTION AND CONTROL

Unit-I: Waste water management

Primary treatment methods– screening, grit removal, primary sedimentation, secondary treatment methods, Activated sludge process, Trickling filters, Rotating biological contactors, Oxidation ponds and Lagoons. Advance waste water treatment, removal of nutrients and solids. Wastewaters reuse and sludge disposal, MINAS

Unit-II: Air Pollution control

Control methods for particulates-gravitational settling chambers, Centrifugal collectors, Wet collectors, Fabric filters, electro static precipitators. Control methods for gaseous pollutants-adsorption, absorption, condensation, combustion. High Volume Air Sampler, Major air pollutants in India.

Unit-III: Noise Pollution Control

Basics of sound, Sound propagation, Measurement of noise and indices, Effect of meteorological parameters on noise propagation. Noise control and abatement measures, Noise exposure levels and standards, Impact of noise on human health.

Unit-IV: Solid and Hazardous Waste Management

Sources, Chemical composition and Classification of solid wastes, Solid waste management options: Sanitary Landfill, Recycling, Composting, Incineration, Energy recovery options from organic wastes. Hospital waste management; Fly ash management, Municipal Solid waste. Classification of Hazardous wastes, Physico-chemical, Hazardous waste control and treatment, Different methods of disposal and management of hazardous wastes.

REFERENCES

1. Dara, S.S. (1995). A Text Book of Environmental Chemistry and Pollution Control, S. Chand, and Co. Ltd., New Delhi.
2. De, A.K. (1990). Environmental Chemistry, 2nd edition. Wiley Eastern Ltd. New Delhi.
3. Gilbert M. (2007). An Introduction to Environmental Engineering and Science, Prentice Hall, New Delhi.
4. Harrison, R.M. (2014). Pollution: Causes, Effects and Control. 5th Edition, RCS Publishing.
5. Krishnan Kannan Ed. (1994). Fundamentals of Environmental Pollution, S. Chand & Company Ltd., Ramnagar, New Delhi.
6. Manahan S.E. (2000). Fundamentals of Environmental Chemistry, Boca Raton: CRC Press.
7. Metcalf & Eddy, (1995). Waste Water Engineering, Tata Mc-Graw Hill Publishers, 3rd Edition.
8. Rao, C.S. (2001). Environmental Pollution Control Engineering, New Age International Publication, New Delhi
9. Spellman, F.R. (2017). The Science of Environmental Pollution. Taylor & Francis, CRC Press.
10. Trivedi, R. K. and Goel, P. K. (1995). An Introduction to Air Pollution, Techno Science Publications, Jaipur.

WATER QUALITY MANAGEMENT

UNIT I: Introduction

Linking water quality & health; impurities in water, their significance and estimation techniques; water borne diseases; standards of potable water. Impact of water pollutants on environment; self-purification of waste in streams; zones of purification; eutrophication.

UNIT II: Water treatment

Aeration and types of aerators; purpose and mechanism of flocculation; coagulants used in water treatment; factors influencing coagulation; estimation of coagulant dose; types of flash mixers and flocculators; sedimentation; sedimentation tanks; filtration; types and design of filters; operational issues in filtration; chemical and non-chemical methods of disinfection; factors effecting efficiency of filtration; chick's law, tertiary treatment methods for removal of colour, salinity, hardness, fluorides, Arsenic, iron and manganese (using adsorption, RO; Electro-dialysis; ion-exchange; chemical; and distillation techniques).

UNIT III: Wastewater treatment

Physical treatment methods-screen chamber; grit separators; primary and secondary settling tanks. Biological treatment: Biology of sewage treatment; BOD growth curve and analysis; estimation of BOD rate constant; types of biological treatment processes; process description and design principals; removal of nitrogen and phosphorus. Sludge stabilization and dewatering systems; Low cost sewage treatment technologies-septic tanks; reed bed; oxidation ponds and lagoons.

UNIT IV: Water resources and quality management in India

Water availability; water stress index; status and trend of surface and groundwater; issues and policy interventions; pollution of rivers, lakes and ground water; GAP and National River Action Programme; role of national and international agencies in water health and sanitation.

REFERENCES

1. Benefield, L.D. and Randoll (1988). Biological Treatment Processes, Prentice Hall Inc., New York
2. Birde, G.S. and Birde, J.S. (2004). Water Supply and Sanitary Engineering, 7th ed., New Delhi, Dhanpat Rai Publishing.
3. Chatterjee, A.K. (2010). Water Supply, Waste Disposal and Environmental Engineering, 8th ed., New Delhi, Khanna Publisher.
4. Gurnham, C.F. (2004). Principle of Industrial Waste Treatment. John Wiley & Sons Inc, New York.
5. Hammer, M.J. and Hammer Jr, M.J. (2000). Water and Wastewater Technology. 3rd ed. Prentice Hall of India.
6. Kumar, R and Singh, R.N. (2006).Municipal Water and Wastewater Treatment. Capitol Pub. Co., New Delhi.
7. Metcalf & Eddy Inc. Revised by Tchobanoglous, G., Burton, F. L. and Stensel, H. D. (2002). Wastewater Engineering Treatment and Reuse 4th ed. Tata McGraw-Hill Publishing Company Limited, New Delhi.

NATURAL DISASTER MANAGEMENT

Unit-I Introduction to Hazards

Hazard Classification – Natural hazards and Technological hazards, Effects of hazards, Vulnerability and susceptibility of hazards, Assessing hazards and risks, Hazard prediction and warning, A brief introduction to biological hazards- Biological warfare, Anthrax.

Unit–II Earthquakes and Landslides and Volcanoes

Earthquakes - Types and Distribution of earthquakes, Prediction and control of earthquakes, Tsunami, mass movements; types, affecting factors, prediction, prevention & control and effect of mass movements. Volcanoes-Distribution, types, eruption processes, Factors, Products.

Unit-III Water related hazards

Different kinds of floods, Factors leading to floods, Factors affecting floods, Floods and their associated hazards, Flood control measures, Prediction of floods. Factors leading to drought, drought consequences, strategies for drought mitigation, Desertification – Factors causing desertification, famine, El Nino and their effects.

Unit- IV Weather related Hazards

Effects of cyclones, genesis of a cyclone, Behavior of a cyclone and their forecast, Factors affecting cyclone hazards, Structure of a tropical cyclone, Size of tropical cyclones, Cyclone risk and mitigation strategies, Storm surge, Hurricane, cyclones and tornadoes, thunderstorms, lightning.

REFERENCES

1. Abbott, Patrick L. 2004. Natural disasters. 4th ed. Boston, McGraw-Hill Higher Education. Alexander, David. 2000. Confronting catastrophe: new perspectives on natural disasters. New York, Oxford University Press.
2. Allison, I. S. and Palmer, D. F. 1980. Geology, the science of a changing Earth. VII Edition. McGraw-Hill Inc.
3. Cesare Emiliani 1992. Planet Earth - Cosmology, geology and the evolution of life and the environment. Cambridge University press U.K.
4. Robinson, A.G. 2002. Earthshock: hurricanes, volcanoes, earthquakes, tornadoes, and other forces of nature. Rev. Ed. New York,
5. Thames & Hudson, 2002. Smith, Keith. 2002. Environmental hazards: assessing risk and reducing disaster. 3rd ed. London, New York, Routledge.

ENVIRONMENTAL BIOTECHNOLOGY

Unit I: Basic techniques in genetic engineering

Brief account of the structure and functions of DNA and RNA, Restriction Endonucleases, DNA Ligase, Southern blotting and hybridization, Recombinant DNA Technology, Gene identification and isolation; Genomic library, use of reverse-transcriptase, cDNA library, Environmental Genomics/Metagenomics.

Unit II: Cloning

Cloning Vectors, (Plasmid, Cosmic, Phasmid, Bacterial Artificial Chromosome, Yeast Artificial Chromosome), Introduction of genes into new hosts using plasmid and phage vector. Gene transfer methods in bacteria and plants, PCR, Chemical synthesis of DNA, DNA ligation, Genetically Modified Organism (GMOs) and their impact on the environment. Xenobiotics compound: persistence and biomagnification

Unit III: Fermentation technology

Basics of Bioreactor, Use of natural and genetically engineered micro-organisms from extreme environment like thermophiles, alkalophiles, acidophiles and halophiles in industrial applications. Production of enzymes like cellulase, proteases amylases and acetic acid production, Renewable and alternative sources of energy; production of bio-hydrogen, biodiesel, bioethanol etc.

Unit IV: Biofertilizers and biopesticides

Biofertilizers application and future prospects, Biopesticides, Properties of *Bacillus thuringiensis*, Symbiotic Nitrogen fixation, Biochemistry of nitrogenase, Genetics of nitrogen fixation, regulation of *nif* gene expression, Plant-Incorporated Protectants (PIPs). Bioremediation of agricultural and industrial waste containing heavy metals and dyes using microbes.

REFERENCES

1. Alexander, M. (1999). Biodegradation and Bioremediation, 2nd edition, Academic Press.
2. Brown T. A. (2012) Gene Cloning and DNA Analysis: An Introduction 6th Edition, Wiley.
3. Fulekar, M.H. (2010). Environmental Biotechnology - Theory and Application –: CRC Press. Science Publisher, USA.
4. Gupta, P.K. (2010). Elements of Biotechnology. 2nd edition. Rastogi Publications.
5. Kumar, R., Sharma, A.K., Ahluwalia, S.S. (2017). Advances in Environmental Biotechnology. Springer Nature, Singapore.
6. Manahan, S.E. (1997). Environmental Science and Technology. Boca Raton. FL: Lewis Publishers, New York.
7. Purohit, S.S. and Mathur, S.K. (1990). Fundamentals of Biotechnology, Agro Botanical Publishers, New Delhi India.
8. Rittman, B. and McCarty, P. L. (2000). Environmental Biotechnology: Principles and Applications. 2nd Edition. Tata McGraw-Hill, USA.
9. Thakur, I.S. (2006). Environmental Biotechnology: Basic Concepts and Applications. I.K International Publishing House Pvt Ltd.
10. Wainwright, M. (1999). An Introduction to Environmental Biotechnology. Springer US Publisher.

FOREST AND WILDLIFE ECOLOGY

Unit-I: Forest

Types and composition of forests of India, Structural organization of forest ecosystems, Primary production in different ecosystems and methods of measurement of primary production, Social forestry: Objectives, scope and necessity, Agroforestry, Extension forestry, *Eucalyptus* dilemma, people's participation, Roles on NGOs.

Unit-II: Silvicultural practices

Silvicultural principles and practices, Impact of deforestation and shifting cultivation on forest ecosystems. Forest management: Objectives and principles, Techniques, Sustainable yield relation, Biodiversity and Forest.

Unit-III: Values of wild life

Concept of wildlife, Role of wildlife in nature, Factors influencing wildlife management such as habitats, population, behavior, food-habits, health, etc., Common flora and fauna of India. Tools for data collection and analysis. Preservation of Breeding Stock; Artificial stocking; Habitat Improvement, Game Farming.

Unit-IV: Wildlife protection

Indian wildlife IUCN Categories, National Parks, Wildlife Sanctuaries, Biosphere Reserves and Zoos in India, Ecological basis of wild life conservation and management, Special projects for endangered species (Project tiger, Gir lion Sanctuary Project, Crocodile breeding project, sea turtle conservation), International trade of wildlife, Animal cruelty: causes and prevention, Wild life and range management, Management of Fire, Role of NGO's in wildlife and forest life and range management, Role of local communities in wildlife management.

REFERENCES

1. Gibbs, J.P., Malcolm, L.H. and Sterling, E.J. (2008). Problem-Solving in Conservation Biology and Wildlife Management, 2nd Edition, Wiley-Blackwell.
2. Jain, A. K. (1989). Forests in India, Vorha Publication, Allahabad.
3. Oliver, S. O. and Daniel, D. C. (1990). Natural Resource Conservation : Management for a Sustainable future. Prentice Hall International, New Jersey.
4. Raven, P. H., Berg, L.R. and Hassenzahl, D.M. (2008). Environment. 6th Edition. John Wiley & Sons., USA.
5. Sharma, P.D. (2000). Ecology & Environment, 7th Edition, Rastogi Publications, Meerut.
6. Sondhi, S. (2012). Protected Animals of India. The Energy and Resources Institute, TERI.
7. Subramanian (2000). A Text book in Environmental Sciences: Narosa Publishing House, New Delhi.

Course No:	Course Name: Environmental Science				Course Code:		
Batch: 2021 Onwards	Programme: Integrated B.Sc.- M.Sc.	Semester: II	L	T	P	Credits	Contact Hrs. per Week: 04
			4	0	0		4
Total Evaluation Marks: 100		Examination Duration: 3 Hrs.					
CIE: 30 Marks		Pre-requisite of course: None					
TEE: 70 Marks							
Course Objective	<i>To aware the students the need for sustainable development, problems of pollution, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer, loss of biodiversity and need of worldwide efforts in its conservation.</i>						
Course Outcomes:	<p>After completing this course, student is expected to learn the following:</p> <p>CO1: The students will get the knowledge about trends of biological diversity and conservation strategies and thereafter be able to create awareness for its conservation and development.</p> <p>CO2: The understanding of issues concerning different natural resources will be helpful to find scientific solution based on participatory approach.</p> <p>CO3: To know about the local environmental issues, movements and an important role to minimize the impact of these aspects.</p> <p>CO4: Knowledge about the types of pollution and pollution control.</p>						
COURSE SYLLABUS							
NOTE:							
i) Question no. 1 is compulsory and to be set from the entire syllabus. It will have four sub-parts and students need to answer any two. Each part carries three and half marks.							
ii) Question nos. 2 to 5 are to be set from all four units one from each. Every question will have three sub-parts and students need to answer any two sub-parts of each question. Each part carries three and half marks.							
Unit No.	Contents						Contact Hrs.
I	INTRODUCTION TO ENVIRONMENTAL SCIENCES Definition, scope and importance of the environmental science, Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems.						15
II	ECOSYSTEM						15

	Introduction, kinds of ecosystem, structure and functions, abiotic and biotic component, Ecological energetics, Energy flow models, Food chain and Food web, Ecological Pyramids-types, Ecological succession, Introduction, types, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems.	
III	BIODIVERSITY AND ITS CONSERVATION Introduction – Definition, value and types: genetic, species and ecosystem diversity. Bio-geographical classification and Hot-spots of India. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation.	15
IV	ENVIRONMENTAL ISSUES AND POLICIES Definition, cause, effects and control measures of Air, Water, Soil, Marine and Noise pollution. Solid Waste Management: Causes, effects and control measures of wastes. Seventeen Sustainable Developmental Goals, Environment Protection Act, Air Act, Water Act, Wildlife Protection Act, Forest Conservation Act, Public awareness.	15
Suggested Readings:		
<ol style="list-style-type: none"> 1. D. Thangadurai, G. Ching, S. Jeyabalan, and S. Islam Biodiversity and Conservation: Characterization and Utilization of Plants, Microbes and Natural Resources for Sustainable Development and Ecosystem Management. United States: Apple Academic Press, 2019 2. I. Khan, Forest Governance and Sustainable Resource Management. SAGE Publications. India, 2019 3. P. D. Sharma, Ecology and Environment. 13th Edition, Rastogi Publications, 2017 4. G. Cao, R. Orru, Current Environmental Issues and Challenges. 14th Edition; Springer, 2014 5. D. Ginley, D. Cahen, Fundamentals of Materials for Energy and Environmental Sustainability. Cambridge University Press, 2011 6. R. K. Trivedi, Handbook of Environmental Laws, Rules Guidelines, Compliances and Standards, 3rd Edition. BS Publications, 2010 7. M. C. Dash, S. P. Dash, Fundamentals of Ecology. 3rd McGraw Hill Education, 2009 8. W. P. Cunningham, M. A. Cunningham, Principles of Environment Science. Enquiry and Applications. 5th Edition. Tata McGraw Hill, New Delhi, 2008 9. J. Gibbs, L. Malcolm, J. Sterling, Problem-Solving in Conservation Biology and Wildlife Management. 2nd Edition, Wiley-Blackwell, 2008 10. M. Gilbert, An Introduction to Environmental Engineering and Science, Prentice Hall, New Delhi, 2007 11. E. P. Odum, W. Barrett, Fundamentals of Ecology. 5th Edition, Cengage Learning, 2005 12. E. Bharucha, The Biodiversity of India, Mapin Publishing, 2002 		

Course No: CH-45	Course Name: Green Chemistry				Course Code: SBS CH 010303 DCE 2002			
Batch: 2021 Onwards	Programme: M.Sc. Chemistry	Semester: III	L 2	T 0	P 0	Credit 2	Contact Hrs. per Week: 02	Total Hrs.: 30
Total Evaluation Marks: 50		Examination Duration: 2Hrs.						
CIE: 15 Marks		Pre-requisite of course: Basic knowledge of writing balanced chemical reactions. Basic understanding of nature of solvents, catalysts, chromatography and electromagnetic spectrum.						
TEE: 35 Marks								
Course Objectives	<i>To provide the basic knowledge of Green Chemistry and its applications in the field of chemical sciences.</i>							
Course Outcomes:	After completing this course, student is expected to learn the following: CO1: Basic understanding of green chemistry CO2: Use of greener and renewable catalysts and their applications CO3: Skills for analyzing and developing new sustainable methods CO4: Skills for developing industrially important methods CO5: Development of alternate and new eco-friendly synthetic pathways to chemicals CO6: Use of advanced and recent green technologies in organic synthesis							
COURSE SYLLABUS								
NOTE:								
i) Question no. 1 is compulsory and to be set from the entire syllabus. It will have four sub-parts and students need to answer any two. Each part carries three and half marks.								
ii) Question nos. 2 to 5 are to be set from all four units one from each. Every question will have three sub-parts and students need to answer any two sub-parts of each question. Each part carries three and half marks.								
Unit No.	Contents							Contact Hrs.
I	INTRODUCTION TO GREEN CHEMISTRY Green chemistry history, needs and goals. Limitation/Obstacles in pursuit of the goals of green chemistry. Opportunities for next generation designer materials to create safer future. Twelve principles of Green Chemistry and their illustrations with examples.							7
II	GREEN CATALYSIS AND RENEWABLE RAW MATERIALS Heterogeneous catalysis: Use of zeolites, silica, alumina, clay, polymers, cyclodextrin and supported catalyst; Phase-transfer catalysis; Biocatalysis using enzymes; Biomass conversion to fine chemicals.							8
III	GREENER SOLVENTS Reactions under aqueous medium: Enhancement of selectivity, efficiency and industrial applicability. Ionic liquids; Supercritical fluids; Solvent free reactions in solid and liquid phase; Alternatives in extraction and chromatography.							7

IV	<p>GREEN TECHNOLOGY AND FUTURE TRENDS IN GREEN CHEMISTRY</p> <p>Microwave and Ultrasound assisted reactions; photochemical reactions using sunlight; Flow techniques; combinatorial green chemistry.</p> <p>Green synthesis of ibuprofen and adipic acid (traditional vs green ones).</p>	8
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Suggested Readings:

10. G. Brahmachari, Catalyst-free Organic Synthesis. *Royal Society of Chemistry*, 2018.
11. M. Lancaster, Green Chemistry: An Introductory Text, 3rd Edition. *Royal Society of Chemistry*, 2016.
12. F. M. Kerton, Alternative Solvents for Green Chemistry. *Royal Society of Chemistry*, 2013.
13. R. A. Sheldon, I. Arends and U. Hanefeld, Green Chemistry and Catalysis, 1st Edition. *Wiley-VCH*, 2007.
14. M. A. Ryan and M. Tinnes, Introduction to Green Chemistry. *American Chemical Society*, 2003.
15. P. T. Anastas and J. C. Warner, Green Chemistry: Theory and Practice. *Oxford University Press*, 1998.

Environmental Physics

Course Code: SPMS PHY 01 202 GEC 3104

Introduction to Energy:

Importance of energy in science and society. Types of energy (mechanical, heat, chemical, nuclear, electrical). Law of conservation of energy. Energy transformations. Mechanical energy: force, work, kinetic and potential energy, PE diagrams, conservation of mechanical energy, bound systems. Electricity Basics.

Heat Energy and Kinetic Theory:

Heat and Temperature. Internal Energy, Specific Heat. Ideal gas equation. Kinetic theory interpretation of pressure and temperature. Work, heat, and the first law of thermodynamics. Adiabatic lapse rate. Radiant energy. Blackbody radiation

Energy and Climate Change:

Energy balance of the Earth. Greenhouse effect. Climate feedbacks (water, clouds, ice albedo). Global Climate Models. Evidence for climate change. Paleo-climate. Climate change impacts. Climate change mitigation. Target CO₂ levels.

Energy Source:

Chemical energy. Energy in biology, photosynthesis, respiration. Energy use in the human body, energy content of food. Fossil fuels and their origin (coal, oil, natural gas). Problems with fossil fuels, greenhouse pollution, peak oil. Alternatives to fossil fuels. Alternative energy resource: Wind energy, energy from water on land, ocean energy. Biomass and other sources.

Thermal Aspect of Energy Conservation:

Heat engines and the second law of thermodynamics. The Carnot cycle. Applications of the second law to various energy transformation processes: heat pumps and refrigerators; different engine cycles. Entropy and disorder.

References:

- R. A. Hinrichs and M. Kleinbach**, Energy, Its Use and the Environment, Brooks Cole.
- C. W. Rose**, An Introduction to the Environmental Physics of Soil, Water and Watersheds, Cambridge University Press.
- P. Hughes, N. J. Mason**, Introduction to Physics: Planet Earth, Life and Climate, Taylor & Francis.
- J. Monteith, M. Unsworth**, Principles of Environmental Physics: Plants, Animals and the Atmosphere, Elsevier.
- Egbert Boeker & Rienk Van Groundelle**, Environmental Physics (John Wiley).
- J.T.Hougtyion**, The Physics of Atmosphere (Cambridge University Press, 1977).
- J.T. Widell and J. Weir**, Renewable Energy Resources (Elbs, 1988).
- Sol Wieder**, An Introduction of Solar Energy for scientists and Engineers (John Wiley 1982).
- R.N. Keshavamurthy and M. Shankar Rao**, The Physics of Monsoons (Allied Publishers 1992).
- K.L.Kumar**, Engineering Fluid Mechanics (S.Chand, 1994).
- Landau & Lifshitz**, Fluid Mechanics, Pergamon Press (2000).

Course No: CC 2	Course Name: Introduction to Climatology				Course Code: SBS GEO 1 1 02 C 3104		
Batch: 2021-2023	Programme: M.Sc. Geography	Semester: I	L 3	T 1	P 0	Credits 4	Contact Hrs per Week: 4 Total Hours: 60
Total Evaluation Marks: 100		Examination Duration: 3 hours					
CIE: 30 Marks		Pre-requisite of course: Basic knowledge of Air Masses, World Climatic zones and Climate change.					
TEE: 70 Marks							
Course Objective	Developing the basic concept of climatology and understanding about atmosphere and various atmospheric processes with the help of generic theories and understanding climatic classification, its changes and disaster with a knowledge of climatic conventions and policies.						
Course Outcomes:	<p>After completing this course, student is expected:</p> <p>CO1: To understand the concepts of climatology. CO2: To understand the concepts of radiation, temperature, stability and precipitation. CO3: To understand the concept of ENSO and its effect. CO4: To learn the world climatic classification. CO5: To comprehend recent trend and application of various themes of Climatology. CO6: To understand various climatic hazards along with the concept of climate change.</p>						
COURSE SYLLABUS							
NOTE: Eight questions will be set, two from each of the UNIT. The candidates are required to attempt any five questions in all selecting at least one question from each section. All questions carry equal marks. Unit IV will be taught via online mode.							
Unit No.	Content of Each Unit					Hours of Each Unit	
I	CONCEPT, SCOPE AND THEORIES [Course Outcome (s) No.: 1 & 2] Meaning and Scope of Climatology; Composition and Structure of Atmosphere; Radiation Laws: Wave Nature, Particle Nature, Stefans-Boltzman & Weins Law; Solar Constant; Process of Precipitation; Adiabatic Temperature Change; Stability and Instability; Theories of Origin of Precipitation and Related Forms.					15	
II	CIRCULATION PROCESS [Course Outcome (s) No.: 3] Tricellular Meridional Circulation and Jet Stream; Walker Circulation and El-Nino-Southern Oscillation (ENSO); Air Masses; Fronts; Cyclones: Tropical and Temperate; Anticyclones.					15	

III	<p>WORLD CLIMATE CLASSIFICATION AND HEAT BUDGET</p> <p>[Course Outcome (s) No.: 4]</p> <p>World Climatic Classifications: Koppen and Thornthwaite; Biomes; Insolation and Heat Budget; Weather Analysis, Forecasting and Modification.</p>	15
IV	<p>APPLIED CLIMATOLOGY AND CLIMATE CHANGE</p> <p>[Course Outcome (s) No.: 5 & 6]</p> <p>Climatic Change: Causes and Theories; Global Warming: Causes, Effects and its Evidences; Atmospheric Hazards and Disasters: Cloud-Bursts, Glacial Lake Outburst Flood (GLOF); Applied Climatology; International Programmes and Policies- Brundtland, Kyoto, Agenda-21, SDGs and Paris Agreement.</p>	15

Suggested Readings:

1. Lal, D.S. (2020). **Climatology**. Sharda Pustak Bhawan, Allahabad.
2. Singh, S. (2020). **Climatology**. Pravalika Publication, Allahabad.
3. Singh, S. (2020). **Jalvayu Vigyan**. Pravalika Publication, Allahabad.
4. Oliver, J.E. and Hidore, J.J. (2003). **Climatology: An Atmospheric Science**. Pearson Education Private Ltd, Patparganj, Delhi.
5. Critchfield, H.J. (2002). **General Climatology**. Prentice-Hall of India, New Delhi.
6. Barry, R.G. and Carleton, M. (2001). **Synoptic and Dynamic Climatology**. Routledge, London.
7. Chorley, R.J. (2001). **Atmosphere, Weather and Climate**. Methuen, London.
8. Robinson, P. J. and Henderson, S. (1999). **Contemporary Climatology** (2nd edition). Pearson Education Ltd., Harlow, UK.
9. Singh, M.B. (1999). **Jalvayu Avam Jal Vigyan**. Tara Book Agency, Varanasi.
10. Kendrew, W.C. (1998). **Climatology** (5th edition). Edward Arnold, London.
11. Singh, M.B. (1998). **Jalvayu Avam Samudra Vigyan**. Tara Book Agency, Varanasi.
12. Das, P.K. (1987). **Monsoons**. National Book Trust, New Delhi.
13. Griffith, J.F. and Driscell, D.M. (1982), **Survey of Climatology**. Charles Merrill, New York.
14. Trewartha, G.T. (1981). **An Introduction to Climate**. McGraw Hill, New York.
15. Finch, J. C. and Trewartha, G. T. (1937). **Elements of Weather and Climate**. Prentice-Hall, London.

Course No: GEC 1	Course Name: Climate Change Vulnerability and Adaptation				Course Code: SBS GEO 1 1 01 GE 3104		
Batch: 2021-2023	Programme: M.Sc. Geography	Semester: I	L 3	T 1	P 0	Credits 4	Contact Hrs per Week: 4 Total Hours: 60
Total Evaluation Marks: 100		Examination Duration: 3 hours					
CIE: 30 Marks		Pre-requisite of course: Basic knowledge about Global warming, Concept of Biodiversity and Policies related to Environment.					
TEE: 70 Marks							
Course Objective	Understanding various dimensions of climate change and adaptability. Learning the detailed analysis of vulnerability and its impacts. Understanding of the concept of mitigation and planning.						
Course Outcomes:	<p>After completing this course, student is expected:</p> <p>CO 1: To understand the concept of global warming, climate change and related issues. CO 2: To learn the concept of climochronology and climate change assessment. CO 3: To know the impact of climate change and adaptation strategies. CO 4: To understand the concept of ecosystem and biodiversity. CO 5: To know about the in-depth knowledge of vulnerability of flora and fauna. CO 6: To understand the role of policies and organizations in climate change mitigation.</p>						
COURSE SYLLABUS							
NOTE: Eight questions will be set, two from each of the UNIT. The candidates are required to attempt any five questions in all selecting at least one question from each section. All questions carry equal marks. Unit IV will be taught via online mode.							
Unit No.	Content of Each Unit					Hours of Each Unit	
I	CONCEPTS OF CLIMATE CHANGE AND GLOBAL WARMING: [Course Outcome (s) No.: 1 & 2] Climate Change: Understanding Climate Change; Evidences of Global Warming and Climate Change; Climochronology; Green House Gases and Global Warming; Global Climatic Assessment- IPCC.					15	
II	CLIMATE CHANGE VULNERABILITY: [Course Outcome (s) No.: 3 & 4] Climate Change and Vulnerability: Physical Vulnerability, Economic Vulnerability, Social Vulnerability, Vulnerability of Natural Environment and Associated Services; Natural Ecosystems and Biodiversity; Agriculture, Fisheries and Forestry; Vulnerability of Water Resources.					15	

III	<p style="text-align: center;">CLIMATE CHANGE: IMPACTS & ADAPTATION</p> <p>[Course Outcome (s) No.: 5] Impact of Climate Change: Agriculture and Water, Flora and Fauna, Human Health; Adaptation and Mitigation to Climate Change; Global Initiatives with Particular Reference to South Asia; Adaptation Strategies with Special Reference to India.</p>	15
IV	<p style="text-align: center;">CLIMATE CHANGE: POLICIES & ORGANIZATIONS</p> <p>[Course Outcome (s) No.: 6] Climate Change Policy Framework: Important National and International Initiatives, Kyoto Protocol, Paris Agreement, UNFCCC, NAPCC, INDCS.</p>	15

Suggested Readings:

1. Mishra, R.K, Singh, R.B. and Dubey, Anupama (2021). **Sustainable Climate Action and Water Management**, Springer.
2. Singh, R.B., Mal, Suraj, and Huggel, C. (2018). **Climate Change, Extreme Events and Disaster Risk Reduction**. Springer, pages 309, Switzerland.
3. IPCC. (2014). **Climate Change 2014: Impacts, Adaptation, and Vulnerability**. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. NY, USA. Cambridge University Press, Cambridge, United Kingdom and New York
4. Singh, M., Singh, R.B., and Hassan, M.I., (Eds.) (2014). **Climate change and biodiversity**, Proceedings of IGU Rohtak Conference (Volume 1). Advances in Geographical and Environmental Studies, Springer
5. Singh, R.B. and Mal, Suraj (2009). **Environmental Change and Biodiversity**, Rawat Publication, Jaipur.
6. OECD. (2008). **Climate Change Mitigation: —What do we do?** (Organisation and Economic Co-operation and Development).
7. IPCC. (2007). **Climate Change 2007: Impacts, Adaptation and Vulnerability**. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. NY, USA: Cambridge University Press, Cambridge, United Kingdom and New York.
8. UNEP. (2007). **Global Environment Outlook: GEO4: Environment for Development**. Nairobi, Kenya: United Nations Environment Programme.
9. Sen, Roy, S., and Singh, R.B., (2002). **Climate Variability, Extreme Events and Agricultural Productivity in Mountain Regions**. Oxford & IBH Pub, Delhi
10. Singh, Rana P.B. (ed.) (1993). **Environmental Ethics: Discourses and Cultural Traditions**: National Geographical Society of India, BHU, Varanasi.
11. Singh, S. N. (1993). **Elements of Environmental Geography and Ecology (in Hindi)**, Tara Book Agency, Varanasi
12. Singh, R. B. (ed.) (1990). **Environmental Geography**. Heritage Publication, New Delhi.
13. Singh, O., Kumra, V.K. and Singh, J. (1988). **India's Urban Environment. Pollution, Perception and Management**. Tara Book Agency, Varanasi.
14. Khoshoo, T. N. (1981). **Environmental Concerns and Strategies**. Ashish Publishing House, New Delhi.
15. Odum, E.P. (1975). **Ecology**. Rowman and Littlefield, Lanham USA.

Course No: GEC 2	Course Name: Natural Hazards and Disaster Management				Course Code: SBS GEO 1 1 02 GE 3104		
Batch: 2021-2023	Programme: M.Sc. Geography	Semester: I	L 3	T 1	P 0	Credits 4	Contact Hrs per Week: 4 Total Hours: 60
Total Evaluation Marks: 100		Examination Duration: 3 hours					
CIE: 30 Marks		Pre-requisite of course: Basic knowledge of natural hazards and disaster management.					
TEE: 70 Marks							
Course Objective	<i>The course is intended to provide a general concept in the dimensions of disasters caused by nature beyond the human control as well as the disasters and environmental hazards induced by human activities with emphasis on disaster preparedness, response, recovery, planning and management.</i>						
Course Outcomes:	<p>After completing this course, student is expected:</p> <p>CO1: To understand the basic concept of different types of natural hazards and disasters.</p> <p>CO2: To understand the disaster preparedness and response strategy and role of ICT in disaster management.</p> <p>CO3: To know the role of various stakeholders in planning policies.</p> <p>CO4: To learn the concept of recovery and rehabilitation.</p> <p>CO5: To understand the national disaster management policy.</p> <p>CO6: To know the role of geospatial technologies in disaster management.</p>						
COURSE SYLLABUS							
NOTE: Eight questions will be set, two from each of the UNIT. The candidates are required to attempt any five questions in all selecting at least one question from each section. All questions carry equal marks. Unit IV and few topics from Unit II will be taught via online mode.							
Unit No.	Content of Each Unit					Hours of Each Unit	
I	<p>BASIC CONCEPTS [Course Outcome (s) No.: 1&2] Concept of Hazards, Risk, Vulnerability, Disaster and Resilience; Types of disaster: Natural - Flood, Drought, Landslide, Earthquake, and Avalanche; Manmade Disaster – Nuclear, Chemical and Biological.</p>					15	
II	<p>DISASTER PLAN AND PROGRAMMES [Course Outcome (s) No.: 2 & 3] Disaster Preparedness: Concept, Plan, Prediction, Early Warning System, Role of ICT, National and International Programmes and Policies, NGOs/Civil Societies; Disaster Responses: Role of Multiple Stockholders, Psychological and Medical Health Responses.</p>					15	

III	<p>POST DISASTER PLANNING [Course Outcome (s) No.: 4 & 5] Reconstruction and Rehabilitation as a Means of Development, Damage Assessment, Long Term Recovery and Counter Disaster Planning.</p>	15
IV	<p>DISASTER POLICY, MANAGEMENT AND GEOSPATIAL TECHNOLOGY [Course Outcome (s) No.: 6] National Disaster Management Policy; Role of Remote Sensing, GIS and GNSS in Disaster Management.</p>	15

Suggested Readings:

1. Kapur, A. (2010) **Vulnerable India: A Geographical Study of Disasters**, Sage Publication, New Delhi.
2. Modh, S. (2010) **Managing Natural Disaster: Hydrological, Marine and Geological Disasters**, Macmillan, Delhi.
3. Singh Jagbir (2007) “**Disaster Management Future Challenges and Oppurtunities**”, 2007. Publisher I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
4. Srivastava, H. N. (2007). **Coastal Hazards, (Cyclone, Tsunami, and other Disasters)**. National Book Trust of India, New Delhi.
5. Singh, R. B. (ed.), (2006) **Natural Hazards and Disaster Management: Vulnerability and Mitigation**, Rawat Publications, New Delhi.
6. Singh, R.B. (2005) **Risk Assessment and Vulnerability Analysis**, IGNOU, New Delhi. Chapter 1, 2 and 3
7. Stoltman, J.P. et al. (2004) **International Perspectives on Natural Disasters**, Kluwer Academic Publications. Dordrecht.
8. Sinha, A. (2001). **Disaster Management: Lessons Drawn and Strategies for Future**, New United Press, New Delhi.
9. Government of India. (1997) **Vulnerability Atlas of India**. New Delhi, Building Materials & Technology Promotion Council, Ministry of Urban Development, Government of India.
10. Hemmady, A. K.R. (1996). **Earthquake**. National Book Trust India, New Delhi.
11. Biswas, M.R. and Biswas, A.K. (1980). **Desertification Case Studies**, Pergamon, Oxford.
12. Sain, Kanwar. (1979). **The Flood Problem India**. Birla Institute of Scientific Research, New Delhi.
13. Zaruba, Q. and Menci, V. (1969). **Landslides and their Control**. Elsevier, Amsterdam.
14. Bhatia, B.M. (1967). **Famines in India**, Asia Publishing House, Delhi.
15. Mason, B.J. (1957). **The Physics of Clouds**. Clarendon Press, Oxford.

Course No: CC 8	Course Name: Hydrology and Oceanography				Course Code: SBS GEO 1 2 08 C 3104		
Batch: 2021-2023	Programme: M.Sc. Geography	Semester: II	L 3	T 1	P 0	Credits 4	Contact Hrs per Week: 4 Total Hours: 60
Total Evaluation Marks: 100		Examination Duration: 3 hours					
CIE: 30 Marks TEE: 70 Marks		Pre-requisite of course: Concept of Hydrology, Ocean Reliefs, and Marine Ecosystem.					
Course Objective	Acquiring knowledge about meaning and various aspects of hydrology and oceanography. To understand the components of hydrological cycle and problems of water resources. Understanding the oceanic relief features, properties of water, oceanic circulation and resources.						
Course Outcomes:	After completing this course, student is expected: CO 1: To know the concepts of hydrology. CO 2: To know the concepts of oceanography. CO 3: To learn the mechanism and importance of different components of hydrological cycle. CO 4: To understand the concept of various oceanic properties and oceans dynamics. CO 5: To understand the nature and importance of oceanic ecosystem. CO 6: To recognize the mechanism of oceans and its linkages to atmosphere.						
COURSE SYLLABUS							
NOTE: Eight questions will be set, two from each of the UNIT. The candidates are required to attempt any five questions in all selecting at least one question from each section. All questions carry equal marks. Unit IV will be taught via online mode.							
Unit No.	Content of Each Unit					Hours of Each Unit	
I	CONCEPTS OF HYDROLOGY: [Course Outcome (s) No.: 1 & 3] Hydrology: Approach, Meaning and Scope; Precipitation and Interception; Evaporation; Evapotranspiration; Infiltration; Groundwater: Occurrence, Storage and Charge; Runoff: Sources, Components and Factors; River regimes; Hydrograph: Components and Separation; Water Resource Problems and Management.					15	
II	CONCEPTS OF OCEANOGRAPHY: [Course Outcome (s) No.: 2] Definition and Scope of Oceanography; Historical Development of Oceanography; Distributional Patterns of Land and Oceans; Depth Zones and Hypsometric Curve; Bottom Relief of Oceans; Oceanic Deposits; Zonation of the Sea.					15	

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III	<p>OCEANIC PROPERTIES AND DYNAMICS: [Course Outcome (s) No.: 4] Ocean Water Properties: Chemical Properties, Temperature, Salinity and Density; Sea Waves; Tides: Types and Origin; Oceanic Currents: Controlling Factors and General Circulation.</p>	15
IV	<p>MARINE RESOURCES AND ECOSYSTEM: [Course Outcome (s) No.: 5 & 6] Mangroves and Estuarine Ecology; Coral Reefs: Formation, Types and Distribution; Marine Pollution; Oceanic Resources: Mineral, Energy, Food Resource, Aquaculture; Oceanic Ecosystems: Marine Biota; Energy Flow: Food Chains and Food Webs; Marine Resources: Depletion, Conservation and Management.</p>	15

Suggested Readings:

1. Singh, S. (2020). **Oceanography**. Pravalika Publication, Allahabad.
2. Singh, S. (2020). **Samudra Vigyan**. Pravalika Publication, Allahabad.
3. Novák, Viliam; Hlaváčiková, Hana (2019). **Applied Soil Hydrology**. Springer International Publishing, Switzerland.
4. Sharma, R.C. and Vatal, V. (2016). **Oceanography for Geographers**. Chatanaya Publishing, Allahabad.
5. Garrison, T. (2015). **Oceanography - An Introduction to Marine Science**. Cole Pacific Grove, USA.
6. Garrison, T. (2012). **Essentials of Oceanography**. Wards worth, London. (6th edition)
7. Davie, T. (2008). **Fundamentals of Hydrology**. Routledge, London.
8. Denny, M. (2008). **How the Ocean Works: An introduction to Oceanography**. Princeton University Press, New Jersey.
9. Brutsaert, W. (2005). **Hydrology: An Introduction**. Cambridge University Press.
10. Andrew. D.W. and Stanley, T. (2004). **Environmental Hydrology**. CRC Press, Allahabad.
11. Kerhsaw, S. (2004). **Oceanography: An Earth Science Perspective**. Routledge, London.
12. Ward, R.C. and Robinson, M. (2000). **Principles of Hydrology**. McGraw Hill, New York.
13. Duxbury, C.A and Duxbury, B. (1996). **An Introduction to the world's Oceans** (2nd Edition). C. Brown, Iowa.
14. Gross, M. Grant (1987). **Oceanography: A View of the Earth**. Prantice - Hall Inc, New Jersey.
15. Davis, R.J.A. (1986). **Oceanography - An Introduction to the Marine Environment**. C. Brown, Iowa.

Course No: GEC 3	Course Name: Contemporary Environmental Issues				Course Code: SBS GEO 1 2 03 GE 3104		
Batch: 2021-2023	Programme: M.Sc. Geography	Semester: II	L 3	T 1	P 0	Credits 4	Contact Hrs per Week:4 Total Hours: 60
Total Evaluation Marks: 100		Examination Duration: 3 hours					
CIE: 30 Marks		Pre-requisite of course: Environment, Ecosystems, Sustainable Development					
TEE: 70 Marks							
Course Objective	<i>Introducing the current environmental issues, the concerns and impact of climate change confronting our present-day world; acquainting the global initiatives and measures adopted relating to climate change; and familiarizing the current environmental issues in India.</i>						
Course Outcomes:	<p>After completing this course, student is expected:</p> <p>CO1: To know about the current environmental issues in relation to human activities. CO2: To understand the concerns and impacts of climate change in the current global context. CO3: To learn about the global initiatives and the measures. CO4: To know the issues of major roadblocks to global initiatives. CO5: To gain knowledge about the current environmental issues relating to the Indian context. CO6: To know the environmental movements in India.</p>						
COURSE SYLLABUS							
NOTE: Eight questions will be set, two from each of the UNIT. The candidates are required to attempt any five questions in all selecting at least one question from each section. All questions carry equal marks. Unit I will be taught via online mode.							
Unit No.	Content of Each Unit					Hours of Each Unit	
I	CONTEMPORARY ENVIRONMENTAL ISSUES [Course Outcome (s) No. :1] Urbanisation and Environment; Environment and Health; Agriculture, Industries, Transport and Environment; Energy and Environment; Resources and Environment; Global Warming; Soil Erosion; Droughts; Biodiversity Loss.					15	
II	ENVIRONMENTAL CONCERNS AND IMPACT ASSESSMENT [Course Outcome (s) No.: 2& 3] Key Concerns in the Climate Change; Scientific and Political Conflicts Concerning their Impacts on Natural Resources; Food Production and the Techno-Economic Measures for Reducing Greenhouse Emissions;					15	

III	<p>GLOBAL INITIATIVES AND MEASURES [Course Outcome (s) No. :4] Major Conferences and Conventions on Environment; International Agencies; Roadblocks to Global Initiatives; Environmental Laws in India; Legislative Measures and Interventions.</p>	15
IV	<p>ENVIRONMENTAL MOVEMENTS AND ISSUES IN INDIA [Course Outcome (s) No. :5 & 6] Environmental Movements in India; Chipko and Apikko Movement; Multipurpose projects: Narmada Dam, Tehri Dam; River Linking and Cleaning Initiatives; Ecological Conservation and Restoration; Desertification and its Control.</p>	15

Suggested Readings:

1. Singh, P., Singh, R. P., and Srivastava, V. (2020). **Contemporary Environmental Issues and Challenges in Era of Climate Change**. Springer, Singapore.
2. Singh, S. (2020). **Paryavaran Boogol Ka Svaroop**. Pravalika Publication, Allahabad.
3. Chasek, P.S. (2018). **Global Environmental Politics**. Routledge.
4. Gunster, S. (2017). **This changes everything: Capitalism vs the climate**.
5. Harper, C., Harper, C.L. and Snowden, M. (2017). **Environment and Society: Human Perspectives on Environmental Issues**. Routledge.
6. Singh, R. B. (2015). **Environmental Geography of South Asia, Contributions toward a future earth Initiative**. Springer, Tokyo.
7. Rangarajan, M. (2009). **Environmental Issues in India: A Reader**. Pearson Education India.
8. Singh, R.B. and Mal, S. (2009). **Environmental Change and Biodiversity**, Rawat Publication, Jaipur.
9. Susskind, L. et. al. (eds). (2002). **Trans-boundary Environmental Negotiation: New Approaches to Global Cooperation**.
10. Toman, M. (ed). (2002). **Climate change, Economics and Policy**. Cambridge University Press.
11. Mukund, R. (1997). **Global Environmental Politics: India and the North-South Politics of Global Environmental Issues**. O.U.P, Delhi
12. Reddy, V. R. (1997). **Environmental Movements in India: Some Reflections**. FIA.
13. Makofske, W.J. and Karlin, E.F. (1995). **Technology and Global Environmental issues**. Addison Wesley, Longman, Toronto.
14. Smith, P. and Warr, K. (1991). **Global Environmental issues**. Hodder and Stoughton, London.
15. Kemp, D.D. (1990). **Global Environmental issues: A climatologized approach**. Taylor and Francis, London.

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Course No: DCEC 6	Course Name: Environmental Geography				Course Code: SBS GEO 1 3 06 DCEC 3104		
Batch: 2021-2023	Programme: M.Sc. Geography	Semester: III	L 3	T 1	P 0	Credits 4	Contact Hrs per Week: 4 Total Hours: 60
Total Evaluation Marks: 100		Examination Duration: 3 hours					
CIE: 30 Marks		Pre-requisite of course: Basic knowledge about Environment, Man-Environment relationship and Environment Degradation.					
TEE: 70 Marks							
Course Objective	The main objectives of the course are to educate students about our climate and to understand its connections to man and other species that vary in various biomes. Learn about ecosystems and how energy is transferred, as well as the concept of productivity and stability of ecosystems. To understand various environmental problems and their management strategies.						
Course Outcomes:	After completing this course, student is expected: CO 1: To comprehend the fundamental concepts, structure and components of the environment. CO 2: To understand the value of ecosystems in ensuring the sustainability of life. CO 3: To establish the man-environment relationship. CO 4: To know about the environmental degradation and various environmental problems. CO 5: To know the role of important organizations to mitigate environmental issue. CO 6: To draw attention to the environmental issues and follow appropriate majors for environmental protection.						
COURSE SYLLABUS							
NOTE: Eight questions will be set, two from each of the UNIT. The candidates are required to attempt any five questions in all selecting at least one question from each section. All questions carry equal marks. Unit IV will be taught via online mode.							
Unit No.	Content of Each Unit					Hours of Each Unit	
I	BASICS OF ENVIRONMENTAL GEOGRAPHY: [Course Outcome (s) No.: 1,3] Meaning, Scope, Approaches and Methods of Environmental Geography; Composition and Types of Environments; Human-Environment Relationships; Environment and Ecology: Meaning, Structure and Type of Environment; Ecology - Meaning, Scope and Concepts.					15	
II	ECOSYSTEM AND BIOGEOCHEMICAL CYCLE: [Course Outcome (s) No.: 2] Ecosystem: Meaning and Concepts of Ecosystem; Trophic Levels; Food Chains and Food Webs; Energy Flow in the Ecosystem; Circulation of Matter in the Ecosystem and Biogeochemical Cycle; Ecosystem					15	

	Productivity; Ecosystem Stability.	
III	<p>ENVIRONMENTAL DEGRADATION AND PROBLEMS:</p> <p>[Course Outcome (s) No.: 4]</p> <p>Environmental Degradation; Extreme Weather Events, Hazards and Disasters; Environmental Pollution (Air, Water, Solid Waste, Soil and Noise Pollution); Environmental Problems: Global Warming, Ozone Depletion, Urban Heat Island, Land Degradation, Reduction in Biodiversity.</p>	15
IV	<p>ENVIRONMENTAL MANAGEMENT AND MITIGATION:</p> <p>[Course Outcome (s) No.: 5 & 6]</p> <p>Environmental Management: Concept and Approaches; Management of Soil, Forest and mineral Resources; Conservation of Natural Resources; Environmental Policies and Organizations</p>	15

Suggested Readings:

1. Kumar, Dilip, Singh, R.B. and Kaur, Ranjeet (2019). **Spatial Information Technology for Sustainable Development Goals**, Springer.
2. Gautam, A. (2007). **Environmental Geography**. Sharda Pustak Bhawan, Allahabad.
3. Singh, S. (2007). **Paryavaran Bhugol**. Prayag Pustak Bhawan, Allahabad.
4. Singh, S. (2006). **Environmental Geography**. Prayag Pustak Bhawan, Allahabad.
5. Rajagopalan, R. (2005). **Environmental Studies: From Crisis to Cure**. Oxford University Press, New Delhi.
6. Anjuneyulu, Y. (2004). **Introduction to Environmental Science**. B. S. Publications, Hyderabad.
7. Blaikie, P., Cannon, T. and Davis, I. (eds.) (2004). **At Risk: Natural Hazards, Peoples Vulnerability and Disasters**. Routledge, London
8. Saxena, K.K. (2004). **Environmental Studies**. University Book House Private Ltd., Jaipur
9. Athavale, R. N. (2003). **Water Harvesting and Sustainable Supply in India**. Rawat Publications, Jaipur.
10. Mathur, H. S. (2003). **Essentials of Biogeography**. Pointer Publication, Jaipur.
11. Singh, D.N., Singh, J. and Raju, K.N.P. (eds.) (2003). **Water Crisis and Sustainable Management**, Tara Book Agency, Varanasi
12. Anjuneyulu, Y. (2002). **Environmental Impact Assessment Methodologies**. B. S. Publications, Hyderabad.
13. Singh, J. (2001). **Paryavaran Evam Samvikas**. Gyanodaya Prakashan, Gorakhpur.
14. Saxena, H. M. (2000). **Environmental Management**. Rawat Publications, Jaipur and New Delhi.
15. Singh, R. B. (ed.) (1995). **Studies in Environment and Development**. Rakesh Prakashan, Varanasi.

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Course Title: Bhakti Literature

Course Code: SHSS ENG 01 01 E 02 3104

Objective: To introduce students to rich and diverse Bhakti literature of India.

Course Learning Outcomes: Some of the learning outcomes of this course are listed as follows:

1. The students will develop the understanding for Indian aesthetics and devotional poetry.
2. The students will appreciate and analyze the texts of poems in relation to Bhakti traditions.
3. The student will be able to develop interest in Indian history and beliefs by revisiting historical poems.
4. The students will be able to focus on Indian art and culture through poetic texts.

Prescribed Texts:

Unit-A: Bhakti Movement and its Traditions

Unit-B: South- Nakkirar (4-7), Antal (9-17), Basavanna (37-42), Mahadeviyakka (42-50) from *The Oxford Anthology of Bhakti Literature*, ed. Andrew Schelling, OUP, 2011.

Unit –C: West and North- Tukaram (90-103), Lal Dad (103-16), Kabir (106-115), Mirabai (137-149) from *The Oxford Anthology of Bhakti Literature*, ed. Andrew Schelling, OUP, 2011.

Unit-D: East- Jayadev (161-171), Ramprasad Sen (216-227) from *The Oxford Anthology of Bhakti Literature*, ed. Andrew Schelling, OUP, 2011.

Suggested Readings:

Chitre, Dilip. *Tukaram*. Penguin books, 1990.

Dharwadker, Vinay. *Kabir: The Weaver's Songs*. Penguin Random House, 2003.

Easwaran, Eknath. *Love is God: Nurturing Devotion for God Everyday*. Jaico, 2003.

Hawley, S. John. *Three Bhakti Voices*. OUP, 2005.

Schelling, Andrew. Ed. *An Oxford Anthology of Bhakti Literature*. OUP, 2011.

Subramaniam, Arundhati. *Eating God: A Book of Bhakti Poetry*. Penguin, 2014.

Hawley, John. *Three Bhakti Voices -Mirabai, Surdas, and Kabir in Their Time and Ours*. OUP, 2005

Course Title: Indian Classical Literature

Course Code: SHSS ENG 01 02 E 06 3104

Objective: To introduce the students to the rich and diverse classical literature of India and also to Indian poetics and aesthetics.

Course Learning Outcomes: Some of the learning outcomes the students are expected to demonstrate are listed here.

- Understanding of Indian aesthetics and Classical literature.
- Ability to understand and interpret relevant theory and Indian classical texts.
- Ability to appreciate and analyze the stories, epic(s) and plays in relation to their cultural and historical contexts.
- Literary and research interest in Indian classical literature and poetics.
- Ability to appreciate Indian art and culture.

Course Content:

Unit-I Essence of Indian Poetics

On syntax and poetic meaning, structure of poetic meaning, figures of Speech & thought, epic poetry, *Nāṭya* and *Rasa* from Bharatamuni's *Nāṭyasāstra*, Bhāmaha's *kāvyaḷamkāra*, Kuntaka's *Vakroktijīvitam*, Anandavardhana's *Dhvanyāloka*

Unit-II: Selections from *The Mahabharata*

- a) 'The Dicing' and 'Sequel to Dicing', Book 2, Sabha Parva Section XLVI-LXXII
- b) 'The Temptation of Karna', Book 5, Udyog Parva, Section CXL-CXLVI
- c) 'Dhritrashtra and Gandhari's Wrath', Book 11, Section XI-XV

Unit –III:

Ilango Adigal, *The Cilappatikaram*, Cantos 1, 2, 7, 18, 19, 20, 21, 22, 24, 26, 30, trans. R. Parthasarathy (Columbia University Press, 1993; Penguin India, 2004)

Unit-IV:

Sudraka's *Mrichchhakatika*

Suggested Readings:

Bharata. *Nāṭyaśāstra*. Ed. Manomohan Ghosh. The Royal Asiatic Society of Bengal, 1950.

Bhāmaha. *Kāvyaḷamkāra*. Ed. P.V. Nāganātha Sāstrī. Delhi: Motilal Banarsidasa, 1991.

Bhartṛhari. *Vākyapdi*. Delhi: Motilal Banarsidass, 1971.

Kalidasa, *Abhijnanasakuntalam*, trans. Chandra Rajan, in *Kalidasa: The Loom of Time*, Penguin Classics, 1989.

Kapoor, Kapil. *Literary Theory, Indian Conceptual Framework*. East-West Press Pvt. Ltd., 1998.

Krishnamoorthi, K. *Essays in Sanskrit Criticism*. Karnataka University, 1964.

--- . *Ānandavardhana's Dhvanyāloka*. Poona Oriental Series, 1952.

--- . Kuntaka. *Vakroktijīvitam*. Ed. K. Krishnamoorthy. Karnataka University, 1977.

Sudraka. *The Mrichchhakatika of Sudraka*, trans. M. R. Kale. Motilal Banarsidas Publishers, 1924, reprint 2013.

Vyas. *The Mahabharata of Krishna-Dwaipayana Vyasa*, trans. K. M. Ganguli. Munshiram Manoharlal Publishers, 2012.

Warder, A.K. *Indian Kavya Literature: Literary Criticism*. Vol.1. Motilal Banarsidas Publishers, 2009.

**NEP and Learning Outcome-based Curriculum Framework
(LOCF)**

For

M.A. in English

(To be effective from the Academic Session 2021-22)

**Department of English and Foreign Languages
School of Humanities and Social Sciences**

Central University of Haryana

**{Approved by the Board of Studies on 21 August 2021 and School Board on
September 9, 2021}**

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Background

Considering the curricular reforms as instrumental for desired learning outcomes, all the academic departments of Central University of Haryana made a rigorous attempt to revise the curriculum of undergraduate and postgraduate programmes in alignment with National Education Policy-2020 and UGC Quality Mandate for Higher Education Institutions-2021. The process of revising the curriculum could be prompted with the adoption of “Comprehensive Roadmap for Implementation of NEP-2020” in 32nd meeting of the Academic Council of the University held on April 23, 2021. The Roadmap identified the key features of the Policy and elucidated the Action Plan with well-defined responsibilities and indicative timeline for major academic reforms.

The process of revamping the curriculum started with the series of webinars and discussions conducted by the University to orient the teachers about the key features of the Policy, enabling them to revise the curriculum in sync with the Policy. Proper orientation of the faculty about the vision and provisions of NEP-2020 made it easier for them to appreciate and incorporate the vital aspects of the Policy in the revised curriculum focused on ‘creating holistic, thoughtful, creative and well-rounded individuals equipped with the key 21st century skills’ for the ‘development of an enlightened, socially conscious, knowledgeable, and skilled nation’.

With NEP-2020 in background, the revised curricula articulate the spirit of the policy by emphasising upon— integrated approach to learning; innovative pedagogies and assessment strategies; multidisciplinary and cross-disciplinary education; creative and critical thinking; ethical and Constitutional values through value-based courses; 21st century capabilities across the range of disciplines through life skills, entrepreneurial and professional skills; community and constructive public engagement; social, moral and environmental awareness; Organic Living and Global Citizenship Education (GCED); holistic, inquiry-based, discovery-based, discussion-based, and analysis-based learning; exposure to Indian knowledge system, cultural traditions and classical literature through relevant courses offering ‘Knowledge of India’; fine blend of modern pedagogies with indigenous and traditional ways of learning; flexibility in course choices; student-centric participatory learning; imaginative and flexible curricular structures to enable creative combination of disciplines for study; offering multiple entry and exit points initially in undergraduate programmes; alignment of Vocational courses with the International Standard Classification of Occupations maintained by the International Labour Organization; breaking the silos of disciplines; integration of extra-curricular and curricular

aspects; exploring internships with local industry, businesses, artists and crafts persons; closer collaborations between industry and higher education institutions for technical , vocational and science programmes; and formative assessment tools to be aligned with the learning outcomes, capabilities, and dispositions as specified for each course. In case of UG programmes in Engineering and Vocational Studies, it was decided that the departments shall incorporate pertinent NEP recommendations while complying with AICTE, NBA, NSQF, International Standard Classification of Occupations, Sector Skill Council and other relevant agencies/sources. The University has also developed consensus on adoption of Blended Learning with 40% component of online teaching and 60% face to face classes for each programme.

The revised curricula of various programmes could be devised with concerted efforts of the faculty, Heads of the Departments and Deans of Schools of Study. The draft prepared by each department was discussed in series of discussion sessions conducted at Department, School and the University level. The leadership of the University has been a driving force behind the entire exercise of developing the uniform template and structure for the revised curriculum. The Vice Chancellor of the University conducted series of meetings with Heads and Deans to deliberate upon the vital parameters of the revised curriculum to formulate a uniform template featuring Background, Programme Outcomes, Programme Specific Outcomes, Postgraduate Attributes, Structure of Masters Course, Learning Outcome Index, Semester-wise Courses and Credit Distribution, Course-level Learning Outcomes, Teaching-Learning Process, Blended Learning, Assessment and Evaluation, Keywords, References and Appendices. The experts of various Boards of Studies and School Boards contributed to a large extent in giving the final shape to the revised curriculum of each programme.

To ensure the implementation of curricular reforms envisioned in NEP-2020, the University has decided to implement various provisions in a phased manner. Therefore, the curriculum may be reviewed annually by the department so as to gradually include all relevant provisions of NEP-2020. The Department shall review the curriculum periodically to assess the relevance and feasibility of Discipline Specific/Generic Electives, and the courses may be added or dropped, accordingly. The decision taken by the department to add or drop the electives shall be reported to the BoS/School Board.

Programme Outcomes

On completing M. A. Programme, the students shall be able to realise following programme outcomes:

<u>PO</u>	<u>Description</u>
PO-1	Demonstrate holistic understanding of life in varied manifestations.
PO-2	Discuss and apply various social, political and literary trends in real life situations.
PO-3	Understand and discuss contemporary socio-political, cultural and literary context through multidisciplinary approach.
PO-4	Demonstrate an ability to use relevant theoretical concepts in real-life situations.
PO-5	Ability to integrate the traditional knowledge with latest advances in social sciences and humanities.
PO-6	Formulate valid propositions on the basis of multidisciplinary and cross-disciplinary understanding of disciplines.
PO-7	Appreciate and analyse regional, national and international scenario.
PO-8	Demonstrate the ability to interpret and analyse realities of life from social perspective.
PO-9	Propose solutions to the existing human problems as a well-informed and competent individual.

Programme Specific Outcomes

On completing M. A. in English Programme, the students shall be able to realise following outcomes:

<u>PSO</u>	<u>Description</u>
PSO-1	Demonstrate critical understanding of English Literature in its varied forms.
PSO-2	Discuss various literary genres, terms and movements with clarity.
PSO-3	Develop creative and critical insights, aesthetic sensibility, and analytical skills.
PSO-4	Demonstrate an ability to use English language proficiently and correctly, both in speech and writing.
PSO-5	Compare the literary trends in literature produced in different contexts and age.
PSO-6	Locate and analyse the literary texts with appropriate theoretical framework.
PSO-7	Appreciate regional and world literatures in the light of different literary and cultural traditions.
PSO-8	Demonstrate the ability to interpret realities of life from literary perspective.
PSO-9	Exhibit skill and competency for conducting research in literature.

Postgraduate Attributes

- ❖ Disciplinary Knowledge
- ❖ Creative and Critical Thinking
- ❖ Reflective Thinking
- ❖ Problem Solving
- ❖ Analytical Reasoning
- ❖ Communication Skills
- ❖ Research Skills
- ❖ Life Skills
- ❖ Multicultural Competence
- ❖ Moral and Ethical Values
- ❖ Life-long Learning
- ❖ Global Competency

Structure of Programme

Semester-I						
Sr.	Course Title	Course Code	L	T	P	Credits
Core Courses						
1	Literary Criticism-I	SHSS ENG 01 01 C 01 3104	3	1	0	4
2	Major Trends and Movements in English Literature-I	SHSS ENG 01 01 C 02 3104	3	1	0	4
3	British Poetry-I	SHSS ENG 01 01 C 03 3104	3	1	0	4
4	British Novel-I	SHSS ENG 01 01 C 04 3104	3	1	0	4
5	British Drama-I	SHSS ENG 01 01 C 05 3104	3	1	0	4
Elective Courses						
1	Communication Skills in English (Generic Elective)	SHSS ENG 01 01 E 01 3104	3	1	0	4
2	Bhakti Literature	SHSS ENG 01 01 E 02 3104	3	1	0	4
3	American Literature	SHSS ENG 01 01 E 03 3104	3	1	0	4
4	English Language Teaching	SHSS ENG 01 01 E 04 3104	3	1	0	4
Semester-II						
Sr.	Course Title	Course Code	L	T	P	Credits
Core Courses						
1	Literary Theory and Criticism –I	SHSS ENG 01 02 C 06 3104	3	1	0	4
2	Major Trends and Movements in English Literature-II	SHSS ENG 01 02 C 07 3104	3	1	0	4
3	British Poetry-II	SHSS ENG 01 02 C 08 3104	3	1	0	4
4	British Novel-II	SHSS ENG 01 02 C 09 3104	3	1	0	4
5	British Drama-II	SHSS ENG 01 02 C 10 3104	3	1	0	4
Elective Courses						
1	Introduction to Translation: Theory and Practice (Generic Elective)	SHSS ENG 01 02 E 05 3104	3	1	0	4
2	Indian Classical Literature	SHSS ENG 01 02 E 06 3104	3	1	0	4
3	Dalit Literature and Aesthetics	SHSS ENG 01 02 E 07 3104	3	1	0	4
4	Canadian Literature	SHSS ENG 01 02 E 08 3104	3	1	0	4
Semester-III						
Sr.	Course Title	Course Code	L	T	P	Credits
Core Courses						
1	Literary Theory and Criticism –II	SHSS ENG 01 03 C 11 3104	3	1	0	4
2	Postcolonial Theory and Literature	SHSS ENG 01 03 C 12 3104	3	1	0	4
3	Indian Writings in English	SHSS ENG 01 03 C 13 3104	3	1	0	4
4	Introduction to Linguistics	SHSS ENG 01 03 C 14 3104	3	1	0	4

Elective Courses						
1	Creative Writing (Generic Elective)	SHSS ENG 01 03 E 09 3104	3	1	0	4
2	Contemporary South Asian Fiction in English	SHSS ENG 01 03 E 10 3104	3	1	0	4
3	Literature of Protest	SHSS ENG 01 03 E 11 3104	3	1	0	4
4	Gender and Literature	SHSS ENG 01 03 E 12 3104	3	1	0	4
5	Disability Studies and Literature	SHSS ENG 01 03 E 13 3104	3	1	0	4
Semester-IV						
Sr.	Course Title	Course Code	L	T	P	Credits
Core Courses						
1	Literary Criticism in India	SHSS ENG 01 04 C 15 3104	3	1	0	4
2	Research Methodology	SHSS ENG 01 04 C 16 3104	3	1	0	4
3	Dissertation	SHSS ENG 01 04 C 17 012012	0	12	0	12
Elective Courses						
1	Modern Indian Literature in English Translation (Generic Elective)	SHSS ENG 01 04 E 14 3104	3	1	0	4
2	Modern World Literature	SHSS ENG 01 04 E 15 3104	3	1	0	4
3	Existentialism and Literature	SHSS ENG 01 04 E 16 3104	3	1	0	4
4	Literature and Human Rights	SHSS ENG 01 04 E 17 3104	3	1	0	4

Note:

- i. Mobility of Credits earned by the students from GIAN (Global Initiative of Academic Networks) courses/ MOOCs (Massive Open Online Courses)/ SWAYAM (Study Webs of Active –Learning for Young Aspiring Minds)/ Swachh Bharat Internship Programme/ etc. shall be credited in accordance with the provisions made under the respective schemes, as amended from time to time; subject to compatibility of course content & assessment process with the prior approval of the Board of Studies/ School Board of the concerned department.
- ii. The Department may not offer all the elective courses listed in the scheme as it will depend upon the availability of faculty and feasibility of the course.
- iii. In addition to the electives marked as Generic Elective, the Department may offer any elective as a Generic Elective if there is a popular demand and a student of M.A. English may also opt for an elective marked as Generic Elective for broader choice.

Learning Outcome Index

I. Programme Outcomes and Programme Specific Outcomes

PO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6	PSO-7	PSO-8	PSO-9
PO-1	√	-	√	√	√	√	√	√	√
PO-2	√	√	√	-	√	√	√	√	-
PO-3	√	√	√	-	√	√	√	√	√
PO-4	√	-	√	-	√	√	√	√	√
PO-5	√	√	√	-	√	√	√	√	√
PO-6	√	√	√	-	√	√	√	√	√
PO-7	√	√	√	√	√	√	√	√	√
PO-8	-	√	√	√	√	√	√	√	√
PO-9	√	-	√	√	-	√	√	√	√

II. Core Courses (CC):

PSO	C C- 1	C C- 2	C C- 3	C C- 4	C C- 5	C C- 6	C C- 7	C C- 8	C C- 9	C C- 10	C C- 11	C C- 12	C C- 13	C C- 14	C C- 15	C C- 16	CC- 17
PSO-1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-2	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√
PSO-3	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√
PSO-4	-	√	√	√	√	-	√	√	√	√	-	√	√	√	-	√	√
PSO-5	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√
PSO-6	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√
PSO-7	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-8	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√
PSO-9	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

III. Elective Courses (EC):

PSO	EC-1	EC-2	EC-3	EC-4	EC-5	EC-6	EC-7	EC-8	EC-9	EC-10	EC-11	EC-12	EC-13	EC-14	EC-15	EC-16	EC-17
PSO-1	-	-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-2	-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-3	-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-4	√	-	√	√	√	√	√	√	√	√	√	-	√	√	-	-	√
PSO-5	-	√	√	-	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-6	-	√	√	-	-	√	√	√	√	√	√	√	√	√	√	√	√
PSO-7	-	√	√	-	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-8	-	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
PSO-9	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Syllabus

SEMESTER-I

Course Title: Literary Criticism-I

Course Code: SHSS ENG 01 01 C 01 3104

Course Objective: To provide a critical understanding of the developments in literary criticism from Greek era to beginnings of 20th century. Moreover, some selected texts/critics are prescribed for detailed study whose contribution to this area constitutes a significant benchmark in each era.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Develop a historical understating of how literary criticism has evolved over the years.
2. Detail study of some of the canonical texts written by established names in the field of literary criticism.
3. Explain the meaning, nature and definition of important critical traditions of the period.
4. Trace the evolution of Classical, Neo-Classical, Romantic and Modern Literary Criticism along with their socio-historical and political background.
5. Provide a conceptual framework for developing an understanding of the function and practice of traditional modes of literary criticism.

Course Content:

Unit - I

Aristotle: *Poetics* (Chapters i-xvi, xxvi), translation by S.H. Butcher

Unit - II

Philip Sidney: *The Defence of Poesy*

Unit -III

William Wordsworth: *Preface to Lyrical Ballads* (1802 edition)

Unit - IV

Matthew Arnold: "The Function of Criticism at the Present Time"

T. S. Eliot: "Tradition and the Individual Talent"

Suggested Readings:

- Abrams, M.H. and Geoffrey Galt Harpham. *A Glossary of Literary Terms* (11th Edition). Cengage Learning, 2015.
- Arnold, Matthew. *Essays in Criticism*. New York: MacMillan and company, 1865.
- Blamire, Harry. *A History of Literary Criticism*. Macmillan, 2001.
- Daiches, David. *Critical Approaches to Literature*, 2nd ed. Orient Longman, 1970.
- Lodge, David ed. *20th Century Literary Criticism: A Reader*. Longman, 1989.
- . *Criticism and Theory: A Reader*. Pearson Education, 1st Indian Rpt., 2003.
- Habib, M. A. R. *A History of Literary Criticism: From Plato to the Present*. Blackwell, 2005.
- Lucas, F. L. *Tragedy in Relation to Aristotle's Poetics*. Allied Publishers, 1970.
- Nagarajan, M.S. *English Literary Criticism & Theory: An Introductory History*. Orient Longman, 2006.
- Waugh, Patricia. *Literary Theory & Criticism: An Oxford Guide*. OUP, 2006.
- Wellek, Rene. *A History of Modern Criticism: 1750-1950*, Vols. I-IV. Yale University Press, 1958.

Course Title: Major Trends and Movements in English Literature-I

Course Code: SHSS ENG 01 01 C 02 3104

Course Objective: To study important socio-political, cultural and literary developments to develop a chronological understanding of the major trends and movements of English Literature from Anglo-Saxon to Neo-classical Age.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Develop a historical understating of English language and literature from Anglo-Saxon period to Neo-classical Age.
2. Trace the evolution of literary writings, their contexts, genres and prominent themes during the period under study.
3. Explain the meaning, nature and definition of popular literary genres of the period.
4. Elaborate, analyse and appreciate the literary beauty of important literary texts of the period.

Course Content:

Unit-I: Anglo-Saxon Period to Age of Chaucer

Evolution of English Language and Literature

First known Generation of Poets and their Poetry

Literature of the Anglo-Norman Period

Chaucer and his Contemporaries

Important Writers and Major Literary texts

Unit-II: Renaissance and Elizabethan Period

Renaissance and Reformation

Evolution of Drama

University Wits

Shakespeare and His Works

Edmund Spenser, Philip Sydney, Ben Jonson and other Important Writers

Unit-III: Jacobean and Puritan Age

Jacobean Drama

Metaphysical Poets

Cavalier and Caroline Poets

Francis Bacon and other Prose Writers

Puritan Movement and Poets

Unit-IV: Restoration and Neo-classical Age

Restoration Age and Literature

Comedy of Manners and Comedy of Morals

Neo-Classical Age and Literature

Periodical Essays and Essayists

Rise of Novel and Important Novelists

Suggested Readings:

Abrams, M.H. and Geoffrey Galt Harpham. *A Glossary of Literary Terms* (9th Edition). Cengage Learning, 2008.

Dahiya, Bhim S. *A New History of English Literature*. New Delhi: Doaba Publications, 2006.

Daiches, David. *A Critical History of English Literature*. Vol. I-IV. New Delhi: Allied Publishers, 2005.

Ford, Boris. Ed. *The New Pelican Guide to English Literature, Vol. 1-7*. Penguin Books, 1991.

Hudson, William Henry. *An Outline History of English Literature*. New Delhi: Atlantic Publishers.

Long, William J. *English Literature: Its History and Significance*. New Delhi: Kalyani Publishers, 2009.

Richetti, John. Ed. *The Cambridge History of English Literature*. Cambridge University Press, 2005.

Course Title: British Poetry-I

Course Code: SHSS ENG 01 01 C 03 3104

Course Objective: To generate an understanding of poetry as a genre and language form by reading and analyzing poetical works from Anglo-Saxon to Neo-Classical period.

Course Level Learning Outcomes: Some of the learning outcomes of this course are listed as follows:

1. Students will develop the understanding of British/ English Literary culture.
2. They will appreciate and analyze the texts in the larger socio-political and religious contexts of the time.
3. Students will be in position to extend the knowledge of life in literature and lived situations.
4. Students will extend their knowledge of different forms of Poetry through reading of different poetical texts.

Course Content:

Unit-I

Geoffrey Chaucer's 'The Prologue' to *The Canterbury Tales*

Unit-II

(i) John Donne: "A Valediction: Forbidding Mourning" and Holy Sonnet XIV: "Batter My Heart, Three-Person'd God"

(ii) Andrew Marvel: "To His Coy Mistress"

Unit-III

John Milton: *The Paradise Lost* (Book-I)

Unit-IV

Alexander Pope: *The Rape of the Lock*

Suggested Readings:

Abrams, M.H., and Geoffrey Galt Harpham. *A Glossary of Literary Terms*. 10th ed., Cengage, 2012.

Bennett, Joan. *Five Metaphysical Poets*. Cambridge University Press, 1964.

Bowden, Muriel A. *A Reader's Guide to Geoffrey Chaucer*. Thames & Hudson, 1964.

Brewer, Derek S. *New Readings of Chaucer's Poetry (Chaucer Studies)*. Edited by Robert G. Benson and Susan J. Ridyard, D.S. Brewer, 2003.

David Aers. *Chaucer (New Readings)*. The Harvester Press, 1986.

Donaldson, E Talbot, ed. *Chaucer's Poetry: An Anthology for the Modern Reader*. 2nd ed., Pearson, 1998.

- Fuller, John, editor. *Alexander Pope (Poet to Poet)*. Faber & Faber, 2008.
- Gardner, Helen. ed. *John Donne: A Collection of Critical Essays (Twentieth Century Views Series)*. Prentice Hall India Ltd., 1979.
- Grosart, Alexander B. *The Complete Poems of Andrew Marvell*. Digireads, 2014.
- Milton, John. *John Milton (Oxford Poetry Library)*. Edited by Stephen Orgel and Jonathan Goldberg, Oxford Paperback, 1994.
- Ricks, Christopher, and Ilona Bell, eds. *John Donne: Collected Poetry*. Revised ed., Penguin Classics, 2012.

Course Title: British Novel-I
Course Code: SHSS ENG 01 01 C 04 3104

Course Objective: The primary objective of the course is to introduce the students with novel as a literary genre and provide an in-depth understanding of 18th and 19th century British novel by familiarizing them with the celebrated novelists and their works.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed here.

1. Ability to trace the socio-historical reasons for the origin and development of novel as a genre.
2. Skill in critical analysis of the given novels focusing on their structural and thematic aspects.
3. Understanding of the stylistic and thematic experiments carried out in the prescribed novels.
4. Appreciation of novel as a vehicle for social change.
5. Ability to do textual analysis of the texts.

Course Content:

Unit-I

Daniel Defoe – *Moll Flanders*

Unit-II

Emily Bronte – *Wuthering Heights*

Unit-III

Charles Dickens – *A Tale of Two Cities*

Unit-IV

Thomas Hardy – *Jude the Obscure*

Suggested Readings:

Allen, Walter. *The English Novel: A Short Critical History*. Books Way, 2015.

Bakhtin, Mikhail. *The Dialogic Imagination*. U of Texas P, 1982.

Booth, Wayne C. *The Rhetoric of Fiction*. 2nd ed., U of Chicago P, 1983.

Boulton, Marjorie. *The Anatomy of the Novel*. Routledge, 1975.

Chesterton, G.K. *Charles Dickens*. House of Stratus, 2001.

Chitham, Edward. *The Birth of Wuthering Heights: Emily Bronte at Work*. Macmillan, 2001.

Collins, Philip. *Charles Dickens: The Critical Heritage*. Routledge, 2005.

Eagleton, Terry. *The English Novel: An Introduction*. Wiley-Blackwell, 2013.

Forster, E.M. *Aspects of the Novel*. Penguin, 1927.

Gardner, John. *The Art of Fiction*. Alfred A. Knopf, 1984.

Harvey, Geoffrey. *The Complete Critical Guide to Thomas Hardy*. Routledge, 2003.

Kettle, Arnold. *An Introduction to the English Novel Vol. I*. Hutchinson, 1974.

Lubbock, Percy. *The Craft of Fiction*. Create Space, 2010.

Lukacs, Georg. *The Theory of Novel*. Merlin Press, 1971.

Milligan, Ian. *The Novel in English: An Introduction*. Macmillan Education UK, 1983.

Seager, Nicholas. *The Rise of Novel*. Macmillan, 2012.

Course Title: British Drama -I
Course Code: SHSS ENG 01 01 C 05 3104

Course Statement: Drama combines the literary arts of storytelling and poetry with the world of live performance. As a form of ritual as well as entertainment, it has served to unite communities and challenge social norms by vitalizing its audiences. In order to understand this rich art form more fully, a sampling of plays, which exemplify different kinds of dramatic structure, will be examined. Students will be encouraged to read widely for enrichment and enjoyment.

Objective(s): This course aims to—

- Introduce students to the tradition of British Drama from fourteenth to nineteenth century;
- Explore the key writers and texts within their historical and intellectual contexts;
- Offer a perspective on the history of British Drama.

Course Level Learning Outcomes

Some of the learning outcomes that the students of this course are expected to demonstrate, are listed as follows:

1. Understand the tradition of British Drama from 14th to 19th centuries.
2. Develop a clear understanding of the texts suggested
3. Engage with the major genres and forms of drama and develop fundamental skills required for close reading and critical thinking of the texts and concepts
4. Appreciate and analyze the plays in the larger socio-political and religious contexts of the time.

Course Content:

Unit-I

Christopher Marlowe: *Doctor Faustus*

Unit-II

William Shakespeare: *Othello*

Unit-III

R.B. Sheridan: *The School for Scandal*

Unit-IV

William Congreve: *The Way of the World*

Suggested Readings:

Abrams, M.H. and Geoffrey Galt Harpham. *A Glossary of Literary Terms* (11th Edition).
Cengage Learning, 2015.

- Anderson, Michael. *Anger and Detachment: A Study of Arden, Osborne and Pinter*. London: Pitman, 1976.
- Baldick, Chris. *The Oxford Dictionary of Literary Terms*. USA: OUP, 2009 (3ed.).
- Bentley, Eric. *Bernard Shaw*. London: Limelight Editions, 1985.
- Bradley, A.C. *Shakespearean Tragedy: Lectures on Hamlet, Othello, King Lear, Macbeth*. New Delhi: Dodo Press, 2009.
- Brooks, Cleanth, and Robert B. Heilman. *Understanding Drama: Twelve Plays*. Holt, Rinehart and Winston, 1948.
- Chandler, Frank Wadleigh. *Aspects of Modern Drama*. New York: Macmillan, 1914.
- Harbage, Alfred. *Shakespeare: The Tragedies (A Collection of Critical Essays)*. New Delhi: Pearson, 2005.
- Hayman, Ronald. *John Osborne (Contemporary Playwrights Series)*. London: Heinemann Educational, 1970.
- Innes, Christopher, ed. *Cambridge Companion to George Bernard Shaw*. Cambridge: Cambridge University Press, 2006.
- Loftis, J. *Comedy and Society from Congreve to Fielding*. Stanford: Calif, 1959.
- Loomba, Ania. *Post-colonial Shakespeare*. London: Routledge, 1998.

Course Title: Communication Skills in English
Course Code: SHSS ENG 01 01 E 01 3104

Course Statement:

The aim of this course is to help students become familiar with nuances of grammar and build confidence in them that grammar is 'learnable'. The course also helps the learners become aware of language, its dependence on grammar and the variety it exhibits.

Objective(s): This course aims to

- Develop the basic understanding of grammar and communication skills among the students;
- Enhance the listening, speaking, reading and writing skills of the students.

Course Level Learning Outcomes: Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Identify deviant use of English both in written and spoken forms;
2. Recognize the errors of usage and correct them;
3. Understand and appreciate English spoken by people from different regions;
4. Use language for speaking with confidence in an intelligible and acceptable manner;
5. Understand the importance of basic communication skills for life.

Course Content:

Unit-I: Phonetics

The Organs of Speech
Phonetic Symbols
Speech Sounds – Vowels and Consonants

Unit-II: Functional Grammar

Articles, Parts of Speech, Question Tags, Tenses, Preposition, Common Errors and Usage

Unit-III: Conversational English

Language and Society, Styles and Registers
Situational Communication

Unit-IV: Presentation Skills

Presentation Skills, Interviews, Public Speaking, Preparing the Speech, Organising the Speech, Special Occasion Speeches.

Suggested Readings:

Adair, John. *Effective Communication*. London: Pan Macmillan Ltd., 2003.

Ajmani, J. C. *Good English: Getting it Right*. New Delhi: Rupa Publications, 2012.

Amos, Julie-Ann. *Handling Tough Job Interviews*. Mumbai: Jaico Publishing, 2004.

- Bonet, Diana. *The Business of Listening*. Third Edition. New Delhi: Viva Books, 2004.
- Bovee, Courtland L, John V. Thill & Barbara E. Schatzman. *Business Communication Today*. Tenth Edition. New Jersey: Prentice Hall, 2010.
- Brown, Michele & Gyles Brandreth. *How to Interview and be Interviewed*. London: Sheldon Press, 1994.
- Carnegie, Dale. *The Quick and Easy Way to Effective Speaking*. New York: Pocket Books, 1977.
- Collins, Patrick. *Speak with Power and Confidence*. New York: Sterling, 2009.
- Fitikides, T. J. *Common Mistakes in English*. London: Orient Longman, 1984.
- Guffey, Mary Ellen. *Essentials of Business Writing*. Ohio: South Western College Pubg., 2000.
- Hall, Edward, T. *The Silent Language*. Greenwich, Conn, Fawcett, 1959.
- . *Beyond Culture*. Garden City, N.Y.: Doubleday, 1976.
- Hasson, Gill. *Brilliant Communication Skills*. Great Britain: Pearson Education, 2012.
- Hughes, Shirley. *Professional Presentations: A Practical Guide to the Preparation and Performance of Successful Business Presentations*. Sydney: McGraw-Hill, 1990.
- Kalish, Karen. *How to Give a Terrific Presentation*. New York: AMACOM, 1996.
- Kratz, Abby Robinson. *Effective Listening Skills*. Toronto: ON: Irwin Professional Publishing, 1995.
- Kroehnert, Gary. *Basic Presentation Skills*. Sidney: McGraw Hill, 2010.
- Lesikar, Raymond V and Marie E. Flatley. *Basic Business Communication: Skills for Empowering the Internet Generation*. Ninth Edition. New Delhi: Tata McGraw-Hill, 2002.
- Lesikar, Raymond V., & John D. Pettit, Jr. *Report Writing for Business*. Tenth Edition. Delhi: McGraw-Hill, 1998.
- Morgan, Dana. *10 Minute Guide to Job Interviews*. New York: Macmillan, 1998.
- Prasad, H. M. *How to Prepare for Group Discussion and Interview*. New Delhi: Tata McGraw-Hill Publishing Company Limited, 2001.
- Pease, Allan. *Body Language*. Delhi: Sudha Publications, 1998.
- Raman, Meenakshi & Sangeeta Sharma. *Technical Communication: Principles and Practice*. Second Edition. New Delhi: Oxford University Press, 2011.
- Rogers, Natalie. *How to Speak Without Fear*. London: Ward Lock, 1982.
- Rutherford, Andrea J. *Basic Communication Skills for Technology*. Second Edition. Delhi: Pearson Education, 2007.
- Seely, John. *Writing Reports*. New York: Oxford University Press, 2002.

- Sharma, R. C. & Krishna Mohan. *Business Correspondence and Report Writing*. Third Edition. New Delhi: Tata McGraw-Hill Publishing Company Limited, 2007.
- Thill, John V. & Courtland L. Bovée. *Excellence in Business Communication*. 10th edition. Boston: Pearson, 2013.
- Thorpe, Edgar & Showick Thorpe. *Winning at Interviews*. 2nd Edition. Delhi: Dorling Kindersley, 2006.
- Turton, N. D. & J. B. Heaton. *Longman Dictionary of Common Errors*. Essex: Longman, 1987. First Indian Edn. 1998.

Course Title: Bhakti Literature

Course Code: SHSS ENG 01 01 E 02 3104

Objective: To introduce students to rich and diverse Bhakti literature of India.

Course Learning Outcomes: Some of the learning outcomes of this course are listed as follows:

1. The students will develop the understanding for Indian aesthetics and devotional poetry.
2. The students will appreciate and analyze the texts of poems in relation to Bhakti traditions.
3. The student will be able to develop interest in Indian history and beliefs by revisiting historical poems.
4. The students will be able to focus on Indian art and culture through poetic texts.

Prescribed Texts:

Unit-A: Bhakti Movement and its Traditions

Unit-B: South- Nakkirar (4-7), Antal (9-17), Basavanna (37-42), Mahadeviyakka (42-50) from *The Oxford Anthology of Bhakti Literature*, ed. Andrew Schelling, OUP, 2011.

Unit –C: West and North- Tukaram (90-103), Lal Dad (103-16), Kabir (106-115), Mirabai (137-149) from *The Oxford Anthology of Bhakti Literature*, ed. Andrew Schelling, OUP, 2011.

Unit-D: East- Jayadev (161-171), Ramprasad Sen (216-227) from *The Oxford Anthology of Bhakti Literature*, ed. Andrew Schelling, OUP, 2011.

Suggested Readings:

Chitre, Dilip. *Tukaram*. Penguin books, 1990.

Dharwadker, Vinay. *Kabir: The Weaver's Songs*. Penguin Random House, 2003.

Easwaran, Eknath. *Love is God: Nurturing Devotion for God Everyday*. Jaico, 2003.

Hawley, S. John. *Three Bhakti Voices*. OUP, 2005.

Schelling, Andrew. Ed. *An Oxford Anthology of Bhakti Literature*. OUP, 2011.

Subramaniam, Arundhati. *Eating God: A Book of Bhakti Poetry*. Penguin, 2014.

Hawley, John. *Three Bhakti Voices -Mirabai, Surdas, and Kabir in Their Time and Ours*. OUP, 2005

Course Title: American Literature

Course Code: SHSS ENG 01 01 E 03 3104

Course Objectives: To introduce American literature as a distinct branch of English literature through critical study of thematic and stylistic aspects of prescribed texts.

Course Level Learning Outcomes: Some of the learning outcomes of this course are listed as follows:

1. The students will develop the understanding of American literary culture.
2. The students will be able to demonstrate an understanding of different genres of literature in America through reading of different texts.
3. The students will appreciate and analyze the texts in the larger socio-political and cultural context of the time.

Course Content

Unit-I: Essays

- (i) Ralph Waldo Emerson: “The American Scholar”
- (ii) Henry David Thoreau: “Civil Disobedience”

Unit-II: Poetry

- (i) Walt Whitman “There was a Child Went Forth”, “When Lilacs Last in the Dooryard Bloom’d”
- (ii) Emily Dickinson: “Success is Counted Sweetest”, “Because I could not stop for Death”
- (iii) Robert Frost: “Mending Wall”, “The Road Not Taken”

Unit-III: Drama

Arthur Miller: *Death of a Salesman*

Unit-IV: Fiction

Toni Morrison: *Beloved*

Suggested Readings:

- Bennett, Michael Y. *The Cambridge Introduction to Theatre and Literature of the Absurd*. Cambridge University Press, 2015.
- Bloom, Harold. *Ernest Hemingway's "The Old Man and the Sea" (Bloom's Notes)*. Chelsea House Publishers, 1999.
- Dickinson, Emily. *100 Selected Poems*. Collectable Hardbound ed. Fingerprint Publishing, 2019.
- Emerson, R.W. *Ralph Waldo Emerson: A Collection of Critical Essays*. Ed. Lawrence Buell. Pearson Publication, 1992.

- Esslin, Martin. *An Anatomy of Drama*. Hill and Wang, 1977.
- Fisher, William J. *The American Literature of the Nineteenth Century: An Anthology*. Eurasia Publishing House Pvt Ltd, 1970.
- Ford, Boris. *The New Pelican Guide to English Literature: 9. American Literature*. Penguin Books, 1988.
- Frost, Robert. *The Collected Poems*. Vintage classics publication, 2013.
- Jacob, J. *History of American Literature*. Sublime Publishers, 2005.
- Roudané, Matthew. *Edward Albee: A Critical Introduction*. Cambridge University Press, 2017.
- Schneider, Dorothy Schneidercarl J. *An Eyewitness History of Slavery in America*. Checkmark, 2000.
- Thoreau, Henry David. *Civil Disobedience and Other Essays*. Digireads.com publication, 2005.
- Whitman, Walt. *Leaves of Grass and Selected Poems and Prose*. Edited by Peter M. Coviello, Penguin Books, 2014.

Course Title: English Language Teaching

Course Code: SHSS ENG 01 01 E 04 3104

Objective: The primary objective of the course is to provide the students with relevant knowledge of and training in methods and skills of English language teaching.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate, are listed here:

1. Knowledge of various approaches and techniques of language teaching.
2. Skills of listening, reading, speaking, and writing language.
3. Skills in developing lesson plans.
4. Understanding of various ways of language testing and evaluation.

Course Content:

Unit-I Language Teaching Methodology

- a) English Language Teaching—Present Scenario
- b) Traditional and Modern Approaches to ELT
- c) Methods and Techniques
- d) Innovative Strategies for Enhanced Outcomes
- e) Teaching Language through Literature

Unit-II Teaching Language Systems

- a) Teaching Pronunciation
- b) Teaching Vocabulary
- c) Teaching Grammar
- d) Teaching Usage

Unit-III Teaching Language Skills: Receptive Skills and Productive Skills

- a) Listening Skills
- b) Speaking Skills
- c) Reading Skills
- d) Writing Skills

Unit-IV Planning Lessons, Testing and Evaluation

- a) Principles of Lesson Planning
- b) Summative and Formative Assessment
- c) Qualities of a Good Test
- d) Types of Tests and Test-Items
- e) Writing and Marking Test

Suggested Readings:

Burgess, Fally, and Katie Head. *How to Teach for Exams*. Pearson, 2005.

Dudenev, Gavin, and Nicky Hockly. *How to Teach English with Technology*. Pearson, 2007.

Harmer, Jeremy. *The Practice of English Language Teaching*. Pearson, 5th ed., 2015.

---. *How to Teach Writing*. Pearson, 2004.

---. *How to Teach English*. Pearson, 2007.

Hughes, A. *Testing for Language Teachers*. Cambridge UP, 2002.

Kelly, Gerald. *How to Teach Pronunciation*. Pearson, 2000.

Larsen-Freeman, Diane and Marti Anderson. *Techniques and Principles in Language Teaching*. 3rd ed., Oxford UP, 2012.

McNamara, T. *Language Testing*. Oxford UP, 2000.

Richards, Jack C., and Theodore Rogers. *Approaches and Methods in Language Teaching*. 3rd ed., Cambridge UP, 2014.

Richards, Jack C., and Theodore S. Rodgers. *Approaches and Methods in Language Teaching*. Cambridge University Press, 3rd ed., 2014.

Stern, H. H. *Fundamental Concepts of Language Teaching*. Oxford UP, 1983.

Thornbury, Scott. *How to Teach Speaking*. Pearson, 2005.

Wilson, J. J. *How to Teach Listening*. Pearson, 2008.

Woodward, Tessa. *Planning Lessons and Courses*. Cambridge UP, 2001.

---. *How to Teach Grammar*. Pearson, 1999.

---. *How to Teach Vocabulary*. Pearson, 2002.

SEMESTER-II

Course Title: Literary Theory and Criticism –I
Course Code: SHSS ENG 01 02 C 06 3104

Objective: The course intends to provide a textual, historical and critical study of the developments in literary criticism from the beginning of 20th century to the present times. The course undertakes to offer a survey of all the major developments in literary criticism from the beginning of 20th century up to the present times.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed below.

1. Historical understating of how literary criticism and theory has evolved over these years.
2. Knowledge of some of the canonical texts written by established theorists in the field of literary theory and criticism.
3. Ability to explain the meaning, nature and definition of important critical traditions of the period.
4. Ability to trace and establish relationship between the evolution of critical theory and its socio-historical and political background.
5. Skill in using literary criticism and theory in practice to analyse and interpret literature and culture.

Course Content:

Unit-I Russian Formalism and New Criticism

- a) Viktor Shklovsky – “Art as Technique”
- b) Cleanth Brooks – “Irony as a Principle of Structure”

Unit-II Psychoanalytical Criticism

- a) Sigmund Freud – “Creative Writers and Day-dreaming”
- b) Jacques Lacan – “The Symbolic Order”

Unit-III Feminist Criticism

- a) Simone de Beauvoir – “Myth and Reality”
- b) Elaine Showalter – “Feminist Literary Criticism in the Wilderness”

Unit-IV Sociological/Marxist Criticism

- a. Raymond Williams – “Base and Superstructure in Marxist Cultural Theory”
- b. Louis Althusser – “Ideology and Ideological State Apparatuses”

Suggested Readings

Barry, Peter. *Beginning Theory: An Introduction to Literary & Cultural Theories*, 2nd ed., Manchester University Press, 2004.

- Bertens, Hans. *Literary Theory: The Basics*. Routledge, 2003.
- Blamires, Harry. *A History of Literary Criticism*. Macmillan, 2001.
- David Lodge (ed.), *Modern Criticism and Theory: A Reader*. Longman, 1988.
- Eagleton, Terry. *Marxism and Literary Criticism*. University of California Press, 1976.
- Freud, Sigmund. Trans. Alix Strachey. "The 'Uncanny.'" *The Norton Anthology of Theory and Criticism*. Ed. Vincent B. Leitch. W.W. Norton & Company, 2001.
- Habib, M.A.R. *A History of Literary Criticism: From Plato to the Present*. Blackwell, 2005.
- Ransom, John Crowe. *The New Criticism*. New Directions, 1941.
- Richards, I. A. *Practical Criticism*. Routledge & Paul, 1964.
- Robey, David and Ann Jefferson, *Modern Literary Theory*. Batsford, 1986.
- Waugh, Patricia. *Literary Theory & Criticism: An Oxford Guide*. Oxford University Press, 2006.
- Wimsatt and Brooks. *Literary Criticism: A Short History*. Oxford & IBH Pub. Co., 1974.

Course Title: Major Trends and Movements in English Literature-II

Course Code: SHSS ENG 01 02 C 07 3104

Objective(s):

To study important socio-political, cultural and literary developments to develop a chronological understanding of the major trends and movements of English Literature from Romantic Age to Twentieth Century.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed below.

1. Historical understating of English literature from Romantic Age to Twentieth Century.
2. Knowledge of the development of literary writings, their contexts, genres and prominent themes during the period under study.
3. Ability to explain the meaning, nature and definition of popular literary trends of the period.
4. Skill in analyzing and appreciating the important literary texts of the period.

Course Content:

Unit-I: Romantic Period

- a) Romanticism— Origin and Development of the Literary Movement
- b) Socio-political and Cultural Context
- c) Poets and Poetry of the Period
- d) Novelists and Novels of the Period
- e) Important Literary Trends and Texts

Unit-II: Victorian Age

- a) Socio-Political and Cultural Background
- b) Victorian Compromise
- c) Major Victorian Poets—Early and Later Victorian Poets
- d) Major Victorian Novelists
- e) Important Literary Trends and Texts

Unit-III: Modern English Literature

- a) Socio-Political, Aesthetic and Cultural Background
- b) Major Modern Poets
- c) Playwrights and Novelists
- d) Modernist Criticism
- e) Important Literary Trends and Texts

Unit-IV: Postcolonial Literature

- a) Postcolonialism— Socio-Political, Cultural and Literary Background
- b) Major Postcolonial writers and Theorists
- c) Important Postcolonial Literatures
- d) Key Concepts on Postcolonialism
- e) Literary Trends and Texts

Suggested Readings:

- Abrams, M.H. and Geoffrey Galt Harpham. *A Glossary of Literary Terms* (9th Edition). Cengage Learning, 2008.
- Ashcroft, Bill et al. *Post-Colonial Studies: The Key Concepts*. Routledge, 2013.
- Dahiya, Bhim S. *A New History of English Literature*. New Delhi: Doaba Publications, 2006.
- Daiches, David. *A Critical History of English Literature*. Vol. I-IV. New Delhi: Allied Publishers, 2005.
- Ford, Boris. Ed. *The New Pelican Guide to English Literature, Vol. 1-7*. Penguin Books, 1991.
- Gandhi, Leela. *Postcolonial Theory: A Critical Introduction*. Routledge, 2020.
- Hudson, William Henry. *An Outline History of English Literature*. New Delhi: Atlantic Publishers.
- Long, William J. *English Literature: Its History and Significance*. New Delhi: Kalyani Publishers, 2009.
- Richetti, John. Ed. *The Cambridge History of English Literature*. Cambridge University Press, 2005.

Course Title: British Poetry-II
Course Code: SHSS ENG 01 02 C 08 3104

Objective: This course intends to generate in the students an understanding of poetry as a genre and introduce them to the major English poets and poetry from Romantic Age to Modern Age (19th to 20th Century).

Course Level Learning Outcomes: Some of the learning outcomes that the students of this course are expected to demonstrate are listed below.

1. Understanding of the socio-political, religious and historical background of 19th and 20th century English poetry.
2. Knowledge of the major trends and features of romantic and modern poetry.
3. Ability to critically analyse and appreciate poetry.

Course Content:

Unit-I

- a) William Wordsworth – “Ode: Intimations of Immortality from Recollections of Early Childhood” and “Tintern Abbey”
- b) John Keats – “Ode to Nightingale” and “Ode on a Grecian Urn”

Unit-II

- a) Lord Alfred Tennyson – “Ulysses”
- b) Matthew Arnold – “Dover Beach”
- c) Robert Browning – “The Last Ride Together”, “My Last Duchess”
- d) Elizabeth Barrett Browning: “How do I love thee?”(Sonnet 43)

Unit-III

- a) W.B. Yeats – “The Second Coming” and “Sailing to Byzantium”
- b) T. S. Eliot – “The Love Song of J. Alfred Prufrock” and “The Hollow Men”

Unit-IV

- a) Philip Larkin – “Toads Revisited”
- b) Seamus Heaney – “Digging”
- c) Dylan Thomas – “Do not Go Gently into the Goodnight”
- d) Ted Hughes: “The Jaguar” and “Hawk Roosting”

Suggested Readings

Abrams, M.H., and Geoffrey Galt Harpham. *A Glossary of Literary Terms*. 10th ed., Cengage, 2012.

Bate, Walter Jackson. *John Keats*. OUP, 1996.

Brooks, Cleanth. *The Well Wrought Urn: Studies in the Structure of Poetry*. Dobson Books Ltd., 1960.

- Brooks, Cleanth, and Robert Penn Warren. *Understanding Poetry: An Anthology for College Students*. Henry Holt Company, 1939.
- Browning, Elizabeth Barrett. *Sonnets from the Portuguese*. Random House Value Publishing, 1997.
- Browning, Robert. *Men and Women and Other Poems*. Macmillan Publication, 2010.
- Fraser, G.S. ed., *Keats: The Odes*. Macmillan, 1971.
- Gifford, Terry. *The Cambridge Companion to Ted Hughes*. Cambridge University Press, 2011.
- Heaney, Seamus. *Death of a Naturalist*. Faber & Faber, 2006.
- Jeflars, A. Norman. *A Commentary on the Collected Poems of W.B. Yeats*. Stanford University Press, 1968.
- Larkin, Philip. *The Complete Poems*. Edited by Archie Burnett. Farrar, Straus and Giroux, 2013.
- Maxwell, D.E.S. *The Poetry of T.S. Eliot*. Routledge and Keagon Paul, 1960.
- Pritchard, William H. *W.B. Yeats: A Critical Anthology*. Penguin, 1972.
- Ricks, Christopher. *Selected Poems: Tennyson*. Penguin Classics, 2007
- Thomas, Dylan. *In Country Sleep and Other Poems*. New Directions Publications, 1952.
- Vendler, Helen. *The Odes of John Keats*. Harvard UP, 2003.
- Wordsworth, William. *William Wordsworth: Selected Poems*. Penguin Classics, 2004.

Course Title: British Novel-II
Course Code: SHSS ENG 01 02 C 09 3104

Objective: The primary objective of the course is to introduce the students with major 20th century British novelists and their works.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed here:

1. Understanding of the socio-historical environment of the 20th century and its impact on the development of novel.
2. Exhibition of knowledge of various trends and characteristics of modern British novel.
3. Ability to compare and contrast the thematic and technical experiments carried out by modern novelists.
4. Skill in textual analysis of the texts.
5. Appreciation of novel as a vehicle for social and cultural change.

Course Content:

Unit-I

D. H. Lawrence – *Sons and Lovers*

Unit-II

Virginia Woolf – *Mrs Dalloway*

Unit-III

Anthony Burgess – *A Clockwork Orange*

Unit-IV

John Fowles – *The French Lieutenant's Woman*

Suggested Readings:

Acheson, James. *John Fowles*. Macmillan, 1998.

Biswell, Andrew. *The Real Life of Anthony Burgess*. Picador, 2005.

Bradbury, Malcolm. *The Modern British Novel*. Penguin, 1993.

Clarke, Jim. *The Aesthetics of Anthony Burgess*. Palgrave Macmillan, 2017.

Draper, R. P. *D. H. Lawrence*. Routledge, 1997.

- Goldman, Jane. *The Cambridge Introduction to Virginia Woolf*. Cambridge University Press, 2006.
- Humphrey, Robert. *Stream of Consciousness in Modern Novel*. University of California, 1954.
- Boulton, James T. Ed. *D. H. Lawrence: Late Essays and Articles*. Cambridge University Press, 2004.
- Lawrence, D. H., and Bruce Steele. *Psychoanalysis and the Unconscious and Fantasia of the Unconscious*. Cambridge University Press, 2004.
- MacKay, Marina, and Lyndsey Stonebridge. *British Fiction after Modernism: The Novel at Mid-Century* by. Palgrave Macmillan, 2007.
- Norris, Nanette. *Modernist Myth: Studies in H.D., D.H. Lawrence, and Virginia Woolf*. Dreamridge Publishing, 2010.
- Page, Norman. *Muriel Spark*. Macmillan, 1990.
- Woolf, Virginia. *The Collected Essays of Virginia Woolf*. Ingram Short Title, 2011.
- . *A Room of One's Own and Three Guineas*. Oxford University Press, 2014.
- Parsons, Deborah. *Theorists of Modern Novel: James Joyce, Dorothy Richardson, Virginia Woolf*. Routledge, 2006.

Course Title: British Drama- II
Course Code: SHSS ENG 01 02 C 10 3104

Objective: This course aims to introduce students to modern and post-modern British drama, its historical and intellectual contexts, and major modern and post-modern dramatists.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed here:

1. Understanding of major trends and developments in British Drama from 20th century to till date.
2. Knowledge of the major genres and forms of drama and fundamental skills in closely reading and appreciating drama.
3. Ability to appreciate and analyze the plays in the larger socio-political and religious contexts.
4. Skill in dialogue delivery and dramatic performance.

Course Content:

Unit-I

George Bernard Shaw: *Candida*

Unit-II

T.S. Eliot – *Murder in the Cathedral*

Unit-III

John Osborne – *Look Back in Anger*

Unit-IV

Samuel Beckett – *Waiting for Godot*

Suggested Readings:

Abrams, M.H. and Geoffrey Galt Harpham. *A Glossary of Literary Terms* (11th Edition). Cengage Learning, 2015.

Bachner, Saskia. *The Omnipresent Emptiness in Samuel Beckett's "Waiting for Godot"*. Germany: GRIN Verlag, 2008.

Baldick, Chris. *The Oxford Dictionary of Literary Terms*. (3rd Ed.) USA: OUP, 2009. Behan, Tom. *Dario Fo: Revolutionary Theatre*. London: Pluto, 2000.

Bloom, Harold. *Berthold Brecht*. USA: Chelsea House, 2002.

Brecht, Bertolt. *Brecht on Theater: The Development of an Aesthetic, edited and translated by John Willett*. London: Methuen, 1992.

Chandler, Frank Wadleigh. *Aspects of Modern Drama*. New York: Macmillan, 1914.

Cornwel, Neil. *The Absurd in Literature*. Manchester: Manchester University Press, 2006.

Esslin, Martin. *The Theatre of the Absurd*. London: Penguin, 1980.

Northam, John. *Ibsen's Dramatic Method*. London: Fabor, 1953.

Williams, Raymond. *Drama: From Ibsen to Eliot*. London: Chatto & Windus, 1952.

Course Title: Introduction to Translation: Theory and Practice
Course Code: SHSS ENG 01 02 E 05 3104

Course Objectives: The course intends to introduce the students with Translation Studies as an emerging discipline. They will get an opportunity to be familiar with the main issues involved in the process of translation. The focus shall be on literary translation and the way it is different from other translations. The course coordinator shall demonstrate how the translation process is highly cultural specific. The course is designed as a blend of theory and practice of translation. The students will have an assignment where they have to translate a piece of prose to English.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Appreciate the process of translation
2. Begin translation from one language to another
3. Learn skills of translation that may help them become translators later on
4. Appreciate diverse writings and cultures which will enable them to connect with these cultures in a diverse country like India and become socially aware citizens

Unit-I: Introduction to Translation

Language and Culture
History of Translation
Types of Translation
Essential Components of Translation

Unit-II: Translation Studies

Emergence of the Discipline
Theories of Translation
Cultural Issues in Translation
Future of Translation

Unit-III: Literary Translation

Literature and Translation
Translating Poetry
Translating Prose
Translating Dramatic Texts
Untranslatability and Problem of Equivalence

Unit-IV: Translation and Indian Context

Krishnamurthy, Ramesh. "Translation: The Indian Tradition." *Routledge Encyclopedia of Translation Studies*. ed. Mona Baker. London and New York: Routledge, 1998.

Premchand, Munshi. "Kafan" (Three different translations)

Practice Assignments on Various Types of Translation

Suggested Readings

Baker, Mona and Gabriela Saldanha. *Routledge Encyclopedia of Translation Studies*. Routledge, 2020.

Bassnet, Susan. *Translation Studies*. Routledge, 2002.

Bassnett, Susan and Harish Trivedi. *Post-Colonial Translation: Theory and Practice*. Routledge, 1999.

Choudhury, Indranath. "Towards an Indian Theory of Translation." *Indian Literature*, September-October 2010, 113-123.

Kumar, Akshaya. "Translating Bhakti: Versions of Kabir in Colonial/Early Nationalist Period". *Indian Literature*, vol. 50, no. 1 (231), January-February 2006, 149-165.

Malmkjær, Kirsten and Kevin Windle. *The Oxford Handbook of Translation Studies*. Oxford UP, 2011.

Millán, Carmen and Francesca Bartrina. *The Routledge Handbook of Translation Studies*. Routledge, 2012.

Munday, Jeremy. *Introducing Translation Studies: Theories and Applications*. Routledge, 2016.

Palumbo, Giuseppe. *Key Terms in Translation Studies*. Continuum, 2009.

Phukan, Shibani. "Towards an Indian Theory of Translation." n.d. 20 August 2016.

<http://www.tandfonline.com/doi/pdf/10.1080/02690050308589864?needAccess=true>

Shuttleworth, Mark. *Dictionary of Translation Studies*. Routledge, 1997.

Simon, Sherry. *Gender in Translation: Cultural Identity and the Politics of Transmission*. Routledge, 1996.

Spivak, Gayatri Chakravarty. "The Politics of Translation." *Outside the Teaching Machine*.
Routledge, 1993.

Venuti, Lawrence. *The Translation Studies Reader*. Routledge, 2000.

Course Title: Indian Classical Literature

Course Code: SHSS ENG 01 02 E 06 3104

Objective: To introduce the students to the rich and diverse classical literature of India and also to Indian poetics and aesthetics.

Course Learning Outcomes: Some of the learning outcomes the students are expected to demonstrate are listed here.

- Understanding of Indian aesthetics and Classical literature.
- Ability to understand and interpret relevant theory and Indian classical texts.
- Ability to appreciate and analyze the stories, epic(s) and plays in relation to their cultural and historical contexts.
- Literary and research interest in Indian classical literature and poetics.
- Ability to appreciate Indian art and culture.

Course Content:

Unit-I Essence of Indian Poetics

On syntax and poetic meaning, structure of poetic meaning, figures of Speech & thought, epic poetry, *Nāṭya* and *Rasa* from Bharatamuni's *Nāṭyasāstra*, Bhāmaha's *kāvyaḷamkāra*, Kuntaka's *Vakroktijīvitam*, Anandavardhana's *Dhvanyāloka*

Unit-II: Selections from *The Mahabharata*

- a) 'The Dicing' and 'Sequel to Dicing', Book 2, Sabha Parva Section XLVI-LXXII
- b) 'The Temptation of Karna', Book 5, Udyog Parva, Section CXL-CXLVI
- c) 'Dhritrashtra and Gandhari's Wrath', Book 11, Section XI-XV

Unit –III:

Ilango Adigal, *The Cilappatikaram*, Cantos 1, 2, 7, 18, 19, 20, 21, 22, 24, 26, 30, trans. R. Parthasarathy (Columbia University Press, 1993; Penguin India, 2004)

Unit-IV:

Sudraka's *Mrichchhakatika*

Suggested Readings:

Bharata. *Nāṭyaśāstra*. Ed. Manomohan Ghosh. The Royal Asiatic Society of Bengal, 1950.

Bhāmaha. *Kāvyaḷamkāra*. Ed. P.V. Nāganātha Sāstrī. Delhi: Motilal Banarsidasa, 1991.

Bhartṛhari. *Vākyapdi*. Delhi: Motilal Banarsidass, 1971.

Kalidasa, *Abhijnanasakuntalam*, trans. Chandra Rajan, in *Kalidasa: The Loom of Time*, Penguin Classics, 1989.

Kapoor, Kapil. *Literary Theory, Indian Conceptual Framework*. East-West Press Pvt. Ltd., 1998.

Krishnamoorthi, K. *Essays in Sanskrit Criticism*. Karnataka University, 1964.

--- . *Ānandavardhana's Dhvanyāloka*. Poona Oriental Series, 1952.

--- . Kuntaka. *Vakroktijīvitam*. Ed. K. Krishnamoorthy. Karnataka University, 1977.

Sudraka. *The Mrichchhakatika of Sudraka*, trans. M. R. Kale. Motilal Banarsidas Publishers, 1924, reprint 2013.

Vyas. *The Mahabharata of Krishna-Dwaipayana Vyasa*, trans. K. M. Ganguli. Munshiram Manoharlal Publishers, 2012.

Warder, A.K. *Indian Kavya Literature: Literary Criticism*. Vol.1. Motilal Banarsidas Publishers, 2009.

Course Title: Dalit Literature and Aesthetics

Course Code: SHSS ENG 01 02 E 07 3104

Course Objective: The course intends to make the students familiar with the intent and contents of Dalit literature and aesthetics. The prescribed texts represent different genres to provide comprehensive understanding of Dalit context and the paradigms of Dalit literature.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Develop a historical understating of how Dalit literature and aesthetics has evolved over the years.
2. Detail study of some of the canonical texts written by established names in the field of Dalit literature and aesthetics.
3. Explain the meaning, nature and definition of important critical terms.
4. Discuss the socio-historical and political background of Dalit literature and aesthetics.
5. Provide a conceptual framework for developing an understanding of the function and practice of alternative aesthetics.

Course Content:

Unit-I: Autobiography

Om Prakash Valmiki's *Joothan: An Untouchable's Life*

Unit-II: Novel

G. Kalyana Rao's *Untouchable Spring*

Unit-III: Poetry

Namdeo Dhasal's "Hunger"

Challapali SwarupaRani's "Wild Flower"

Bama's "The Scent of Mother"

M.R. Renu Kumar's "The Poisoned Fruit"

Unit-IV: Short Stories

Bandhumadhav's "The Poisoned Bread"

Shyamal Kumar Pramanik's "Survival"

Suggested Readings:

Ahmad, Imtiaz and Upadhyay. *Dalit Assertion in Society Literature and History*. Orient Blackswan, 2010.

Ambedkar, B.R. *Annihilation of Caste: The Annotated Critical Edition*. Navayana, 2014.

Bama. *Karukku*. OUP, 2004.

- . *Sangati: Events*. OUP, 2008.
- . *Vanmam (Vendetta)*. OUP, 2008.
- Chakravorty, Uma. *Gendering Caste*. Popular Prakashan, 2003.
- Dangle, Arjun, ed. *Poisoned Bread*. Orient Blackswan, 2009.
- Gajarawala, ToralJatin. *Untouchable Fictions: Literary Realism and the Crisis of Caste*. Fordham University Press, 2012.
- Ganguly, Debjani. *Caste and Dalit Lifeworlds: Postcolonial Perspectives*. Orient Longman, 2008.
- Ilaiah, Kancha. *Why I am Not a Hindu: A Sudra Critique of Hindutva Philosophy, Culture and Political Economy*. Samya, 2005.
- Jaffrelot, Christopher. *Dr. Ambedkar and Untouchability: Analysing and Fighting Caste*. C. Hurst & Co. Publishers, 2005.
- Kumar, Raj. *Dalit Personal Narratives*. Orient Blackswan, 2010.
- . *Dalit Literature and Criticism*. Orient BlackSwan, 2019.
- Kumar, Ravi and Azhagarasan. *The Oxford India Anthology of Tamil Dalit Writing*. OUP, 2012.
- Limbale, Sharankumar. *Towards an Aesthetic of Dalit Literature*. Translated by Alok Mukherjee, Orient Blackswan, 2004.
- . *Hindu: A Novel*. Samya Publications, 2010.
- Nagaraj, D R. *The Flaming Feet and Other Essays: The Dalit Movement in India*. University of Chicago Press, 2011.
- Omvedt, Gail. *Dalit Visions*. Orient Blackswan, 2006.
- . *Ambedkar: Towards an Enlightened India*. Penguin, 2008.
- Purushotham, Gita Ramaswamy, Gogu Shayamala et al. *The Oxford India Anthology of Telegu Dalit Writing*. OUP, 2016.
- Rao, Anupama. *The Caste Question: Dalits and the Politics of Modern India*. Permanent Black, 2009.
- Rege, Sharmila. *Writing Caste/ Writing Gender*. Zubaan 2006.

Singha, Sankar Prasad and Indranil Acharya. *Survival and Other Stories: Bangla Dalit Fiction in Translation*. Orient Blackswan, 2012.

Course Title: Canadian Literature
Course Code: SHSS ENG 01 02 E 08 3104

Objective: This course aims to provide a broad historical survey of Canadian writing and introduce students to some of the major authors of Canadian literature.

Course Level Learning Outcomes

Some of the learning outcomes that the students of this course are expected to demonstrate are listed here.

1. Historical understating of Canadian literature
2. Understanding of some of the canonical texts written by established Canadian authors.
3. Ability to discuss the social, historical, political, and cultural background of Canadian literature.

Course Content:

Unit-I

- a) F.R. Scott: “The Canadian Authors Meet”
 “Lakeshore”
 “Laurentian Shield”
- b) Margaret Atwood: “This is a Photograph of Me”
 “The Circle Game”
 “The Animals in that Country”
 “The Explorer”
 “The Settler”

Unit-II

Yann Martel: *Life of Pi*

Unit-III

Morris Panych: *7 Stories*

Unit-IV

Northrop Frye: “Conclusion to A Literary History of Canada”

Suggested Readings:

Atwood, Margret. *Survival: A Thematic Guide to Canadian Literature*. Anansi, 1984.

Brown, E. K. *On Canadian Poetry*. Tecumesh Press, 1973.

Frye, Northrop. *The Bush Garden: Essays on Canadian Imagination*. Anansi, 1971.

New, H. W., ed. *Literary History of Canada*. Vol 4 Toronto: Univ. of Toronto Press, 1990.

Rao, T Nageshwar. *Inviolable Air Canadian Poetic Modernism in Perspective*. Delhi: B. R. Publication, 1994.

Sharma, Shrawan K. *Phases of Canadian Poetic Culture*. Meerut: Shalabh Publishing House, 2001.

SEMESTER-III

Course Title: Literary Theory and Criticism –II

Course Code: SHSS ENG 01 03 C 11 3104

Objective(s): The course proposes to study literary theory as an intellectual and critical activity in the 20th Century. The purpose of the course is the analysis of some of the major essays that are central to the understanding of these literary and critical theories. The course takes up major strands of modern literary theory and provides a conceptual context for an understanding of the function and practice of modern literary and cultural criticism.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Develop a historical understating of how literary criticism and theory has evolved over these years.
2. Detail study of some of the canonical texts written by established theorists in the field of literary theory and criticism.
3. Explain the meaning, nature and definition of important critical traditions of the period.
4. Trace the evolution of Critical Theory with its socio-historical and political background.
5. Provide a conceptual framework for developing an incisive understanding of the function and practice of different literary methodologies available to a student.

Course Content:

Unit- I: Structuralism

Ferdinand de Saussure: “The Nature of Linguistic Sign” in David Lodge (ed.) *Modern Criticism and Theory: A Reader*. Longman, 1988: 10-14.

Claude Levi Strauss: "Structural Analysis in Linguistics and in Anthropology" in *Structural Anthropology*. Trans by Claire Jacobson. Basic Books Inc., 1963. 31-54.

Unit- II: Poststructuralism and Deconstruction

Roland Barthes: “The Death of the Author” from Roland Barthes, *Image, Music, Text*. Flamingo, 1977: 142-48.

Jacques Derrida: "Structure, Sign & Play in the Discourse of Human Sciences" in J. Derrida. *Writing and Difference*. Translated by Alan Bass, University of Chicago Press, 1978: 278-93.

Unit-III: Postmodernism

Jean Francois Lyotard: "Answering the Question: What is Postmodernism?" translated by Regis Durand in *The Postmodern Condition*. Manchester University Press, 1984.

Jean Baudrillard: "The Spirit of Terrorism," Translated by Chris Turner in *The Spirit of Terrorism and Other Essays*. Verso, 2003.

Unit- IV: New Historicism and Cultural Materialism

Stephen Greenblatt: "Introduction" in *Renaissance Self –Fashioning*. University of Chicago Press, 1980. 1-9.

Alan Sinfield and Jonathan Dollimore: "Foreword" and "Introduction" in *Political Shakespeare: New Essays in Cultural Materialism*. Cornell, 1985. vii-viii & 2-17.

Suggested Readings:

Bertens, Hans. *Literary Theory: The Basics*. Routledge, 2017.

Bishop, Ryan (ed.). *Baudrillard Now: Current Perspectives in Baudrillard Studies*. Polity, 2009.

Connor, Steven. *The Cambridge Companion to Postmodernism*. Cambridge University Press, 2004.

Culler, Jonathan. *Barthes*. Fontana, 1983.

Derrida, Jacques. *Positions*. Translated by Alan Bass, University of Chicago Press, 1981.

Derrida, Jacques. *Speech and Phenomena and Other Essays on Husserl's Theory of Signs*. Translated by David B. Allison, Northwestern UP, 1973.

During, Simon. *Foucault and Literature: Towards a Genealogy of Writing*. Routledge, 2013.

Eagleton, Terry. *After Theory*. Penguin UK, 2004.

Goulimari, Pelagia. *Literary Criticism and Theory: From Plato to Postcolonialism*. Routledge, 2014.

- Guerin, Wilfred L. *A Handbook of Critical Approaches to Literature*. Oxford University Press, 2005.
- Habib, M.A.R. *A History of Literary Criticism: From Plato to the Present*. Blackwell, 2005.
- Hawthorn, Jeremy. *A Concise Glossary of Contemporary Literary Theory*. Edward Arnold, 1992.
- Hayes, Bruce, et al. Victoria A. Fromkin (ed.) *Linguistics: An Introduction to Linguistic Theory* (John Wiley & Sons, 2013)
- Jefferson, Ann and David Robey, eds. *Modern Literary Theory*. Barnes and Noble, 1982.
- Klages, Mary. *Key Terms in Literary Theory*. A&C Black, 2012.
- Leitch, Vincent B and William E Cain. *Norton Anthology of Theory and Criticism*. W. W. Norton & Company, 2010.
- Makaryk, Irene Rima. *Encyclopedia of Contemporary Literary Theory: Approaches, Scholars, Terms*. University of Toronto Press, 1993.
- Rivkin, Julie and Michael Ryan. *Literary Theory: An Anthology*. John Wiley & Sons, 2017.
- Tyson, Lois. *Critical Theory Today*. Routledge, 2014.
- Waugh, Patricia. *Literary Theory and Criticism: An Oxford Guide*. Oxford UP, 2005.
- Woods, Tim. *Beginning Postmodernism*. Manchester University Press, 1999.

Course Title: Postcolonial Theory and Literature

Course Code: SHSS ENG 01 03 C 12 3104

Objective(s): To introduce the students with the Postcolonial theory and literature so as to help them develop appreciation for literatures from different regional and national contexts.

Course Level Learning Outcomes:

Some of the learning outcomes, that the students of this course are expected to demonstrate, are listed as follows:

1. Develop understanding of the key concepts of Postcolonial Literature and theory.
2. Elaborate, analyse and appreciate the important Postcolonial approaches, texts and the writers from diverse contexts.
3. Discuss the concept of Postcolonial Literature vis-à-vis regional/national literatures.
4. Elaborate the relevance of Postcolonial Literature and theory vis-à-vis regional literatures.

Course Content:

Unit-I: Postcolonial Theory and Literature—Definition and Key Concepts

Postcolonial Theory and Literature

Key Concepts in Postcolonial Literature

Edward Said: "Introduction" to *Orientalism*

Major Postcolonial Writers and Works

Unit-II:

Doris Pilkington

Rabbit Proof Fence

Unit-III:

Jean Rhys

Wide Sargasso Sea

Unit-IV:

Chinua Achebe

Things Fall Apart

Suggested Readings:

Bill Ashcroft, Gareth Griffiths and Helen Tiffin, eds. *The Post-Colonial Studies Reader*. Routledge, 2006.

---. *Key Concepts in Post-Colonial Studies*. Routledge, 1998.

- Bhabha, Homi. *The Location of Culture*. Routledge, 1994.
- Gikandi, Simon. *The Cambridge History of African and Caribbean Literature*. CUP, 2004.
- King, Bruce, ed. *The New National and Postcolonial Literatures: An Introduction*. Clarendon Press, 1998.
- Loomba, Ania. *Colonialism/ Postcolonialism*. Routledge, 1998.
- Quayson, Ato, ed. *The Cambridge History of Postcolonial Literature*. Cambridge University Press, 2012.
- Said, Edward. "Introduction" to *Orientalism*. Routledge, 1978. 1-28.
- Wheeler, Belinda (Ed.). *A Companion to Australian Aboriginal Literature*. Camden House, 2013.
- Williams Patrick and Laura Chrisman. *Colonial Discourse and Post-Colonial Theory A Reader*. Routledge, 1994.

Course Title: Indian Writings in English
Course Code: SHSS ENG 01 03 C 13 3104

Course Objectives: To introduce literary texts from a range of cultural, social, political and regional locations within India and inculcate an in-depth understanding of some of the major issues shaping this literary production.

Course Level Learning Outcomes: Some of the learning outcomes of this course are listed as follows:

1. Students will develop the understanding of Indian English Literature and its oeuvre through selected literary texts across genres.
2. They will appreciate and analyze the texts in relation to the colonialism, nationalism and globalization.
3. They will be able to approach and demonstrate the textual understanding from the perspectives of multiple Indian subjectivities.
4. Students will be in position to extend the knowledge of life in literature and lived situations.

Course Content:

Unit-I: Poetry

- (i) A.K. Ramanujan -“The Striders” and “Love Poem for a Wife, I”
- (ii) Nissim Ezekiel – “Night of the Scorpion” and “Poet, Lover and Birdwatcher”
- (iii) Jayanta Mahapatra – “Hunger” and “A Rain of Rites”

Unit-II: Novel

Raja Rao’s *Kanthapura*

Unit-III: Drama

Mahesh Dattani’s *Tara*

Unit-IV: Short Stories

- (i) R.K. Narayan’s “An Astrologer’s Day” from *Malgudi Days*
- (ii) Mulk Raj Anand’s “The Lost Child” from *The Lost Child and Two Lyrical Stories*
- (iii) Shashi Deshpande’s “The Intrusion” from *The Intrusion and Other Stories*
- (iv) Temsula Ao’s "Soaba" from *These Hills Called Home: Stories from a War Zone*.

Suggested Readings:

- Damodhar, G. "Search for Identity: An Estimate of Ezekiel's Poetry." *Nissim Ezekiel: A Critical Companion*. Ed. G. S. Balarama Gupta. Pencraft, 2012. 79-85.
- Deshpande, Shashi. *The Intrusion and Other Stories*. Penguin India, 1993.
- Iyengar, K.R.S. *Indian Writing in English*. Sterling, 1985.
- King, Bruce. *Modern Indian Poetry in English*. Oxford University Press, 1987.
- Kumar, Akshay. A.K. *Ramanujan: In Profile and Fragment*. Rawat Publications, 2004.
- Lal, E.N. *The Poetry of Encounter: Dom Moraes, A.K. Ramanujan and Nissim Ezekiel*. Sterling, 1983.
- Mehrotra, A. K. ed. *An Illustrated History of Indian Literature in English*. Permanent Black, 2003.
- Mukherjee, Meenakshi. *Twice Born Fiction*. New Delhi: Heinemann, 1971.
- . *The Perishable Empire: Essays on Indian Writing in English*. Oxford University Press, 2000.
- Naik, M.K. *Raja Rao*. Twayne Publishers Inc., 1972.
- . ed. *Aspects of Indian Writing in English*. Macmillan, 1979.
- Parthasarathy, R. ed. *Ten Twentieth Century Indian Poets*, Oxford University Press, 1976.
- Shyamala, A. Narayan: *Raja Rao (Man and His Works)*. New Delhi: Sterling, 1988.
- Tharu, S. and K. Lalitha. *Women Writing in India: 600 BC to the Present*, 2 vols. New Delhi: Oxford University Press, 1995.

Course Title: Introduction to Linguistics

Course Code: SHSS ENG 01 03 C 14 3104

Objective: The primary objective of the course is to familiarize the students with the basic concepts of language and linguistics and provide them a theoretical as well as practical knowledge of modern English structure.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed here.

1. Understanding of language and linguistics and various branches of linguistics.
2. Knowledge of speech sounds, the process of their production, and their classification.
3. Understanding and application of English grammar to use language correctly.

Course Content:

Unit-I Introduction

- a) Definitions of Language
- b) Origin of Language
- c) Properties of Human Language
- d) Branches of Linguistics

Unit-II Phonetics and Phonology

- a) Articulatory, Auditory, Acoustic Phonetics
- b) Consonants and Vowels
 - 1) Consonants: Voiced and Voiceless; Place and Manner of Articulation
 - 2) Vowels: Monophthongs and Diphthongs
- c) Phonemes, Phones, and Allophones
- d) Syllables
- e) Co-articulation Effects: Assimilation, Nasalization and Elision

Unit-III Grammar: Morphology and Syntax

- a) Morphemes
 - 1) Free and Bound
 - 2) Lexical and Functional
 - 3) Derivational and Inflectional
- b) Morphs and Allomorphs

- c) Word-Formation: Coinage, Borrowing, Compounding, Back-Formation, Clipping etc.
- d) Structural and Constituent Analysis of Sentences
- e) Surface and Deep Structure, and Tree-diagrams

Unit-IV Semantics and Pragmatics

- a) Semantic Features and Semantic Roles
- b) Lexical Relations: Synonymy, Antonymy, Hyponymy, Homonymy, Polysemy, Metonymy
- c) Context, Reference and Presupposition: Deixis, Inference, Anaphora, Cataphora
- d) Speech-Acts: Direct and Indirect

Suggested Readings:

- Aitchison, Jean. *The Articulate Mammal*. Routledge, 2011.
- Cowie, A. P. *Semantics*. OUP, 2009.
- Hurford, James. *The Origins of Language*. OUP, 2014.
- Jespersen, Otto. *Language: Its Nature, Development and Origin*. George Allen & Unwin, 1922.
- Kroeger, Paul. *Analysing Grammar: An Introduction*. Cambridge UP, 2005.
- Ladefoged, Peter. *A Course in Phonetics*. 7th ed., Cengage Learning, 2015.
- Lyons, John. *Language and Linguistics: An Introduction*. Cambridge UP, 1981.
- Payne, Thoman E. *Exploring Language Structure: A Student's Guide*. Cambridge UP, 2006.
- Robins, R. H. *General Linguistics*. 4th ed., Routledge, 1989.
- Tallerman, Mageie. *Understanding Syntax*. 4th ed., Routledge, 2014.
- Yule, George. *Pragmatics*. Oxford UP, 1996.
- . *The Study of Language*. 7th ed., Cambridge UP, 2020.

Course Title: Creative Writing
Course Code: SHSS ENG 01 03 E 09 3104

Objective(s): This course aims to—

- Apply critical and theoretical approaches to the reading and analysis of literary texts in multiple genres;
- Identify, analyze, interpret and describe critical ideas, themes, values that consist of literary texts and perceive the ways to evaluate how ideas, themes and values create an impact on societies, both in the past and present;
- Become capable of producing poems or literary non-fictional pieces that are original and engaging;
- Articulate an awareness of the relationship between the individual works and conventional literary work;
- Become capable of passing judgment whether a journal or a press is better venue for publishing literary work.

Course Level Learning Outcomes

Some of the course learning outcomes that students of this course are required to demonstrate are:

1. Develop creativity in writing and discern the difference between academic/non creative and creative writing;
2. Develop a thorough knowledge of different aspects of language such as figures of speech, language codes and language registers so that they can both, identify as well as use these; in other words, they must learn that creative writing is as much a craft as an art
3. Develop a comprehensive understanding of some specific genres such as fiction, poetry, drama and newspaper writing
4. Distinguish between the sub divisions within each genre(such as in poetry, different forms like sonnets, ballads, haiku, *ghazal*, etc)

Course Content:

Unit-I

What is Creative Writing?

The Art and Craft of Writing

Unit-II

Modes of creative Writing

Poetry

Fiction

Drama

Unit-III

Writing for the Media

Print Media

Broadcast Media

New Media

Advertising

Unit-IV

Preparing for Publication

Suggested Readings:

Dev, Anjana Neira. *Creative Writing: A Beginner's Manual*. Pearson, Delhi, 2009.

Morley, David. *The Cambridge Introduction to Creative Writing*. Cambridge, New York, 2007.

Course Title: Contemporary South Asian Fiction in English

Course Code: SHSS ENG 01 03 E 10 3104

Objective(s): To introduce the students with major trends in South Asian Literature and writers so as to help them develop appreciation for literatures from different South Asian countries.

Course Level Learning Outcomes:

Some of the learning outcomes, that the students of this course are expected to demonstrate, are listed as follows:

1. Develop critical understanding of the socio-historical and cultural ethos reflected in South Asian literature.
2. Elaborate, analyse and appreciate the important South Asian texts and the writers from diverse contexts.
3. Discuss the concept of South Asian Literature vis-à-vis regional/national literatures.
4. Elaborate the relevance of South Asian Literature vis-à-vis popular British Literature.

Course Content:

Unit-I:

Monica Ali: *The Brick Lane*

Unit-II:

Khaled Hosseini: *The Kite Runner*

Unit-III:

Michael Ondaatje: *Anil's Ghost*

Unit-IV:

Kamila Shamsie: *Home Fire*

Suggested Readings:

Brians, Paul. *Modern South Asian Literature in English*. Greenwood Press, 2003.

Ghosh, Amitav. *Jungle Nama: A Story of the Sundarban*. HarperCollins India, 2021.

Hosseini, Khaled. *The Kite Runner*. Bloomsbury, 2013.

Ondaatje, Michael. *Anil's Ghost*. Vintage, 2001.

Pollock, Sheldon (Ed). *Literary Cultures in History: Reconstructions from South Asia*. University of California Press, 2003.

“Literature of South Asia and Indian Diaspora”. <http://sasialit.org/>.

Raychaudhuri, Anindya. *South Asian Partition: Oral History, Literature, Cinema*. OUP, 2019.

Roy, Rituparna. *South Asian Partition Fiction in English*. Amsterdam University Press, 2010.

Shamsie, Kamila. *Home Fire*. Bloomsbury, 2017.

Course Title: Literature of Protest

Course Code: SHSS ENG 01 03 E 11 3104

Objective(s): The purpose here is to introduce our students with the revolutionary potential of literature. The way literature can work as a progressive force in the society and assumes the role of a vehicle of protest against hegemonic elements will be really interesting. This course assures a sound imagination to the students along with enjoyment and learning.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate, are listed as follows:

1. Develop a historical understating of how literature has contributed to the progressive changes in the human society over these years.
2. Trace the evolution of Protest Writings with its socio-historical and political background in South Asia.
3. Provide a conceptual framework for developing an understanding of the function and practice of Protest Writings as a counter discourse to hegemonic tendencies within a society.
4. Detail study of some of the texts written by established writers and thinkers in the relevant areas.

Course Content:

Unit-I

Faiz Ahmad Faiz: "We Shall See"
Agha Shahid Ali: "Postcard from Kashmir"
Namdeo Dhasal: "Kamatipura"
Arun Kolatkar: "The Shit Sermon"
Kamala Das: "The Looking Glass"
Meena Kandasamy: "Backstreet Girls"

Unit-II

Ismat Chughtai : "The Quilt"
Saadat Hasan Manto: "Nowhere Land"

Unit-III

U.R. Ananthamurthy: *Samskara: A Rite for a Dead Man*

Unit- V

Dakxinkumar Bajrange: *Bhudhan: A Play by Denotified Chharas* (translated by Sonal Baxi)

Suggested Readings:

Ali, Agha Shahid. *The Country without a Post Office*. Penguin, 2013.

- Ananthamurthy, U R. *Samskara: A Rite for a Dead Man*. OUP, 1997.
- Chughtai, Ismat. *The Quilt and Other Stories*. Women Unlimited, 2004.
- Das, Kamala. *Selected Poems*. Penguin, 2014.
- Devy, G N. *Painted Words: An Anthology of Tribal Literature*. Penguin India, 2003.
- Dhasal, Namdeo. *Poet of the Underworld*. Lavanaya Pub, 2000.
- Kandasamy, Meena. *Ms. Militancy*. Navayana, 2010.
- Kolatkhar, Arun. *Reading Together: Kala Ghoda Poems*. Pras Pub., 2004.
- Kumar, Akshaya. *Poetry, Politics and Culture: Essays on Indian Texts and Contexts*.
Routledge, 2009.
- Manto, Saadat Hassan. *Manto: Selected Short Stories*. Vintage, 2012.
- Schwartz, Henry. *Constructing the Criminal Tribe in Colonial India: Acting Like a Thief*.
Wiley Pub. 2010.

Course Title: Gender and Literature

Course Code: SHSS ENG 01 03 E 12 3104

Objective: The primary objective of this course is to introduce the students with the concept of gender and its relationship with literature at multiple levels like representation, production, evaluation etc., and acquaint them with various debates and theories related to gender issues.

Course Level Learning Outcomes:

After studying the course, students are expected to—

1. Demonstrate an understanding of themes and issues related to gender and their representation in literature.
2. Analyse, discuss, and evaluate texts critically.
3. Connect issues of race and third gender with literary themes.
4. Construct and synthesize ideas and produce them as coherent arguments.

Course Content:

Unit-I

Mahasweta Devi – *Breast Stories*

Unit-II

Alice Walker – *The Color Purple*

Unit-III

A. Revathi – *The Truth about Me: A Hijra Life Story*

Unit-IV

Ursula K. Le Guin – *The Left Hand of Darkness*

Suggested Readings:

- Butler, Judith. *Gender Trouble: Feminism and the Subversion of Identity*. Routledge, 2010.
- Cummins, Elizabeth. *Understanding Ursula K. Le Guin*. University of South Carolina, 1993.
- Donnelly, Mary. *Alice Walker: The Color Purple and Other Works*. Marshall Cavendish Benchmark, 2010.
- Evans, Mary and Carolyn H. Williams, editors *Gender: The Key Concepts*. Routledge, 2013.
- Gilbert, Sandra and Susan Gubar: *The Madwoman in the Attic*. Yale University Press, 2020.
- Glover, David and Cora Kaplan. *Genders*. Routledge, 2005.

- Pomeroy, B. Sarah. *Goddesses, Whores, Wives, and Slaves: Women in Classical Antiquity*. Schocken Books, 1995.
- Rege, Sharmila. *Writing Caste: Writing Gender*. Zubban, 2006.
- Revathi, A. *Our Lives, Our Words: Telling Aravani Lifestories*. Yoda Press, 2011.
- Ruthwen, K.K. *Feminist Literary Studies: An Introduction*. Cambridge University Press, 1984.
- Showalter, Elaine. *A Literature of Their Own*. Virago, 2009.
- Sterling, Anne Fausto. *Sex/ Gender: Biology in a Social World*. Routledge, 2012.
- Stubbs, Patricia. *Women and Fiction*. Harvester Press, 1979.
- Supreme Court Verdict on Third Gender (WRIT PETITION (CIVIL) NO.400 OF 2012).
<http://supremecourtindia.nic.in/outtoday/wc40012.pdf>.

Course Title: Disability Studies and Literature

Course Code: SHSS ENG 01 03 E 13 3104

Course Objectives:

1. To promote sensitivity and understanding regarding disability amongst the students and researchers in various disciplines by engaging them with a relatively fresh interdisciplinary domain of Disability Studies in relation to literature.
2. To familiarize students with historical outlooks, disability theories and issues in relation to socio-cultural context and disability representations in literature.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Understanding of issues and concerns of persons with disabilities who are fast being included in the mainstream higher education system, both in terms of numbers, as resources and also as voices in the academic curriculum.
2. Ability to explore Disability Studies as a relatively fresh area of study and research.
3. Sensitivity towards issues concerning differently-abled population.
4. Creative interpretation of disability from literary perspective.

Course Content:

Unit I: Basics of Disability Studies

Michael Oliver: *Understanding Disability: From Theory to Practice*

Unit II: Autobiography

Helen Keller: *The Story of My Life*

Unit III:

Munshi Premchand: *Rangbhoomi*

Unit IV: Short Stories and Poems

Raymond Carver: "Cathedral"

Rabindranath Tagore: "Subha"

Wilfred Owen: "Disabled"

Sylvia Plath: "Lady Lazarus"

Suggested Readings:

- Addlakha, Renu. *Disability Studies in India: Global Discourses, Local Realities*. Taylor & Francis, 2013.
- Barnes, Colin, Geoffrey Mercer and Tom Shakespeare. *Exploring Disability: A Sociological Introduction*. Cambridge; Malden, MA: Polity Press. 1999.
- Carver, Raymond. "Cathedral". *Cathedral: Stories by Raymond Carver*, Knopf. 1983.
- Davis, Lennard J. *The Disability Studies Reader*. Routledge, 1997.
- Keller, Helen. *The Story of My Life* (1903). New York: Doubleday, 1954.
- McRuer, Robert. *Crip Theory: Cultural Signs of Queerness and Disability*. New York University Press, 2006.
- Mitchell, David T and Sharon L. Snyder. *Narrative Prosthesis: Disability and the Dependencies of Discourse*. University of Michigan Press, 2000.
- Oliver, Michael. *Understanding Disability: From Theory to Practice*. Palgrave MacMillan, 1996.
- Owen, Wilfred. "Disabled", Wilfred Owen: Selected Poetry and Prose. Routledge, 1988.
- Plath, Sylvia. "Lady Lazarus", Sylvia Plath: The Collected Poems. ed. Ted Hughes. Harper Perennial Modern Classics, 2018.
- Premchand, Munshi. *Rangbhoomi*. trans. Manju Jain. Penguin. 2012.
- Tagore, Rabindranath. 'Subha', Selected Stories of Rabindranath Tagore. Fingerprint! Publishing, 2020.

SEMESTER-IV

Course Title: Literary Criticism in India

Course Code: SHSS ENG 01 04 C 15 3104

Objective(s): The purpose of this course is to introduce our students with indigenous criticism and critical theories. Here the selection of texts is carried out keeping in mind two vital Objective(s): first, antiquity and contemporary are brought together; second, various schools of criticism provide contestation grounds for each other. It will also provide the students an opportunity to study criticism available in translation from other Indian languages.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Develop a historical understating of how literary criticism and theory has evolved in India.
2. Detail study of some of the canonical texts written by established theorists in the field of literary theory and criticism.
3. Explain the meaning, nature, and definition of important critical traditions of the period.
4. Trace the evolution of Literary Criticism and Theory in India with its socio-historical and political background.
5. Provide a conceptual framework for developing an incisive understanding of the function and practice of different literary methodologies available to a student in Indian classroom.

Course Content:

Unit - I Sanskrit Aesthetics

Introduction to various schools of Sanskrit Criticism: Rasa, Dhvani, Alamkara, Riti, Vakrokti and Auchitya.

Bharata: *Natyashastra*, tr. Manomohan Ghosh (chapter 6: ‘Sentiments’) revd. 2nd ed. (Calcutta: Granthalaya, 1967), vol. I, pp 100-18.

Unit - II Nativism

G.N. Devy: “Tradition and Amnesia” in *After Amnesia*.

Bhalchander Nemade: “*Sahityateel Desiyata*” (Nativism in Literature) in *Nativism: Essays in Criticism*. Sahitya Akademi, 1997. 233-254.

Unit - III Postcolonial Theory in India

Namwar Singh: “Decolonising the Indian Mind” translated by Harish Trivedi and published in *Indian Literature*. Vol. 35, No. 5, 1992. 145-157.

Ania Loomba: “Challenging Colonialism” in *Colonialism / Postcolonialism*. Routledge, 1998. 154 – 212. (Selected excerpts)

Unit - IV Marxism in India

Munshi Premchand: "The Aim of Literature", Presidential Speech given at the First Progressive Writers' Conference, Lucknow, 9 April 1936, tr. Francesca Orsini, in *The Oxford India Premchand*. OUP, 2004.

Aijaz Ahmad: "Literary Theory and 'Third World Literature': Some Contexts" in *In Theory: Classes, Nations, Literatures*. OUP, 1992. Print. (Selected excerpts)

Suggested Readings:

Bharata. *Natyashastra*, tr. Manomohan Ghosh. Calcutta: Granthalaya, 1967, vol. I, pp 100-18.

Chari, V.K. *Sanskrit Criticism*. Motilal Banarsidass Pvt. Ltd., 1993.

Chaitananya, Krishna. *New History of Sanskrit Literature*. 2nd ed. Manohar, 1977.

Devy, Ganesh N. *After Amnesia*. Orient Longman, 1992.

---. "Swa and Para". *Of Many Heroes*. Orient Longman, 1998.

Kane, P. V. *History of Sanskrit Poetics*. 3rd ed. Motilal Banarsidas, 2002.

Kapoor, Kapil and Nalini M. Ratnam. *Literary Theory: Indian Conceptual Framework*.
Affiliated East-West Press, 1998.

Loomba, Ania. *Colonialism/Postcolonialism*. 2nd ed. London and New York: Routledge, 2005.
Print.

Ahmad, Aijaz. *In Theory: Classes, Nations, Literatures*. OUP, 1992.

Nemade, Bhalchander. "Nativism in Literature." Trans. and ed. by Arvind Dixit and Makarand
Paranjape. *Nativism: Essays in Criticism*. Sahitya Akademi, 1997. 233-254.

Rayan, Krishna. *Sahitya, A Theory: For Indian Critical Practice*. Sterling Publishers, 1987.

Sharma, Shrawan K. *Indian Poetics: Theory and Practice*. Creative Books, 2019.

Shastri, Gaurinath. *A Concise History of Classical Sanskrit Literature*. Motilal Banarsidass,
1998.

Course Title: Research Methodology

Course Code: SHSS ENG 01 04 C 16 3104

Objective: The primary objective of this course is to provide the students an understanding of literary research and various methods used in it. The course also aims at introducing basic composition and writing skills for academic purposes.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate, are listed here:

1. An Understanding of the basics of research and academic writing
2. An ability to conduct research and use various research methods appropriately
3. Skills in essay composition and research writing
4. Knowledge and application of MLA style in research writing

Course Content:

Unit I. Introduction to Research

- a. Purpose and Uses of Literary Research
- b. Identifying Research Interest and Selection of Topic
- c. Incorporating Review of Literature and Formulating the Objective(s)/Hypothesis
- d. Citing the print and online sources, Bibliography and End-notes
- e. Plagiarism and Ethics of Research

Unit II: Structuring the thought and Developing the Draft

- a. Organizing the thought
- b. Quoting, Paraphrasing, & Summarizing
- c. Introduction, Discussion, & Conclusion
- d. Developing the art of argument building
- e. Incorporating Theoretical, Critical and Interpretive Issues

Unit III: Research Methods, Techniques and Approaches

- a) Methods and Techniques of Literary Research
- b) Discourse Analysis
- c) Textual/Intertextual Analysis: Verbal & Visual
- d) Multidisciplinary/Interdisciplinary Approach
- e) Creative Writing as Research Method

Unit IV: MLA Handbook and MLA Style

- a) Formatting Research Project

- b) Mechanics of Prose
- c) Drafting and Documenting
- d) Grammar and Punctuation
- e) Proof-reading and Editing

Suggested Readings:

Altick, Richard D. and John J. Fenstermaker. *The Art of Literary Research*. 4th ed., W. W. Norton & Company, 1992.

Altick, Richard D. *The Scholar Adventures*. Ohio State UP, 1987.

Bateson, F. W. *The Scholar-Critic: An Introduction to Literary Research*.

Booth, Wayne C., et al. *The Craft of Research*. 4th ed., U of Chicago P, 2016.

Collins English Dictionary. 13th ed., Harper Collins, 2018.

Correa, Delia da Sousa and W. R. Owens. *The Handbook to Literary Research*. 2nd ed.,

Gowers, Rebecca and Ernest Gowers. *Plain Words: A Guide to the Use of English*. Penguin, 2015.

Greetham, David C. *Textual Scholarship: An Introduction*. Routledge, 1994

Griffin, Gabriele, editor. *Research Methods for English Studies*. Edinburgh UP, 2013.

Harner, James L. *Literary Research Guide: An Annotated Listing of Reference Sources in English Literary Studies*. 9th ed., Modern Language Association of America, 2008.

Huddleston, Rodney and Geoffrey Pullum. *A Student's Introduction to English Grammar*. Cambridge UP, 2005.

MLA Handbook. 9th ed., Modern Language Association of America, 2021.

Partridge, Eric. *Usage & Abusage*. Penguin, 2005.

Swan, Michael. *Practical English Usage*. 4th ed., Oxford UP, 2017.

The Chambers Dictionary. 13th ed., Chambers, 2014.

The Oxford English Dictionary. 2nd ed., Clarendon Press, 1989, 20 Vols.

Toulmin, Stephen, et al. *An Introduction to Reasoning*. Macmillan Publishing Company, 1984.

(On 3, chapter "Arguing about the Arts")

Trask, R. L. *The Penguin Guide to Punctuation*. Penguin, 1997.

Course: Dissertation

Course Code: SHSS ENG 01 04 C 17 012012

Objective(s): To familiarize the students with the art of academic writing and exposing them to the practical understanding of research, research methodology, referencing, different types of citations and other important aspects of MLA Handbook. It will also help the students to develop their area of interest and perform a mini research on the same.

Course Level Learning Outcomes:

Some of the learning outcomes, that the students of this course are expected to demonstrate, are listed as follows:

1. Identify the area of interest and select the topic for minor research.
2. Elaborate, analyse and appreciate the important concepts relating to the topic of dissertation.
3. Discuss and analyse the texts and authors under study.
4. Demonstrate the skill to apply appropriate research methodology and Style Manual.

Length of the Dissertation: 40 to 50 pages in 8000-10000 words.

Supervisors: Students will be assigned Supervisors from amongst the faculty of the department depending upon the specialization to guide them to write the dissertation.

Evaluation and Viva-Voce: The dissertation will be evaluated by the examiner(s) and Viva-Voce shall be conducted on having the satisfactory report from the examiner(s).

Duration: Students will have to submit the dissertation before the commencement of end-semester examinations of the fourth semester.

Course Title: Modern Indian Literature in English Translation

Course Code: SHSS ENG 01 04 E 14 3104

Objective: The different language clusters in India are distinctive but share a common heritage and core identity. Nurturing its plural and diverse traditions, emergent India is engaged in an act of constant and ongoing cultural translation and interpretation. This course introduces students to a wide range of Indian Writings in English Translation.

Course Level Learning Outcomes: Some of the learning outcomes of this course are listed as follows:

1. Develop the ability to read and interpret literary texts in terms of genre and contexts.
2. Understand and write cogently on issues specific to Indian context and culture.
3. Appreciate and analyze the use of translation for the understanding of Indian texts.

Course Content:

Unit-I:

Bhism Sahni's *Tamas*

Unit-II:

Vijay Tendulkar's *Silence! The Court is in Session*

Unit-III:

(i) Rabindranath Tagore: "Where the Mind is without Fear" "Brink of Eternity" "A Moment's Indulgence"

(ii) Suryakant Tripathi 'Nirala': "Breaking Stones", "Remembering Saroj"

Unit-IV:

(i) Vaikom Muhammad Basheer: "The Rightful Inheritors of the Earth", "The Invaluable Moment" and "The World Renowned Nose"

(ii) C.S. Lakshmi 'Ambai': "A Kitchen in the Corner of the House" from *A Purple Sea*, "Parasakti and Others in a Plastic Box" and "A Rose-coloured Sari Woven with Birds and Swans" from *In a Forest, a Deer*

Suggested Readings:

Alien, Richard and Harish Trivedi. Eds. *Literature and Nation: Britain and India, 1800-1990*. Routledge, 2000.

Ambai. *A Purple Sea*. Trans. Lakshmi Holmstrom. East -West Press, 1992.

Basheer, Vaikom Muhammad. *Basheer Fictions: Short Stories*. Ed. Vanajam Ravindran. Katha, 1996.

Das, S. K. *History of Indian Literature*. Sahitya Akademi, 1991.

Dharwadker, Vinay and A. K. Ramanujan. Eds. *The Oxford Anthology of Modern Indian Poetry*. Oxford University Press, 1994.

Dharwadker, Vinay. Ed & Trans. *Kabir: The Weaver's Songs*. Penguin Books, 2003.

Mukherjee, Sujit. *Towards a Literary History of India*. IAS, 1975.

Nirala, Suryakant Tripathi. *A Season on the Earth: Selected Poems of Nirala*. Trans. David Rubin. Oxford University Press, 2003.

Ramakrishnan, E. Y. *Locating Indian Literature: Texts, Traditions, Translations*. Orient Blackswan Pvt. Ltd, 2011.

Sadana, Rashmi. *English Heart, Hindi Heartland: The Political Life of Literature in India*. Permanent Black, 2012.

Satchidanadan, K, Ed. *Signatures: One Hundred Indian Poets*. NBT, 2000.

Course Title: Modern World Literature
Course Code: SHSS ENG 01 04 E 15 3104

Objective(s): To introduce the students with the concept of World Literature and select literary texts by the celebrated authors so as to help them develop appreciation for literatures from different regional and national contexts.

Course Level Learning Outcomes:

Some of the learning outcomes, that the students of this course are expected to demonstrate, are listed as follows:

1. Develop understanding of the concept of World Literature from the perspective of Goethe and Tagore.
2. Elaborate, analyse and appreciate the important literary texts and the writers from diverse contexts.
3. Discuss the concept of World Literature vis-à-vis regional/national literatures.
4. Elaborate the inherent link between World Literature and Translation.

Course Content:

Unit-I: Concept of World Literature

Goethe's Concept of *Weltliteratur*
Rabindranath Tagore's Concept of *Visva Sahitya*
World Literature vis-à-vis Comparative Literature
World Literature and Translation

Unit-II:

Gabriel Garcia Marquez: *Love in the Time of Cholera*

Unit-III:

Mo Yan: *The Garlic Ballads*

Unit-IV:

Kalidasa: *Abhijnana Shakuntalam*

Suggested Readings:

Apter, Emily. *Against World Literature: On the Politics of Untranslatability: On the Politics of Untranslatability*. Penguin, 2013.

David, Damrosch. *What Is World Literature?* Princeton U. P., 2003.

- D'haen, Theo. *The Routledge Concise History of World Literature*. London: Routledge, 2011.
- Kalidas. *Abhijnanashakuntalam: The Recognition of Shakuntala*. Penguin India, 2016.
- King, Bruce, ed. *The New National and Postcolonial Literatures: An Introduction*, Oxford: Clarendon, 1996.
- Tagore, Rabindranath. "Visva Sahitya". *Rabindranath Tagore in the 21st Century*. Ed. D. Banerji. Springer India, 2015.

Course Title: Existentialism and Literature

Course Code: SHSS ENG 01 04 E 16 3104

Objective: The primary objective of this course is to introduce the students with the major existentialist philosophers and their literary and philosophical works. Concerned with the human condition itself, existentialism is a philosophy raising serious ethical questions, and one of the main objectives of this course is to bring the students face to face with those questions and provide an interactive atmosphere to discuss and answer them.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed here.

1. Understanding of existentialist philosophy and its relevance to life.
2. Ability to trace the socio-historical reasons for the origin and development of existentialism.
3. Knowledge of the relationship between philosophy and literature.
4. Specialized research interest in studying and analyzing existentialist literature.
5. Understanding of existentialist ethics and ability to explain with reference to other important ethical traditions.

Background Concepts: “The Single Individual”; Facticity and Transcendence; Alienation; Authenticity; Anxiety; Nothingness; The Absurd; Nihilism; “Existence precedes Essence”; Choice and Freedom; Responsibility; Ideality of Values; Decisionism; etc.

Course Content:

Unit-I

- a) Soren Kierkegaard: “Preface”, “Exordium” and Eulogy on Abraham” from *Fear and Trembling*
- b) Fyodor Dostoevsky: *Crime and Punishment*

Unit-II

- a) Iris Murdoch: “The Sovereignty of Good Over Other Concepts” from *The Sovereignty of Good*
- b) Jean Paul Sartre – *Nausea*

Unit-III

- a) Albert Camus – “An Absurd Reasoning” and “The Myth of Sisyphus” from *The Myth of Sisyphus*
- b) Franz Kafka – *The Trial*

Unit-IV

1. Friedrich Nietzsche – “Preface” and “‘Good and Evil’, ‘Good and Bad’” from *On the Genealogy of Morals*
2. Andre Gide – *The Immoralist*

Suggested Readings:

- Bakewell, Sarah. *At the Existentialist Café: Freedom, Being, and Apricot Cocktails*. Random House, 2017.
- Barrett, William. *Irrational Man: A Study in Existential Philosophy*. Anchor Books/Doubleday, 2011.
- Camus, Albert. *The Rebel*. Trans. Anthony Bower. Penguin, 2000.
- Cooper, E. David. *Existentialism: A Reconstruction*. Wiley-Blackwell, 1999.
- Dostoevsky, Fyodor. *The Idiot*. Trans. Eva Martiny. Vintage Classics, 2003.
- Ferreira, M. Jamie. *Kierkegaard*. Wiley-Blackwell, 2008.
- Flynn, Thomas. *Existentialism: A Very Short Introduction*. Oxford University Press, 2006.
- Foley, John. *Albert Camus: From the Absurd to Revolt*. Acumen, 2008.
- Frank, Joseph. *Dostoevsky: A Writer in His Time*. Princeton University Press, 2009.
- Frankl, E. Viktor. *Man's Search for Meaning*. Beacon Press, 2000.
- Gide, Andre. *Dostoevsky*. New Directions, 1961.
- Graham, Gordon. *In Search of Authenticity: From Kierkegaard to Camus*. Routledge, 1995.
- Kafka, Franz. *The Essential Kafka: The Castle; The Trial; Metamorphosis and Other Stories*. Wordsworth Classics, 2014.
- Kaufmann, Walter. *Existentialism from Dostoevsky to Sartre*. Penguin, 1975.
- Murdoch, Iris. *Metaphysics as a Guide to Morals*. Penguin, 1994.
- . *Sartre: Romantic Rationalist*. Vintage, 1999.
- . *Existentialists and Mystics: Writings on Philosophy and Literature*. Penguin, 1999.
- Nietzsche, Friedrich. *Beyond Good and Evil: Prelude to a Philosophy of the Future*. Trans. Walter Kaufmann. Vintage Classics, 2010.
- Sartre, J. Paul. *No Exit and Three Other Plays*. Trans. S. Gilbert and L. Abel. Vintage Books, 1989.
- Sartre, J. Paul and Richard Moran. *Being and Nothingness: An Essay in Phenomenological Ontology*. Routledge, 2018.
- Simone, de Beauvoir. *What is Existentialism?* Penguin Classics, 2020.

Course Title: Literature and Human Rights

Course Code: SHSS ENG 01 04 E 17 3104

Objective(s):

1. To familiarize students with the history and evolution of human rights.
2. To develop understanding of literary texts that narrate the situations concerning human rights.
3. To study human rights representation in various genres of literature.

Course Level Learning Outcomes:

Some of the learning outcomes that the students of this course are expected to demonstrate are listed as follows:

1. Understanding regarding the ontology of human rights.
2. Ability to critically interpret the nuances of human rights in literary representations.
3. Exposure with important literary representations concerning human rights.
4. Application of literary understanding on day to day issues involving human rights.

Course Content:

Unit – I:

Lynn Hunt: *Inventing Human Rights: A History*

Unit - II

Anne Frank: *The Diary of a Young Girl*

Unit -III

Harper Lee: *To Kill a Mockingbird*

Unit - IV

Amrita Pritam: *Pinjar*

Charlotte Perkins Gilman: “The Yellow Wallpaper”

Ismat Chughtai: “Lihaaf”

Suggested Readings:

- 25 + *Human Rights Documents*. Columbia Centre for the Study of Human Rights, Columbia University, 2005.
- Chughtai, Ismat. trans. M. Asaduddin "Lihaaf" (1942). *Lifting the Veil*. Penguin India, 2009.
- Donnelly, Jack. *Universal Human Rights in Theory and Practice*. Cornell University Press, 1989.
- Frank, Anne. *The Diary of a Young Girl* (1952). Maple Press Pvt. Ltd., 2013.
- Freedom: Stories Celebrating the Universal Declaration of Human Rights*. Ed. Amnesty International USA. 2011
- Gilman, Charlotte Perkins. "The Yellow Wallpaper" (1892). *The Yellow Wallpaper*. Dover Publications Inc., 1997.
- Hunt, Lynn. *Inventing Human Rights: A History*. W. W. Norton & Company, 2008.
- Ishay, Micheline. *The Human Rights Reader: Major Political Essays, Speeches and Documents from Ancient Times to the Present*. Second edition, Routledge, 2007.
- King John, trans. David A. Carpenter. *Magna Carta*. Penguin Classics, 2015.
- Lee, Harper. *To Kill a Mockingbird* (1969). RHUK; Special edition, 2010.
- Nayar, Pramod K. *Writing Wrongs: The Cultural Construction of Human Rights in India*. Routledge India, 2012.
- . *Human Rights and Literature: Writing Rights*. Palgrave Macmillan, 2016.
- Pritam, Amrita. trans. by Khushwant Singh. *Pinjar* (1950). *The Skeleton*. Dynamic Publications, 2013.
- Rousseau, Jean-Jacques trans. John T. Scott. *The Major Political Writings of Jean-Jacques Rousseau: The Two "Discourses" and the "Social Contract"*. University of Chicago Press, 2014.
- The Cambridge Companion to Human Rights and Literature*. ed. Crystal Parikh, Cambridge University Press, 2019.
- The Routledge Companion to Literature and Human Rights*. ed. Alexandra Schultheis Moore & Sophia A. McClennen, Routledge, 2015.

Teaching Learning Process

- ❖ LOCF
- ❖ NEP-2020
- ❖ Blended Learning
- ❖ Face to face (F to F) Learning
- ❖ Programme Outcomes
- ❖ Programme Specific Outcomes
- ❖ Course-level Learning Outcomes
- ❖ Postgraduate Attributes
- ❖ Learning Outcome Index
- ❖ Formative Assessment and Evaluation
- ❖ Comprehensive and Continuous Evaluation
- ❖ Multidisciplinary Approach

Blended Learning

Concept: Blended Learning is a pedagogical approach that combines face to-face classroom methods with computer-mediated activities in the process of teaching and learning. It implies nice blend of face-to-face and online activities to make the learning processes more interesting and engaging. It focuses on integration of traditional classroom activities and innovative ICT-enabled strategies. It emphasises student-centric learning environment where the teacher is the facilitator for productive and measurable learning outcomes. It optimises and compliments the face to face learning, giving ample freedom and flexibility to the students and teachers to access and explore the wide range of open-access sources such as video lectures, podcasts, recordings and articles through digital platforms. It gives freedom and autonomy to the teachers in selection of appropriate digital platforms, resources and time-slots to complement and supplement face to face learning. The Blended Learning doesn't undermine the role of the teacher, rather it gives him/her an opportunity to explore the unexplored in accordance with the requirements of the curriculum.

Key Features of Blended Learning:

- ❖ Student-Centric Pedagogical Approach focusing on flexibility in timing, quality content, needs and interests of students and freedom to study through the mode of his/her choice;
- ❖ Freedom to Select variety of mediums and techniques;
- ❖ Increased student engagement in learning;
- ❖ Enhanced teacher and student interaction;
- ❖ Improved student learning outcomes;
- ❖ More flexible teaching and learning environment;
- ❖ More responsive for self and continuous learning;
- ❖ Better opportunities for experiential learning;
- ❖ Increased learning skills;
- ❖ Greater access to information, improved satisfaction and learning outcomes.

Assessment and Evaluation

- ❖ Continuous Comprehensive Evaluation to assess each Course-level learning outcome
- ❖ Formative Assessment instead of one-time summative assessment
- ❖ Oral Examinations to test presentation and communication skills
- ❖ Moving towards Open Book Examination for better understanding and application of the knowledge acquired
- ❖ Assessment tools aligned with specific learning outcomes for each course
- ❖ Collaborative Assignments and Group Examinations on Problem solving
- ❖ Seminar Presentations
- ❖ Review of Literature

Key Features of Revised Curriculum

- ❖ Wide Range of Core and Elective Courses
- ❖ Properly Spelled Out Measurable Outcomes for Each Course
- ❖ Integration of Indian culture, heritage and literature with domain knowledge;
- ❖ One Course on Indian Literature in Each Semester
 - Indian Classical Literature
 - Bhakti Poetry
 - Indian Writings in English
 - Modern Indian Literature in English Translation
 - Literary Criticism in India
 - Contemporary South Asian Fiction in English
 - Dalit Literature and Aesthetics
- ❖ Multidisciplinary Courses
 - Gender and Literature
 - Literature of Protest
 - Dalit Literature and Aesthetics
 - Existentialism and Literature
 - Literature and Human Rights
 - Disability Studies and Literature
- ❖ Skill-oriented curriculum and pedagogy
 - Communication Skills
 - Creative Writing
 - Introduction to Translation: Theory and Practice
 - Introduction to Linguistics
 - English Language Teaching
- ❖ Compatibility between Programme Outcomes, Programme-specific Outcomes and Course-Level Learning Outcomes
- ❖ Wider flexibility in selection of courses

Keywords

- ❖ LOCF
- ❖ NEP-2020
- ❖ Blended Learning
- ❖ Face to face (F to F) Learning
- ❖ Programme Outcomes
- ❖ Programme Specific Outcomes
- ❖ Course-level Learning Outcomes
- ❖ Postgraduate Attributes
- ❖ Learning Outcome Index
- ❖ Formative Assessment and Evaluation
- ❖ Comprehensive and Continuous Evaluation

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- ❖ The draft subject specific LOCF templates available on UGC website.
https://www.ugc.ac.in/ugc_notices.aspx?id=MjY5OQ==
- ❖ Draft Blended Mode of Teaching and Learning: Concept Note available on UGC website. https://www.ugc.ac.in/pdfnews/6100340_Concept-Note-Blended-Mode-of-Teaching-and-Learning.pdf

Appendix

Curricular Reforms— Extracts from National Education Policy-2020

- I. National Education Policy: Vision of Higher Education:**
- ❖ Enabling the development of an enlightened, socially conscious, knowledgeable, and skilled nation
 - ❖ The basis for knowledge creation and innovation thereby contributing to a growing national economy.
 - ❖ The key to more vibrant, socially engaged, cooperative communities and a happier, cohesive, cultured, productive, innovative, progressive, and prosperous nation.
 - ❖ Contributing towards sustainable livelihoods and economic development of the nation
 - ❖ Creating holistic, thoughtful, creative and well-rounded individuals equipped with the key 21st century skills.
- II. NEP: Emphasis on Integrated Approach:**
- ❖ An integrated higher education system, including professional and vocational education;
 - ❖ Enabling and encouraging high-quality multidisciplinary and cross-disciplinary education;
 - ❖ 21st century capacities in fields across the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields;
 - ❖ Even engineering institutions, such as IITs, to move towards more holistic and multidisciplinary education with more arts and humanities.
 - ❖ Students of arts and humanities will aim to learn more science
 - ❖ Efforts to incorporate more vocational subjects and soft skills in general education
 - ❖ Integration of the humanities and arts with STEM for positive learning outcomes.
- III. NEP: Recommendation on Curricular Aspects:**
- ❖ Revamping curriculum, pedagogy, assessment, and student support for enhanced student experiences;
 - ❖ Developing real understanding and learning how to learn - away from the culture of rote learning.
 - ❖ Developing character, ethical and Constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service
 - ❖ Prepare the students for more meaningful and satisfying lives and work roles
 - ❖ Identifying specific sets of skills and values across domains, while enabling the students to become economically independent.
- IV. NEP: Recommended Skills**
- ❖ 21st century capabilities across the range of disciplines;
 - ❖ Personal accomplishment and enlightenment;
 - ❖ Constructive public engagement;
 - ❖ Productive contribution to the society;
 - ❖ Scientific temper and evidence-based thinking;
 - ❖ Creativity and innovativeness;
 - ❖ Critical thinking and higher-order thinking capacities,
 - ❖ Communication skills,
 - ❖ Current affairs and knowledge of critical issues facing local communities, States, country and the world.
 - ❖ In-depth learning and mastery of curricula across fields
 - ❖ Social and moral awareness,

- ❖ Sense of aesthetics and art;
- ❖ Oral and written communication;
- ❖ Health and nutrition;
- ❖ Physical education, fitness, wellness, and sports;
- ❖ Collaboration and teamwork;
- ❖ Problem solving and logical reasoning;
- ❖ Environmental awareness, water/resource conservation, sanitation and hygiene
- ❖ In-depth learning and mastery of curricula across fields
- ❖ Social and moral awareness,
- ❖ Sense of aesthetics and art;
- ❖ Oral and written communication;
- ❖ Health and nutrition;
- ❖ Physical education, fitness, wellness, and sports;
- ❖ Collaboration and teamwork;
- ❖ Problem solving and logical reasoning;
- ❖ Environmental awareness, water/resource conservation, sanitation and hygiene

V. NEP: Recommended Reforms

- ❖ Introduction of contemporary subjects such as Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, Global Citizenship Education (GCED), etc. to develop various important skills among students.
- ❖ Skills and values to be imbibed through engaging processes of teaching and learning
- ❖ Curriculum content to be reduced to make space for critical thinking and more holistic, inquiry-based, discovery-based, discussion-based, and analysis-based learning
- ❖ Content will focus on key concepts, ideas, applications, and problem solving
- ❖ Experiential learning including hands-on learning, arts-integrated and sports-integrated education,
- ❖ Story-telling-based pedagogy in each subject.
- ❖ Various aspects and forms of art and culture as the basis for learning of concepts across subjects
- ❖ Imbibing the Indian ethos through integration of Indian art and culture in teaching and learning process
- ❖ Curriculum and pedagogy to be strongly rooted in the Indian and local context and ethos in terms of culture, traditions, heritage, customs, language, philosophy, geography, ancient and contemporary knowledge, societal and scientific needs, indigenous and traditional ways of learning etc.
- ❖ Empowering the students through flexibility in course choices
- ❖ Imaginative and flexible curricular structures to enable creative combinations of disciplines for study
- ❖ Offering multiple entry and exit points by removing currently prevalent rigid boundaries and creating new possibilities for life-long learning.
- ❖ Indian standards will be aligned with the International Standard Classification of Occupations maintained by the International Labour Organization.
- ❖ No hard separation among ‘curricular’, ‘extracurricular’, or ‘co-curricular’, among ‘arts’, ‘humanities’, and ‘sciences’, or between ‘vocational’ or ‘academic’ streams.
- ❖ Exposure to Indian knowledge system, cultural traditions and classical literature through promotion of multilingualism and reverence for Indian classical languages
- ❖ Weaving the cultural aspects of the languages - such as films, theatre, storytelling, poetry, and music with various relevant subjects and real-life experiences
- ❖ “Knowledge of India” to educate the students about knowledge from ancient India and its contributions to modern India

- ❖ Basic ethical reasoning, traditional Indian values and human and Constitutional values to be developed in all students.
- ❖ Credit-based courses and projects in the areas of community engagement and service, environmental education, and value-based education.
- ❖ Opportunities for internships with local industry, businesses, artists, crafts persons, etc. so that students engage with the practical side of their learning to improve their employability.
- ❖ Focus areas for vocational education will be chosen based on skills gap analysis and mapping of local opportunities.
- ❖ Focus on research and innovation through start-up incubation centres; technology development centres; and greater industry-academic linkages;
- ❖ Technical Education requires closer collaborations between industry and higher education institutions to drive innovation in curricular planning for desired outcomes.
- ❖ Technical education should have a renewed focus on opportunities to engage deeply with other disciplines for enhancing the employability of the youth.
- ❖ Continuous formative assessment to further the goals of each programme.
- ❖ Moving away from high-stakes examinations towards more continuous and comprehensive evaluation.
- ❖ Assessing the student achievement based on the learning goals for each programme, making the system fairer and outcomes more comparable.
- ❖ All programmes, courses, curricula, and pedagogy across subjects, including those in-class, online, and in ODL modes to achieve global standards of quality.
- ❖ Faculty be given the freedom to design their own curricular and pedagogical approaches within the approved framework, including textbook and reading material selections, assignments, and assessments.
- ❖ Empowering the faculty to conduct innovative teaching, research, and service as they see best.
- ❖ Classroom transactions to shift towards competency-based learning and education
- ❖ The assessment tools to be aligned with the learning outcomes, capabilities, and dispositions as specified for each subject

लिखितपत्राणां विस्तृतः पाठ्यक्रमः
(2021-2022 शैक्षिकसत्रतः संशोधितः)

Detailed Syllabus for written papers
(Proposed w.e.f. Academic Session 2021-2022)
एम० ए० संस्कृतम् प्रथमं सत्रम्

M.A. SANSKRIT FIRST SEMESTER
COURSE CODE: SHSS SKT 1101 C 3104

प्रथमपत्रम् : संहिता उपनिषत् च - Paper-I : Samhitā Upaniṣat Ca

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. अध्येतृणां भारतीयज्ञानविज्ञानसंपन्नूते वैदिकवाङ्मये प्रवेशः; 2. वैदिकश्रुतिपरम्परायाः सम्यक् परिचयः; 3. प्राचीनार्वाचीन-व्याख्यानग्रन्थानां परिशीलनेन सह वैदिकसूक्तानामध्ययनम्; 4. ईश-केनोपनिषदयोः निहित-ब्रह्मविद्यायाः परिचय अनुभवं च; 5. वैदिकसाहित्याध्ययन-माध्यमेन प्राचीनभारतीय-जीवन-मूल्यानां संस्कृत्याश्चावबोधनम्।

2. पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. अध्येतृभ्यः वैदिकसाहित्ये निहितस्य ज्ञानवैभवस्य परिचयः भवेत्।
2. वैदिक-मन्त्र-सूक्त-देवतानां परिचयः जायेत्।
3. वेदोपनिषत्सु निहिताध्यात्मिकतत्त्वानुसारि जीवननिर्वहणाय प्रेरणा आप्नुयात्।
4. उपनिषदामध्ययनात् तत्र निहितस्य ज्ञानमार्गस्य ब्रह्मतत्त्वस्य चावधारणं भूयात्।
5. अध्ययनानन्तरं वेदविषयस्योपरि शोधकार्यार्थम् उपजीविकाप्राप्त्यर्थञ्चापि साहाय्यं लभेत्।

पाठ्यक्रमः

अधोलिखितवैदिकसूक्तानां पारम्परिक्या आधुनिक्या आलोचनात्मकपद्धत्या च गहनमध्ययनम् -

घटकम्-1: ऋग्वेदः - अग्निः (1.1); सविता (1.35); विष्णुः (1.154); इन्द्रः (2.12); रुद्रः (2.33); बृहस्पतिः (4.50);
उषा (5.80); वरुणः (7.88); सोमः (9.80)

घटकम्-2: ऋग्वेदः - पुरुषः (10.90); हिरण्यगर्भः (10.121); नासदीयम् (10.129); वाक् (10.125); सरमा-पणि-
संवादः (10-108); विश्वामित्र-नदी-संवादः (3.33)

घटकम्-3: यजुर्वेदः - शिवसंकल्पमन्त्राः 34.1-6; अथर्ववेदः (शौनकः) ब्रह्मचर्यसूक्तम् (11.5) भूमिसूक्तञ्च (12.1)

घटकम्-4: ईशावास्योपनिषदः केनोपनिषदश्च मन्त्राणां विशदव्याख्या।

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COURSE CODE : SHSS SKT 1103 C 3104

तृतीयपत्रम् : भारतीयदर्शनम्(1) - Paper-III : Bhāratīyadarśanam(1)

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. अध्येतृषु भारतीयदार्शनिकसिद्धान्तानां सम्यक् परिचयः; 2. केशवमिश्रप्रणीतायाः तर्कभाषायाः पाठनेन न्यायदर्शने प्रवेशः तस्य परिचयः च; 3. ईश्वरकृष्णप्रणीतायाः सांख्यकारिकाया अनुशीलनेन सांख्यदर्शने प्रवेशः तस्य परिचयः च; 4. भारतीयदर्शनपरम्परायाः षडास्तिकदर्शनेषु सांख्य-न्यायदर्शनयोः तत्त्वानुशीलनपूर्वकं विषयविशदीकरणम्;

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. परम्परयावगतानां विभिन्नानां दार्शनिकसिद्धान्तानां विचाराणां च परिशीलने रुचिः समुत्पद्येत।
2. न्यायदर्शनस्य प्रामाणिक-ग्रन्थ-तर्कभाषायाः सम्यगनुशीलनेन सत्यानुसन्धानपुरःसरं तार्किक-योग्यतायाः विकासः संभवेत्।
3. सांख्यदर्शनस्य सर्वप्रामाणिक-ग्रन्थ-सांख्यकारिकायाः अध्यापनेन सांख्यसिद्धान्तानां परिचयः सञ्जायेत।
4. सांख्य-न्यायदर्शनाभ्यां सिद्धान्तानामवधारणेन अन्यदर्शनैः सह तुलनात्मकमध्ययनाय प्रेरयिष्यत्ययं पाठ्यक्रमः।

पाठ्यक्रमः -

सन्दर्भाणां कारिकाणां व्याख्या दार्शनिकप्रश्नाश्च -

घटकम्-1: केशवमिश्रः-तर्कभाषा : आरम्भतः प्रत्यक्षप्रमाणपर्यन्तम्

घटकम्-2: तर्कभाषा : अनुमानप्रमाणतः प्रामाण्यवादपर्यन्तम्

घटकम्-3: ईश्वरकृष्णः-सांख्यकारिका (तत्त्वकौमुदी) : आरम्भतः 25 कारिकापर्यन्तम्

घटकम्-4: सांख्यकारिका (तत्त्वकौमुदी) : 26 कारिकातः समाप्तिपर्यन्तम्

अनुशासितग्रन्थाः

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COURSE CODE : SHSS SKT 1104 C 3104

चतुर्थपत्रम् : काव्यं नाटकञ्च - Paper-IV : Kāvyaṁ NāṭakamCa

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. काव्यनाटकरूपेणोपलब्धानां प्राचीनसाहित्यिक-ग्रन्थरत्नानां परिचयप्रदानम्; 2. महाकवि-माघकृत-शिशुपाल-वधस्य सम्यग्ध्ययनाध्यापनम्; 3. सुप्रसिद्धनाटकोत्तररामचरितस्यानुशीलनेन करुणरसस्य धारायामवगाहनम्; 4. पूर्वमेघस्य पठन-पाठनेन महाकवि-कालिदासस्य प्रतिभायाः परिचयः।

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. कालिदास-माघ-भवभूत्यादीनां कवीनां विषये गहनाध्ययनात् तेषां कवित्वपरिचयः सञ्जायेत।
2. शिशुपाल-वधस्य परिशीलनेन महाकवि-माघस्य काव्यगुणानां परिचयः संभवेत्।
3. उत्तररामचरित-नाटकस्याध्ययनेन संस्कृतनाट्यविद्यायाः सम्यगवगमनं भूयात्।
4. मेघदतस्यानुशीलनेन कविकुलगुरु-कालिदासस्य कवित्वसम्पदः काव्यालंकारप्रयोगस्य च परिचयः भवितुं शक्नुयात्।
5. एषां काव्यनाटकानामनुशीलनेन तदानीन्तनभारतीय-सामाजिकार्थिक-राजनीतिकादीनां स्थितीनां परिज्ञानं सञ्जायेत।

पाठ्यक्रमः -

अधोलिखित-काव्यनाटकेषूपलभ्यमानानां श्लोकानां व्याख्या साहित्यिकप्रश्नाश्च -

घटकम्-1: माघः - शिशुपालवधम्, प्रथमः सर्गः

घटकम्-2: भवभूतिः - उत्तररामचरितम्, 1-3 अङ्काः

घटकम्-3: उत्तररामचरितम्, 4-7 अङ्काः

घटकम्-4: कालिदासः - मेघदतम् (पूर्वमेघः)

अनुशासितग्रन्थाः

1. शिशुपालवध, व्याख्या० आचार्य शेषराज शर्मा, वाराणसी
2. उत्तररामचरित, व्याख्या० आनन्दस्वरूप, मोतीलाल बनारसीदास, दिल्ली, 1970

3. शिशुपालवध (प्रथम सर्ग), व्याख्या० डॉ० श्रीनिवास शास्त्री, साहित्य भण्डार, मेरठ
4. Uttararāmacarita of Bhavabhūti, M.R. Kale, Motilal Banarsidass, Delhi, 2016
5. उत्तररामचरित, सम्पा० तारिणीश झा, मोतीलाल बनारसीदास, दिल्ली, 1970
6. संस्कृत साहित्य का इतिहास, ए० बी० कीथ, अनु० मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली, 1978
7. संस्कृत साहित्य का इतिहास, बलदेव उपाध्याय, शारदा निकेतन, वाराणसी, 1978
8. संस्कृत नाटककार, कान्तकिशोर भरतिया, प्रकाशन शाखा, सूचना विभाग, उत्तरप्रदेश, 1959
9. संस्कृत नाटक समीक्षा, प्रो० इन्द्रपालसिंह 'इन्द्र', साहित्य निकेतन, कानपुर, 1960
10. The Meghadūta of Kālidāsa, M.R. Kale, Motilal Banarsidass, Delhi-2015
11. संस्कृत साहित्य का इतिहास, उमाशंकर शर्मा ऋषि, चौखम्बा भारत अकादमी, वाराणसी, पुनर्मुद्रण-2019
12. संस्कृत साहित्य का इतिहास, प्रीतिप्रभा गोयल, राजस्थानी ग्रन्थागार, जोधपुर, 1998



COURSE CODE : SHSS SKT 1105 C 3104
पञ्चमपत्रम् : धर्मशास्त्रम् (1) - Paper-V : Dharmasāstram (1)

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. भारतीयपरम्परानुगुणं धर्मसूत्रेषु वर्णितस्य धर्मतत्त्वस्य सम्यगवधारणम्; 2. स्मृतिग्रन्थानुसारं धर्मतत्त्वस्य परिपालनाय परिरक्षणाय च प्रशिक्षणम्; 3. भारतीयजीवनपद्धतौ धर्मशास्त्रस्योपयोगितास्थापनं तदनुगुणं जीवननिर्वहणञ्च; 4. धर्मशास्त्रपरम्परायां स्मृतिग्रन्थानां तत्रोल्लिखितानामनुशासनानां तत्त्वानाञ्च साङ्गोपाङ्गविवेचनम्।

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. धर्मशास्त्रस्येतिहासाध्ययनेन शास्त्रपरम्परायाः कालानुसारं विकासः तात्त्विकपरिशीलनं च प्राप्येता।
2. विभिन्नानां स्मृतिग्रन्थानामध्ययनेन स्मृतिपरम्परायाः तत्रत्यानां सिद्धान्तानां विषये च विश्लेषणात्मकचिन्तन-दृष्टिः गृह्येता।
3. धर्मस्यार्थोपपादनानां, वर्णाश्रमव्यवस्थायाः कर्तव्यानां च विषये परिज्ञानं भवेत्।
4. मनुस्मृतेः अध्ययनेन दैनन्दिनजीवने व्यवहारोपयोगीनां विधीनां सम्यगवधारणं क्रियेता।
5. याज्ञवल्क्यस्मृतेः दायभागस्य परिशीलनेन व्यावहारिकदृष्ट्या सामाजिकजीवने प्राप्तानां विधीनां सम्यक् परिज्ञानं ग्रहणं च जायेता।

पाठ्यक्रमः -

घटकम्-1: पी० वी० काणे-धर्मशास्त्रस्येतिहासः- प्रथमभागः- प्रथमखण्डः- धर्मस्य अर्थः, धर्मस्य उपादानाः, गौतमधर्मसूत्रः, बौधायनधर्मसूत्रः, आपस्तम्ब-धर्मसूत्रः, हिरण्यकेशि-धर्मसूत्रः, वसिष्ठ-धर्मसूत्रश्च- एतेषां पञ्चधर्मसूत्राणां सामान्यः परिचयः

घटकम्-2: पी० वी० काणे-धर्मशास्त्रस्येतिहासः- प्रथमभागः, द्वितीयखण्डः - वर्णाः, वर्णानां कर्तव्यानि, आश्रमाः, तेषां कर्तव्यानि, विवाहः, अन्ये संस्काराः

घटकम्-3: मनुस्मृतिः, प्रथमोऽध्यायः (कुल्लूकभट्टटीका)

घटकम्-4: याज्ञवल्क्यस्मृतिः (मिताक्षराटीका), दायदभागः

अनुशंसितग्रन्थाः

1. मनुस्मृतिः, मन्वर्थमुक्तावलीसहिता, सं० वासुदेव शर्मा काशीकरः, निर्णयसागर प्रेस, मुम्बई, 1909
2. मनुस्मृतिः, मेधातिथि-मनुभाष्य-समेता, सम्पा० गङ्गानाथ झा, परिमल पब्लिकेशन्स, दिल्ली, 1998
3. History of Dharmashastra, Dr. P.V. Kane, Bhandarkar Oriental Research Institute, Pune, 1962
4. याज्ञवल्क्यस्मृति, मिताक्षरा टीका सहित, वेंकटेश्वर मुद्रायन्त्र, मुम्बई, 1894
5. धर्मशास्त्र का इतिहास, पी० वी० काणे, 2014



COURSE CODE : SHSS SKT 1209 C 3104

नवमपत्रम् : भारतीयदर्शनम् (2) - Paper-IX : Bhāratīyadarśanam (2)

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. भारतीयदर्शनस्य षट्सम्प्रदायान्तर्गतानां वेदान्तशास्त्रस्य पूर्वोत्तरमीमांसाशास्त्रयोः च सम्यक् परिचयः; 2. लौगाक्षि-भास्करकृतस्य अर्थसंग्रहस्याध्ययनाध्यापनेन पूर्वमीमांसाशास्त्रस्य सिद्धान्तानां परिज्ञानम्; 3. सदानन्दयोगीन्द्रकृतस्य वेदान्तसारस्य सम्यक् परिशीलनेन शाङ्करवेदान्तस्य तत्त्वानां परिचयः।

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. अर्थसङ्ग्रहस्य सम्यगध्ययनेन पूर्वमीमांसाशास्त्रस्य गभीरानुशीलनस्य प्रवृत्तिः जायेत।
2. वेदान्तसारस्य पठन-पाठनेन शाङ्करवेदान्तसम्प्रदायस्य प्रकरणग्रन्थानां परिशीलने रुचिः समुत्पद्येत।
3. एतयोः सम्यगध्ययनेन भारतीयदार्शनिकपरम्परायाः ज्ञानमनुशीलनं च भवेत्।
4. अन्य-दार्शनिक-सम्प्रदायानां सिद्धान्तैः सह तुलनात्मकमध्ययनाय मनोवृत्तिरुत्पद्येत।

पाठ्यक्रमः –

सन्दर्भाणां व्याख्या आलोचनात्मक-प्रश्नाश्च -

घटकम्-1: लौगाक्षिभास्करः - अर्थसङ्ग्रहः (आरम्भतः विधिभागपर्यन्तम्)

घटकम्-2: अर्थसङ्ग्रहः : (निषेधभागतः समाप्तिपर्यन्तम्)

घटकम्-3: सदानन्दयोगीन्द्रः - वेदान्तसारः (आरम्भतः अध्यारोपप्रकरणपर्यन्तम्)

घटकम्-4: वेदान्तसारः (अपवादप्रकरणतः समाप्तिपर्यन्तम्)

अनुशंसितग्रन्थाः

1. अर्थसंग्रह, सम्पा० तथा व्याख्याकार वाचस्पति उपाध्याय, चौखम्बा ओरियण्टलिया, दिल्ली, 1977
2. अर्थसंग्रहः, व्याख्याकार दयाशङ्कर शास्त्री, कानपुर
3. अर्थसंग्रहः, व्याख्याकार सत्यप्रकाश शर्मा, साहित्य भण्डार, मेरठ
4. Arthasaṅgraha, Eng. Tr. by A.B. Gajendragadkar and R.D. Karmakar, Motilal Banarsidass, Delhi, 2016
5. Arthasaṅgraha, Eng. Tr. by G. Thibaut, Delhi
6. वेदान्तसारः, हिन्दिरूपान्तर-तत्त्वपारिजाताभिध-हिन्दीव्याख्या-संवलितः, सन्तनारायण श्रीवास्तव्य, पीयूष प्रकाशन, प्रयाग, 1968
7. वेदान्तसार, व्याख्याकार बदरीनाथ शुक्ल, मोतीलाल बनारसीदास, वाराणसी, 2012
8. वेदान्तसार, सम्पादक तथा व्याख्याकार राममूर्ति शर्मा, चौखम्बा पब्लिशर्स, दिल्ली
9. वेदान्तसार, व्याख्याकार गजानन शास्त्री मुसलगाँवकर, वाराणसी
10. वेदान्तसार, सम्पादक तथा व्याख्याकार डॉ० आद्याप्रसाद मिश्र, अक्षयवट प्रकाशन, इलाहाबाद
11. Vedāntasāra, Eng. Tr. by M. Hiriyanna
12. Vedāntasāra, Eng. Tr. by Swami Nikhilananda, Advaita Ashram, 2014
13. Outline of Indian Philosophy, Radhakrishnan, OUP India, 2009
14. भारतीय दर्शन, बलदेव उपाध्याय, चौखम्बा ओरियण्टलिया, दिल्ली
15. भारतीय दर्शन, उमेश मिश्र, प्रकाशन ब्यूरो, सूचना विभाग, उत्तर प्रदेश सरकार, लखनऊ, 1957



COURSE CODE : SHSS SKT 1211 C 3104

एकादशपत्रम् : धर्मशास्त्रम् (2) - Paper-XI : Dharmaśāstram (2)

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. गीताज्ञानमाध्यमेन भारतीयधर्मधारायाः सम्यक् परिचयः; 2. स्वामिदयानन्दसरस्वतीप्रणीतस्य सत्यार्थप्रकाशानुगुणं परमेश्वरस्य सत्यस्वरूप-प्रकाशनम्, परमात्मनः गुण-कर्म-स्वभावानुसारमसंख्यनामभ्यः शतनाम्नां व्युत्पत्ति-निर्वचनपूर्वकमर्थज्ञानम्; 3. मानवजीवने श्रेष्ठगुणसंपादनाय संस्काराणामनिवार्यता-प्रतिपादनम्; 4. प्राचीनभारतीयजीवनपद्धतौ संस्काराणां महनीयताप्रकाशनाय स्वामिना दयानन्देन प्रदर्शित-मार्गस्यानुशीलनम्।

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. गीतायां विश्वरूपदर्शनस्यानुशीलनेन परमात्मन अपरिमितशक्त्याः सम्यक् परिज्ञानं भूयात्।
2. गीतायां वर्णित-भक्तियोगस्य विधिवत् परिचयेन जीवने आध्यात्मिकतायाः संचारः संभवेत्।
3. सत्यार्थप्रकाशस्य प्रथमे समुल्लासे वर्णितानां विविधनामानुशीलनेन परमात्मनः स्वरूपं सम्यक् जानीयात्।
4. संस्कारविधौ पञ्चमहायज्ञानां पठन-पाठनेन जीवनं संस्कारपूर्णं संभवेत्, फलस्वरूपं च समाजस्य उन्नतिः स्यात्।
5. उपनयन-वेदारम्भसंस्कारयोः सम्यग्ध्ययनादनुपालनाच्च वैदिकसंस्कृतेः प्रकाशनं सञ्जायेत।

पाठ्यक्रमः -

घटकम्-1: श्रीमद्भगवद्गीता, एकादशोऽध्यायः द्वादशोऽध्यायश्च

घटकम्-2: महर्षि-दयानन्दः - सत्यार्थप्रकाशः, ईश्वरनामविषयः प्रथमः समुल्लासः - क) व्युत्पत्ति-निर्वचनपूर्वकं शतनाम्नामर्थग्रहणम्; ख) तदनुगुणमीश्वरस्वरूप-समीक्षणम्

घटकम्-3: महर्षि-दयानन्दः संस्कारविधिः, सामान्यप्रकरणम्

घटकम्-4: महर्षि-दयानन्दः - संस्कारविधिः, उपनयनं वेदारम्भसंस्कारश्च

अनुशंसितग्रन्थाः

1. श्रीमत्स्वामी-दयानन्दसरस्वती, सत्यार्थप्रकाशः, सं० युधिष्ठिर मीमांसक, रामलाल कपूर ट्रस्ट, रेवली, सोनीपत, 2007
2. महर्षिदयानन्दसरस्वतीस्वामिविरचितः, सत्यार्थप्रकाशः, शोधकर्ता, समीक्षक, सम्पादक, भाष्यकार डॉ० सुरेन्द्रकुमार, सत्यधर्म प्रकाशन, प्राप्तिस्थान - विजयकुमार गोविन्दराम हासानन्द, 4408, नई सड़क, दिल्ली-6, 2014
3. सटिप्पणः सत्यार्थप्रकाशः, टिप्पणीकर्ता - स्वामी-वेदानन्दः तीर्थः, विरजानन्द वैदिक संस्थान, गाजियाबाद, सं.2016
4. दयानन्द -ग्रन्थावलि, भाग 1, सत्यार्थप्रकाशः, वैदिक पुस्तकालय, दयानन्द आश्रम, केसरगंज, अजमेर, चतुर्थ आवृत्ति-2019
5. श्रीमत्स्वामी-दयानन्दसरस्वती, संस्कारविधि, वैदिक पुस्तकालय, दयानन्द आश्रम, केसरगंज, अजमेर-305001, 2017
6. श्रीमद्भगवद्गीता, संपा० वासुदेवलक्ष्मण शास्त्री पणशीकर, आठ भाष्यो व टीकाओं सहित, मुंशीराम मनोहरलाल पब्लिशर्स प्रा० लि०, नई दिल्ली-110055, 1966
7. श्रीमद्भगवद्गीता, गीता प्रेस, गोरखपुर-2015



COURSE CODE: SHSS SKT 13A 01 SE 3104

चतुर्दशपत्रम् : ऋक्संहिता यजुस्संहिता च - Paper-XIV: Ṛksamhitā Yajussamhitā

Ca

L	T	P	Credits
3	1	0	4

उद्देश्यः/Objective:

1. वेदस्य वैदिकसाहित्यस्य च विशिष्टज्ञानप्राप्तिः; 2. ऋग्यजुसंहितयोः प्रमुखसूक्तानां सम्यग्ध्ययनम्; 3. विभिन्नानां प्राच्य-पाश्चात्य-भाष्यकाराणां भाष्यानुसन्धानपुरःसरं वैदिकज्ञानराशेः अवगमनम्।

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. स्नातकोत्तरकक्षायाः विद्यार्थिनः सम्यक् पाठनात् वेदविषये विदिताः भवेयुः, निरन्तरस्वाध्यायेन च विशिष्टविद्वांसः स्युः।
2. ऋग्यजुर्वेदयोः विशिष्टसूक्तानां साङ्गोपाङ्गाध्ययनेन ऋषि-देवता-छन्द-विषयक-ज्ञानमपि प्राप्नुयुः।
3. विभिन्नानां प्राच्य-पाश्चात्य-भाष्यकाराणां भाष्यैः सह सम्यक् परिचयः सम्भवेत्।
4. विशिष्टे वैदिकतत्त्वानुशीलने वैदिकसंहितानामध्ययने च रुचिः संजायेत।

पाठ्यक्रमः

ऋग्यजुर्वेदयोः अधोनिर्दिष्ट-सूक्तानां दयानन्दसहितं पारम्परिक-पाश्चात्य-भाष्यकारानुसारं गहनमध्ययनम् -

घटकम्-1: ऋग्वेदः - अग्निः (1.19), सूर्यः (1.115), ब्रह्मणस्पतिः (2.23), मित्रः (3.59), उषाः (3.61), पर्जन्यः (5.83)

घटकम्-2: ऋग्वेदः - पूषन् (6.53), वास्तोष्पतिः (7.54), सरस्वती (7.95), मण्डूकः (7.103), अक्षः (10.34), ज्ञानम् (10.71)

घटकम्-3: यजुर्वेदः (माध्यन्दिन - वाजसनेयि), अध्यायः 31-32 (सम्पूर्णम्)

घटकम्-4: यजुर्वेदः (माध्यन्दिन- वाजसनेयि), 33-दध्यायः (1-50 मन्त्राः)

अनुशंसितग्रन्थाः

1. सरस्वती, स्वामी दयानन्द, ऋग्वेदभाष्यम्, परोपकारिणी सभा, वैदिक पुस्तकालय, अजमेर, राजस्थान, पञ्चमावृत्ति - 2008
2. सरस्वती, स्वामी दयानन्द, यजुर्वेदभाष्यम्, परोपकारिणी सभा, वैदिक पुस्तकालय, अजमेर, राजस्थान, सप्तमावृत्ति - 2006
3. चौबे, डॉ० ब्रजबिहारी, वेद-व्याख्या की दिशाएँ, कात्यायन वैदिक साहित्य प्रकाशन, होशियारपुर, पंजाब, 2006
4. सातवलेकर, पं० श्रीपाद दामोदर, ऋग्वेद का सुबोध भाष्य, पारडी, 1985
5. सायणकृतम् ऋग्वेदभाष्यम्, वैदिक संशोधन मण्डल, पुण्यपत्तनम्, द्वितीय संस्करण - 1983
6. Ram Gopal, *A History and Principles of Vedic Interpretation*, Delhi, 1983
7. Griffith, Ralph T.M., *Hymns of the Rgveda*, Motilal Banarsidass, New Delhi, 2017
8. Macdonell, A.A., *Vedic Reader for Students*, Low Price Publications, 2002
9. शास्त्री, जगदीशलाल (सं.), *शुक्ल-यजुर्वेद-संहिता, उव्वट-महीधरकृत भाष्य सहित*, मोतीलाल बनारसीदास, दिल्ली, 1971
10. सूर्यकान्त (अनुवाद), *वैदिक देवशास्त्र*, Yugantar Press, Dufirin Pool, New Delhi, 1961
11. Peterson, P., *Hymns from the Rgveda*, Bhandarkar Oriental Research Institute, Pune, 1938
12. रामनाथ वेदालंकार, *वेदभाष्यकारों की वेदार्थ-प्रक्रियाएँ*, वि. वि. भारत-भारती अनुशीलन संस्थान, पंजाब विश्व., होशियारपुर, 1980
13. त्रिपाठी, गयाचरण, *वैदिक देवता : उद्भव और विकास (भाग 1-2)*, भारतीय विद्या प्रकाशन, दिल्ली



Option (IV)

वर्ग: - घ (भारतीयदर्शनम्)

COURSE CODE: SHSS SKT 13 D 10 SE 3104

चतुर्दशपत्रम्: भारतीयदर्शनस्य इतिहासः - Paper- XIV: Bhāratīyadarśanasya Itihāsaḥ

L	T	P	Credits
3		0	4

उद्देश्यः/Objective:

1. वैदिकपरम्परायामुपलभ्यमानानां दार्शनिकतत्त्वानां परिचयः; 2. भारतीय-दर्शनस्य आस्तिक-नास्तिक-धारयोः सम्यक् परिज्ञानम्; 3. दर्शनशास्त्रस्यैतिह्यस्य गभीरमध्ययनम्।

पाठ्यक्रमाध्ययनस्य फलम् / Course Level Learning Outcome:

1. भारतीयदार्शनिकपरम्परायाः विकासस्य सम्यगवधारणं भवेत्।
2. आस्तिक-नास्तिक-धारयोः तुलनात्मकानुशीलनेन तयोः विचार-भेदस्य ज्ञानं लभेत्।
3. षड्दर्शनानां प्रतिपादानुशीलनेन तेषां परस्परपूरकत्वमनुभूय अविरोधित्वं जानीयात्।
4. दार्शनिकग्रन्थानामध्ययनेनानुशीलनेन च प्रौढशास्त्रेषु गति-प्रवृत्तिः समुत्पद्येत।

पाठ्यक्रमः -

घटकम्-1: वैदिक-दर्शनम् (वेदेषु, ब्राह्मणग्रन्थेषु उपनिषत्सु च विद्यमानानां दार्शनिकतत्त्वानां परिचयः), पुराण-दर्शनम् (अग्निपुराणे विद्यमानानां दार्शनिकतत्त्वानां परिचयः) च

घटकम्-2: नास्तिक-दर्शनानि (षड्-नास्तिकदर्शनानां – माध्यमिकः, योगाचारः, सौत्रान्तिकः, वैभाषिकः, चार्वाकः, दिगम्बरश्च – सामान्यपरिचयः)

घटकम्-3: सांख्यदर्शनम्, योगदर्शनम्, न्यायदर्शनम्, वैशेषिकदर्शनम् - सामान्यपरिचयः

घटकम्-4: पूर्वमीमांसा-दर्शनम्, उत्तरमीमांसा-दर्शनम् - सामान्यपरिचयः

अनुशंसितग्रन्थाः

1. शर्मा, उमाशंकर ऋषि (व्या०), सर्वदर्शनसंग्रहः, चौखम्बा विद्याभवन, वाराणसी (पुनर्मुद्रित), 2019.
2. Dasgupta, Surendranath, History of Indian Philosophy (in 6 vols) (Reprint), Rupa Publications, Delhi, 2018.
3. Vidyabhushan, Satis Chandra, History of Indian Logic: (Ancient, Mediaeval and Modern Schools) (Reprint), Motilal Banarsidass, New Delhi, 2015.
4. Chattopadhyaya, D.P., Lokāyata: A Study in Ancient Indian Materialism, People's Publishing House (Reprint), 2006.
5. Hirianna, M, Essentials of Indian Philosophy (Reprint), Motilal Banarsidass, Delhi, 2015.
6. Kar, Bijayananda, The Philosophy of Lokayata, Motilal Banarsidass, Delhi, 2013.
7. शर्मा, डॉ० चन्द्रधर, भारतीय दर्शन का तात्त्विक सर्वेक्षण, मोतीलाल बनारसीदास, दिल्ली, 2013.
8. Chatterjee, Sarat Chandra, An Introduction to Indian Philosophy (Reprint), Rupa & Co., Delhi, 2012.
9. Radhakrishnan, S., Indian Philosophy (Reprint), Oxford, 2008.

10. उपाध्याय, आचार्य बलदेव, पुराण-विमर्श, चौखम्बा विद्याभवन, वाराणसी, (Reprint) 2007.
11. Sinha, Jadunath, Outlines of Indian Philosophy, Pilgrims Publishings, 2007.
12. अलंकार, वीरिन्द्र कुमार, मीमांसा दर्शन (तर्क-अध्ययन), भारतीय विद्या प्रकाशन, दिल्ली, 2006.
13. वेदवाचस्पति, प्रियव्रत, वेद और उसकी वैज्ञानिकता, गुरुकुल काँगड़ी विश्वविद्यालय, हरिद्वार, 2005.
14. वेदालंकार, जयदेव, भारतीय दर्शन (तत्त्व और ज्ञानमीमांसा के मौलिक सम्प्रत्यय), न्यू भारतीय बुक कॉर्पोरेशन, नई दिल्ली, 2004.
15. देवराज, नन्द किशोर, भारतीय दर्शन, उत्तर प्रदेश हिन्दी संस्थान, लखनऊ, 2002.
16. चतुर्वेदी, गिरिधर शर्मा, पुराणपरिशीलनम्, विहार राष्ट्रभाषा परिषद्, पटना, 2000.
17. Sarma, BNK, History of Dvaita School of Vedanta and its Literature (in 2 vols) (Reprint), Motilal Banarsiadass, New Delhi, 2000.
18. Narasimhachary, M., Contribution of Yāmunācārya to Viśiṣṭādvaita, Sri Jayalakshmi Publications, Hyderabad, 1998.
19. भार्गव, दयानन्द, वेद-विज्ञान-वीथिका, नाग प्रकाशन, दिल्ली, 1996.
20. अभिमन्यु, वेदान्तविमर्श, परिमल पब्लिकेशन्स, दिल्ली, 1991.
21. Thangaswami, R., Advaita Vedānta Literature: A Bibliographical Survey, University of Madras, Chennai, 1980.
22. Raghavan, VKSN., A History of Viśiṣṭādvaita Literature, Ajanta Publications, Chennai, 1979.
23. सिन्हा, हेन्ड्र प्रसाद, भारतीय दर्शन की रूपरेखा (द्वितीय संस्करण), मोतिलाल बनारसीदास, दिल्ली, 1979.
24. Bharatiya, M.C., Causation in Indian Philosophy (with Special reference to Nyāya Vaiśeṣika), University Press, Vimal Prakashan, Ghaziabad, 1973.
25. पाठक, सर्वानन्द, चार्वाकदर्शन की शास्त्रीय समीक्षा, चौखम्बा विद्याभवन, वाराणसी, 1968.
26. उपाध्याय, आचार्य बलदेव, भारतीय दर्शन, शारदा मन्दिर, वाराणसी, 1942.
27. Jha, Ganganath, Vaisheshika Darshana, Nagari Pracharini Sabha, Benares, 1921.
28. Cowell, E.B. & Gough A.E. (Eng. Tr.), Sarvadarśanasamgraha, Trubner & Co, Ludgate Hill, London, 1882.
29. त्रिपाठी, श्रीकृष्णमणि, पुराणपर्यालोचनम्, चौखम्बा सुरभारती प्रकाशन, वाराणसी
30. उपाध्यायः, वाचस्पति, मीमांसादर्शनविमर्शः, भारतीय विद्या प्रकाशन, दिल्ली.



Course Title: Sociology of Gender

Course Code: SAHS SC 1 1 08 CC 4105

Credits: 5

Course Objectives

Over the years, in academics, Gender as a field of study has gained popularity. Sociology is not an exception to it. Hence, this course will study the dual relationship between Gender and Sociology. To make this course engaging and fitting for the intellectual quest of the students, this course will provide audio-visual aids, and there will be interactions regarding various topics.

Course Level Learning Outcomes

Upon the completion of the course, some of the learning outcomes that the students of this course are expected to demonstrate are:

1. Understanding of the social construction of Gender.
2. Reflect on Liberalist, Radical, Marxist, and Post-Marxist theories of Gender relations.
3. Ability to delve into the discourse of politics of Gender.
4. Analyse development policies on Gender.

Unit I: Basic Concepts: Sex and Gender; Gender as a Social Construct; Social Structure and Inequality; Patriarchy-Matriarchy; Division of Labour- Production and Reproduction; Gender Roles.

Unit II: Theories of Gender Relations: Liberalist, Radical, Marxist and Post-Modernist.

Unit III: Politics of Gender: Complementarity; Inequality; Dependence; Subordination

Unit IV: Gender and Development: Development Policies on Gender; Gender, Development and Empowerment.

Audio-Visual aids will be part of the Classroom Lectures and Interactions.

Suggested Readings

Beauvoir, Simone De, 1983. *The Second Sex*, Harmondsworth:

Penguin. Cavallaro, Dani, 2003. *French Feminist Theory*, New York: Continuum.

Chakrawarti, Uma, 2006. *Gendering Caste: Through a Feminist Lens*, Kolkata: Stree.

_____ 1993. 'Conceptualizing Brahmanical Patriarchy in Early India: Gender, Caste and Class the State'. *Economic and Political Weekly*, 28(14), 579-585.

_____ 1995. Gender, Caste and Labour Ideological and Material Structure of Widowhood *Economic and Political Weekly*, 30(36), 2248-2256.

Chowdhry, Prem, 2014. "Masculine Spaces: Rural Male Culture in North India". *Economic and Political Weekly*, 49 (47), 41-49.

DeVault, Marjorie L., 1996. 'Talking Back to Sociology: Distinctive Contributions of Feminist Methodology', *Annual Review of Sociology*, 22, 29-50.

Engels, F., 2010. *The origin of the Family, Private Property and the State*, New Delhi: Peoples Publishing House.

Agnes, Flavia, 2000 *Women, Marriage and the Subordination of Rights in Community, Gender and Violence*. Subaltern Studies XI. New Delhi: Permanent Black.

Gopal, M., 2013. Ruptures and Reproduction in Caste/ Gender/ Labour, *Economic and Political Weekly*, 48(18) 91-97.

Ghosh, G. K. and Shukla Ghosh, 1997. *Dalit Women*. New Delhi: A.P.H Publication. Giddens, Anthony, 2013. *Sociology*. New Delhi: John Wiley and Sons.

Guru, G., 1995. 'Dalit Women Talk Differently', *Economic & Political Weekly*, 14, (21), 2548-49.

Halberstam, Judith, 1998. *Female Masculinity*, London: Duke University Press.

Harding, Sandra (ed.), 1987. *Feminism and Methodology*, Bermington USA: Indiana University Press.

_____ 1991. *Whose Science? Whose Knowledge: Thinking from Women's Lives*, Ithaca, New York: Cornell University Press.

Hasan, Zoya and Menon Ritu, 2004. *Unequal Citizens: A Study of Muslim Women in India*. New Delhi: Oxford University Press.

Kannabiran, V. and Kannabiran. K. 2003. 'Caste and Gender: Understanding Dynamics of Power and Violence, in Anupama Rao (ed). *Gender and caste*, New Delhi: Kali for Women.

Bhasin, Kamla, 2000. *Understanding Gender* (Kali Primaries) New Delhi: Kali for Women.

Kent, K. Susan, 2012. *Gender and History*. England: Palgrave Macmillian.

Khiamniungan, Longkoi, T., 2013. 'Gender and Democracy: Disparity in Women's Political Representation in Nagaland', *Eastern Quarterly*, 9 (III-IV).

Kimmel, S. Michale and Amy Arosen, 2008. *The Gendered Society*, New York: OUP.

Menon, Nivedita, 2000. 'Embodying the Self: Feminism, Sexual Violence and the Law', in Partha Chatterjee and Pradeep Jeganathan (eds.) *Subaltern Studies XI: Community, Gender and Violence*. New Delhi: Permanent Black.

_____ 2000. 'Elusive Women: Feminism and Women's Reservation Bill', *Economic and Political Weekly*, 35, (43/44), 53835-3844.

Nongbri, Tiplut, 2003. *Development, Ethnicity and Gender: Select Essays on Tribes in India*, New Delhi: Rawat Publications.

Oakley, Ann, 1972. *Gender, Sex and Society*, London: Maurice Temple Smith Ltd.

Panjabi. Kavita and Paromita Chakravarti, 2012. *Women Contesting Culture: Changing of Gender Politics in India*, Kolkata: Stree.

Puwar, Nirmal and Parvati Raghuram. 2003. *A Kiss is Just a Kiss OR is it? South Asian Lesbian and Bisexual Women and the Construction of Space*, New York: Berg Publishers.

Rao, Anupama, 2002. *Issues in Contemporary Indian Feminism: Gender and Caste*, New Delhi; Kali for Women.

Rege, Sharmila. 1998. 'Dalit Women Talk Differently: A Critique of 'Difference' and Towards Dalit Feminist Standpoint Position', *Economic and political Weekly*, 31(6) 39-46.

_____ 2000. 'Real Feminism' and Dalit Women: Scripts of Denial and Accusation', *Economic and Political Weekly*. 35, (6), 492-495.

Tong, Marie, 2009 "Feminist Thought: A More Comprehensive Introduction". North Carolina: West View Press.

Course Title: Environment and Society

Course Code: SAHS SC 1 1 05 GEC 2002

Credits: 2

Course Objective

The objective of the course is to familiarize the students with the conceptual and theoretical perspectives related to Environment and Society.

Course Level Learning Outcomes

Upon the completion of the course, some of the learning outcomes that the students of this course are expected to demonstrate are:

1. Understanding of the different types of environmental issues and problems.
2. Identify the diverse theoretical perspectives and conceptual issues in environmental Sociology.
3. Understanding of the different theoretical perspectives of scholars on environmental concerns.
4. Elaborate on the issues pertaining to development and sustainability.

Unit I: Environmental Sociology:

The Rise, Decline and Resurgence of Environmental Sociology

Environmental Discourse: The trajectory of social ecology, Global Environmental problem.

Unit II: Classical Sociological Tradition

Marx, Durkheim and Weber on Environmental Concerns; R. Mukherjee and Ramachandra Guha; Elements and Basic Categories of Social Ecology

Unit III: Environmental Issues and Problems: Population, Water, Sanitation, Energy, Housing, Urban development and rural poverty.

Unit IV: Environment and Interest Groups: Issues and Concerns in the context of Nationhood and State; issues pertaining to Development and Sustainability as Social Change; emergence model of Environment and Society.

Suggested Readings

Agrawal, Arun & K. Sivaramakrishnan (ed.), 2001. *Social Nature: Resources, Representations and Rule in India*. New Delhi: OUP.

Barry, Commoner, 1971. *The Closing Circle: Nature, Man and Technology*. New York: Random House Inc.

Brara, Rita. 2003. 'Ecology and Environment' in Veena Das (Ed.) *The Oxford India Companion to sociology and social anthropology*.

Chaudhary, Sukant K., 2014. *Sociology of Environment*. New Delhi: Sage Publications

Dave & Katewa, 2012. *Textbook of Environment Studies*, New Delhi: Cengage Learning India.

Descola, Philippe and Gisli Palsson. 1996. *Nature and society. Anthropological perspectives*. Routledge; London.

Eugene. 1989. *Foundations of environmental ethics*. Prentice Hall; New Jersey.

Franklin, Adrian, 2002. *Nature and Social Theory*. London: Sage.

Giddens, Anthony, 2013. *Sociology*. New Delhi: John Wiley and Sons.

Goldfrank, Walter, David Goodman, and Andrew Szasz (Ed.), 1999. *Ecology and the world- system*. Greenwood Press: London.

Gosling, David, 2001. *Religion and Ecology in India and South Asia*. Routledge.

Grove, Richard, Vinita Damodaran and Satpal Sangwan (Ed.), 1998. *Nature and the orient*. OUP: New Delhi.

Guha, Ramachandra (ed.), 1994. *Social ecology*, New Delhi: OUP.

_____ 2000. *Environmentalism: A Global History*. New Delhi: OUP.

Guha, Sumit, 1999. *Environment and Ethnicity in India 1200-1991*, Cambridge: Cambridge University Press.

Hughes, Jonathan, 2000. *Ecology and Historical Materialism*, Cambridge University Press; Cambridge.

Jeffery, Roger and Nandini Sunder (ed.), 1999. *A New Moral Economy for India's forests?: Discourses of Community and Participation*, New Delhi: Sage.

Martell, Luke, 1995. *Ecology and Society: An Introduction*. U. K.: Polity Press. Mukherjee, Radhakamal, 1942. *Social Ecology*. London: Longmans.

Murphy, Raymond, 1994. *Rationality and Nature: A Sociological Enquiry into a Changing Relationship*. USA: West view Press.

Pepper, David, 1996. *Modern Environmentalism: An Introduction*, London: Routledge.

Redclift, M. and Ted Benton, (ed.), 1994. *Social Theory and Global Environment*, London: Routledge.

Course Title: Women and Society

Course Code: SAHS SC 1 1 02 GEC 4004

Credits: 4

Course Objectives

This course will try to make the learners understand the different nuances between women and society. The history of women's position in Indian society will be the introductory theme, under which there will be a discussion on the position of women from Vedic times to the present, along with women's participation in the Independence movement and post-independence period. Additionally, there will be readings on the social construction of gender and gender roles. Concerns relating to various issues faced by the women in India will be comprehensively covered in this course. Empowerment of women through the measures taken by the State, the interrelation between women and civil society, as well as women and social movements in India will be discussed in this course.

Course Level Learning Outcomes

Upon the completion of the course, some of the learning outcomes that the students of this course are expected to demonstrate are:

1. Ability to comprehend women's position at the different time periods in India.
2. Understanding of social construction of gender and gender roles.
3. Identify the problems and concerns of women in India.
4. Critically analyze the empowerment measures taken by the state and civil society for women empowerment.

Unit I: History of Women's Position in Indian Society

Women's position from Vedic times to the present, Women's participation in India's Independence movement; Post independence period.

Unit II: Social Construction of Gender and Gender Roles

Socialization- Stages of socialization, Agencies of Socialization – Family, Peer group, Mass Media - Gender Socialization– Gender Identity, Concepts in Feminism- Feminism, Masculinity, Gendered Division of Labour.

Unit III: Women in India: The Concerns

Marriage- problems faced by married women, Women and Health issues, Violence against women; women and globalization- nature of women's labour, discriminatory wages, changing working conditions and workplace related issues.

Unit IV: Empowerment of Women

Empowerment measures taken by the State, Women and Civil Society, Women and Social Movements in India.

Suggested Readings:

Altekar, A S. The Position of Women in Hindu Civilization. Delhi: Motilal Banarasidass, 1983.

Caeden, Maren L. The New Feminist Movement. Russell Sage Foundation: New York, 1974.

Calman, Leslie. Towards Empowerment: Women and Movement Politics in India. Colorado: Westview, 1992.

Caplan, Patricia. Class and Gender in India: Women and Their Organizations in a South Indian City. London: Tavistock, 1985.

Carr, Marilyn, Martha Alter Chen and Renana Jhabvala (ed.). Speaking Out Women's Economic Empowerment in South Asia. New Delhi: Vistaar, 1996.

Connell, R W. Masculinities. Berkeley: University of California Press, 1995.

De Beauvoir, Simone. The Second Sex. Trans. H.M. Parshley. New York: Vintage, 1974.

Desai, N and M Krishnaraj. Women and Society in India. Delhi: Ajantha, 1987.

Desai, Neera and Vibhuti Patel. Indian Women: Change and Challenge in the International Decade, 1975-85. Mumbai: Popular Prakashan, 1985.

Dines, Gain And Jean M Humez. Gender, Race and Class in Media. California: Sage, 1994.

Forbes, G. Women in Modern India. Cambridge: Cambridge University Press, 1998.

Friedan, Betty. The Feminine Mystique. London: Norton, 1963.

Glover, David and Cora Kaplan. Genders. London: Routledge, 2007.

Goffman, Erving. Gender and Advertisement. New York: Harper and Row, 1976.

Gutmann, Amy. Liberal Equality. New York: Cambridge University Press, 1978.

Jain, Jasbir (ed.). *Women's Writing- Text and Context*. Jaipur: Rawat, 1997.

Jayawardena, Kumari. *Feminism and Nationalism in the Third World*. London: Zed, 1986.

Kaplan, Patricia (ed.). *The Cultural Construction of Sexuality*. London: Tavistock, 1987.

Mulvey, Laura. "Visual Pleasure and Narrative Cinema". In Leo Braudy and Marshall Cohen(ed.). *Film Theory and Criticism: Introductory Readings*. New York: OUP, 1999: 833-44.

Macdonald, Myra. *Representing Women: Myths of Femininity in the Popular Media*. London: E.Arnold, 1995.

Mac Cormack, Carol P. and Marilyn Strathern (ed.). *Nature, Culture and Gender*. Cambridge: Cambridge University Press, 1980.

Mohanty, C T. *Feminism Without Borders: Decolonising Theory Practising Solidarity*. DurhamN.C: Duke University Press, 2003.

Myers, Kristen A, Cynthia M Anderson and Barbara Risman. *Feminist Foundations: Toward Transforming Sociology (A Gender & Society Reader)*. London: Sage, 1998.

Oakley, Ann. *Sex, Gender and Society*. New York: Maurice Temple Smith Ltd, 1972.

Rich, Andrienne. *Of Women Born: Motherhood as Experience and Institution*. New York:Norton, 1976.

Sharma, S R. *Perspectives on Feminism*. Jaipur: Ritu, 2008.

Sharmila Rege (ed.). *Sociology of Gender: The Challenge of Feminist Sociological Knowledge*.London: Sage, 2003.

Krishna, Sumi. *Livelihood and Gender Equity in Community Resource Management*. New Delhi:Sage, 2004.

Thakur, B S and Binod C Agarwal. *Media Utilisation for the Development of Women and Children*. New Delhi: Concept, 1989.

Van Zoonen, Lisbet. *Feminist Media Studies*. New Delhi; Sage, 1994.

Whyte, R O and P Whyte. *The Women of Rural Asia*. Colorado: Westview, 1982.

SEMESTER-I

PAPER: 7: GENDER AND WOMEN IN ANCIENT WORLD

Number of credits: 4

Nature of course: GE

Aim of the course: The broad aim is to make students knowledgeable and also to sensitize them about women in a historical perspective.

Objectives of the course:

- i. To develop a critical understanding of the subject;
- ii. To know the conditions of women in main civilizations of the ancient world;
- iii. To know the history of women in her material milieu.

UNIT 1: Introduction:

- A. Understanding gender; Gender and historical analysis; its contribution towards understanding social relations in ancient world;
- B. Gender and the prehistoric world: technological development, social settings, cultural, religious and ideological development and women;
- C. Historiography on women in ancient world.

UNIT 2: Women in Ancient Mesopotamia:

- A. Women in Sumerian and Babylonian worlds;
- B. Temple, religion and politics: women in ancient Mesopotamia;
- C. Education, health, culture and social and legal status.

UNIT 3: Women in Ancient Egypt:

- A. Women through the kingdoms: The Early dynastic period, Old, Middle and Late kingdoms;
- B. Social, economic and legal status of women in ancient Egypt;
- C. Political connections, health, education, medicine and the issue of women in ancient Egypt world.

UNIT 4: Women in Greeco-Roman World:

- A. Critical understanding of the historiography;
- B. Women in ancient Greece: From archaic to Hellenistic period- A socio-political, economic and cultural perspective.
- C. Women in ancient Roman world: From Pre-Roman to Republic to Empire- A socio-political, economic and cultural perspective.

Classroom strategy:

The major emphasis will be on theory aspect. Hence formal lectures will be given priority. Guest lecture, too, may be arranged depending upon the requirement of the course module. Projects, assignments, discussions and tutorial classes will form part of the class room teaching of the course. Graphics and videos may also form part of the teaching wherever it is required and possible.

Suggested readings:

- Burguiere et.al. (eds), *A History of the Family: Distant Worlds, Ancient Worlds, Polity*, 1996.
- Sarah Pomeroy, *Goddesses, Whores, Wives and Slaves: Women in Classical Antiquity*, Schocken, Books 1995.
- Archer, Fischler and Wyke (eds), *Women in Ancient Societies*, Routledge, 1994.
- Gerda Lerner, *The Creation of Patriarchy*, OUP, 1986.
- Zainab Bahrani, *Women of Babylon: Gender and Representation in Mesopotamia*, Routledge, 2001.
- Gay Robins, *Women in Ancient Egypt*, Stanford University Press 1993.
- *Women in ancient Mesopotamia Civilization of Ancient Iraq* by Foster and Foster
- *Women in European History*, Ed by Renate Bridenthal et al.
- Bryan, B. "The Evidence for Female Literacy from Theban Tombs of the New Kingdom,"
- Ward, "The Egyptian Economy and Non-royal Women: Their Status in Public Life" [Web essay];
- Wente, "A Husband to His Deceased Wife (letter)," Papyrus Leiden I.
- Manniche, "Some Aspects of Ancient Egyptian Sexual Life,"
- Cameron and A. Kuhrt, eds. *Images of Women in Antiquity*. Detroit: Wayne State U. Press, 1993
- Arjava, A. *Women and Law in Late Antiquity*. New York: Clarendon, 1996.
- Barrett, A.A. *Agrippina: Sex, Power, and Politics in the Early Empire*. New Haven: Yale U. Press, 1996.
- Blundell, S. and M. Williamson, eds. *The Sacred and the Feminine in Ancient Greece*. London: Routledge, 1998.
- Calame, C. *Choruses of Young Women in Ancient Greece: Their Morphology, Religious Role, and Social Function*.
- Cohen, D. *Law, Sexuality and Society*. Cambridge: Cambridge University Press, 1991.
- Foley, ed *Reflections of Women in Antiquity*. New York: Gordon and Breach Science, 1981
- Dixon, S. *The Roman Family*. Baltimore: Johns Hopkins University Press, 1992.
- _ . *The Roman Mother*. Norman: U. of Oklahoma Press, 1988.
- Hawley, R. and B. Levick, eds. *Women in Antiquity*. London: Routledge, 1995.
- Wyke, M., ed. *Gender and the Body in the Ancient Mediterranean*. Oxford: Blackwell Publishers, 1998.
- Zoll, A. *Gladiatrix: the True Story of History's Unknown Woman Warrior*. New York: Berkley Blvd, 2002.
- Waite, M.E. *A History of Women Philosophers: Ancient Women Philosophers 600 B.C. to 500 A.D.*
- Kerenyi, K. *Athene: Virgin and Mother in Greek Religion*. Irving, TX: Spring Publications, 1979
- _ . *Goddesses of Sun and Moon: Circe/Aphrodite/Medea/Niobe*. Irving, TX: Spring Publications, 1979b.
- _ . *Zeus and Hera: Archetypical Image of Father, Husband and Wife*. London: Routledge & Kegan Paul, 1975.
- _ . *Eleusis: Archetypical Image of Mother and Daughter*. Princeton: Princeton University Press, 1967.
- Kraemer, R.S. *Women's Religions in the Greco-Roman World: a Sourcebook*. London: Oxford, 2004.
- Lacey, W.K. *The Family in Classical Greece*. Ithaca: Cornell University Press, 1989.
- McClure, L. *Spoken Like a Woman: Speech and Gender in Athenian Drama*. Princeton: Princeton University Press, 1999.
- McGinn, T.A. *Prostitutes, Sexuality, and the Law in Ancient Rome*. New York: Oxford, 1998.

PAPER: 8: WOMEN IN MEDIEVAL WORLD

Number of credits: 4

Nature of course: DCEC

Aim of the course: The broad aim is to make pupil understand the history of the inauguration of cinema on the world horizon with its growing intent, influence, glamour and potential as well as harbinger of change.

Objectives of the course:

- i. To understand the changes in the condition of women during the medieval period.
- ii. To read the myths, traditions, orthodoxy and the actuality in the making of the history of women in this period.
- iii. To read about their liberation/subjugation.

UNIT 1: Women in Medieval Europe-1:

- A. Introduction-Historiography, Women Writers of Medieval and Modern Days.
- B. Women in Renaissance and Reformation.
- C. Women in 17th-18th Century.
- D. Women and Politics-Medieval Queenship: Theory and Practice

UNIT 2: Women in Medieval Europe-2:

- A. Women and Society-Family, Marriage, Sex, Body
- B. Health, Medicine, Witchcraft, Religion.
- C. Women and Art, Architecture, Literature.
- D. Women and Work-Female Labour in Medieval Europe.

UNIT 3: Women in Medieval Islam:

- A. Historiography.
- B. Approaches to the Study of Women in Islam-The Holy Quran, the Hadith and the Sharia.
- C. Women under the Caliphs, the Abbassid and the Ummaiyads.
- D. Family, Marriage, Sex and Health.

UNIT 4: Women in Medieval Asia:

- A. Historiography-Japan, China and South Asia
- B. Women in Medieval Japan
- C. Women in Medieval China
- D. Women in Medieval South Asia

Classroom strategy:

It will be a blend of formal theoretical teaching and discussions. Audio-visual display, presentations, assignments, discussions, quiz and brainstorming sessions will equally be employed. Wherever possible, guest lectures may also be organized.

Suggested readings:

- Amt, Emilie, ed. Women's Lives in Medieval Europe: A Sourcebook. New York and London: Routledge, 1993. Baker, Derek, ed. Medieval Women. Studies in Church History: Subsidia, I. Oxford: Basil
- Blackwell, 1978.

- B. Hanawalt, *Women and Work in Preindustrial Europe*, Bloomington: Indiana University Press, 1986
- Bennett, Judith. *Women in the Medieval English Countryside: Gender and Household in Brigstock before the Plague*. New York and Oxford: Oxford Univ. Press, 1987.
- Clanchy, Michael T. *Abelard: A Medieval Life*. Oxford: Blackwell, 1997.
- Dronke, Peter. *Women Writers of the Middle Ages*. Cambridge: Cambridge University Press, 1984.
- Vern L. Bullough and James Brundage, Ed, *In Sexual Practices and the Medieval Church*, Buffalo: Prometheus Books, 1982.
- Green, Monica. *The Trotula: A Medieval Compendium of Women's Medicine*. Philadelphia: University of Pennsylvania Press, 2001.
- Hanawalt, Barbara. *The Ties that Bound: Peasant Families in Medieval England*. New York and Oxford: Oxford Univ. Press, 1986.
- Hanawalt, Barbara, ed. *Women and Work in Preindustrial Europe*, Bloomington: Indiana University Press, 1986.
- Rosmarie Morewedge, Ed, *In The Role of Women in the Middle Ages*,
- Herlihy, David. *Opera Muliebria: Women and Work in Medieval Europe*. New York: McGraw Hill, 1990.
- Hollister, C. Warren. *Medieval Europe: A Short History*. 8th ed. Boston: McGraw Hill, 1998.
- John Carmi Parsons, *In Medieval Queenship*, New York: St. Martin's Press, 1993.
- Johnson, Penelope. *Equal in Monastic Profession: Religious Women in Medieval France*. Chicago: University of Chicago Press, 1991.
- Leonardi, Susan J. *Dangerous by Degrees: Women at Oxford and the Somerville College Novelists*, New Brunswick and London: Rutgers Univ. Press, 1989.
- Constance M. Rousseau and Joel T. Rosenthal, *In Women, Marriage, and Family in Medieval Christendom*, Kalamazoo: Medieval Institute Publications, 1998.
- Nichols, John A., and Shank, Lillian Thomas, eds. *Distant Echoes: Medieval Religious Women, Volume One*. Kalamazoo: Cistercian Publications, Inc., 1984.
- Ozment, Steven. *Ancestors: The Loving Family in Old Europe*. Cambridge, Mass.: Harvard University Press, 2001.
- J. C. Parsons, *Queen and Society in Thirteenth-Century England*, New York: Macmillan, 1995.
- Parsons, John Carmi, ed. *Medieval Queenship*. New York: St. Martins, 1993.
- Petroff, Elizabeth. *Body and Soul: Essays on Medieval Women and Mysticism*. New York: Oxford University Press, 1994.
- C. G. Crump and E. F. Jacob, *In The Legacy of the Middle Ages*, Oxford: Clarendon Press, 1926.
- Rosenthal, Joel T., ed. *Medieval Women and the Sources of Medieval History*. Athens and London: University of Georgia Press, 1990.
- John A. Nichols and Lillian T. Shank, *In Medieval Religious Women, Volume One, Distant Echoes*, Kalamazoo: Cistercian Publications Inc., 1984.
- Stuard, Susan Mosher, ed. *Women in Medieval History and Historiography*. Philadelphia: University of Pennsylvania Press, 1987.
- Wemple, Suzanne Fonay. *Women in Frankish Society: Marriage and the Cloister 500-900*. Philadelphia: University of Pennsylvania Press, 1981.
- Wilson, Katharina M., ed. *Medieval Women Writers*. Athens: University of Georgia Press, 1984.
- Wood, Charles T. "Queens, Queens, and Kingship: An Inquiry into Theories of Royal William C. Jordan et al, *In Order and Innovation in the Middle Ages*, Princeton: Princeton Univ. Press, 1976.
- Ahmed, Leila. 1992. *Women and Gender in Islam: Historical Roots of a Modern Debate*. Yale University Press.

SEMESTER:

III

PAPER: 10 : GENDER AND WOMEN IN ANCIENT INDIA

Number of credits: 4

Nature of course: DCEC

Aim of the course: The broad aim is to make students understand the changing position of women throughout the ancient Indian period and its impact on the then society.

Objective of the course:

- i. To develop a critical understanding of the subject;
- ii. To critically analyse the evolution of various traditions, institutions and the role of state in the changing position of women.

UNIT 1: Introduction:

- A. Historiography-Colonial, Nationalist, Marxist and Others; Original Sources.
- B. Women in various religious Traditions-Brahmanical, Buddhist, Jaina, Bhakti, Tantrik.
- C. Ancient Indian Women-An Overview.

UNIT 2: Women in Ancient Indian Literary Tradition:

- A. Women in Early Indian Inscriptions.
- B. Understanding Women through Ancient Indian Literature.
- C. Position of Women as depicted in Smritis and Law books

UNIT 3: Women and Family:

- A. The Patriarchy and the Accommodation of Female; The concept and working of matriliney –Anthropological and Sociological perspectives in historical reconstructions.
- B. The Socio-Sexual Construction of Womanhood-Education, Marriage, Family and Household.
- C. Women and Property-The issue of Stridhana.
- D. Legal Position of Women in Family.

UNIT 4: Reflections on Various Facets:

- A. Women for Pleasure- The Institutions of Devdasi and Prostitution; Women in Public Sphere- Wage Earners, Rulers and Patrons.
- B. Body, Sex, Eroticism and Love as depicted in Classical Literature.
- C. Socio-Religious Movements and Women-Virsaivas and Srivaisanava Community; Ascetic Women.

Classroom Strategy:

The major emphasis will be on theory aspect. Hence formal lectures will be given priority. Guest lecture, too, may be arranged depending upon the requirement of the course module. Projects, assignments, discussions and tutorial classes will form part of the class room teaching of the course. Graphics and videos may also form part of the teaching wherever it is required and possible.

Suggested readings:

- Altekar, A.S., The Position of Women in Hindu Civilisation, second revised edition, chs. 8, 9.
- Aparna Basu and A .Taneja [eds] Breaking out of Invisibility; Women in Indian History, 2002
- Atre, Shubhangana, The Archetypal Mother, 1987.
- Barai, Kumudini, Role of women in the History of Orissa; From the earliest times to 1568A.D. 1994
- Bhattacharji, Sukumari, Women and Society in Ancient India, 1994
- Bhattacharyya, N.N. The Indian Mother Goddess. 3Revised edition.1999
- Blackstone, Katharine R., Women in the Footsteps of the Buddha: Struggle for Liberation in the
the
Their Gathas, 1998.
- Carroll, B.A. (ed), Liberating Women's History: Theoretical and Critical Essays, 1976.
- Centuries, Manohar, 2009.
- Chakravarty Uma and Kum kum Roy "In search of our past: review of the limitations and possibilities of the historiography of women in early India" EPW, 23(18), April 30, 1988.
- Chakravarty Uma "Beyond the Altekarian paradigm: Towards the new understanding of gender relations in early Indian history" Social Scientist, 16(8), August 1988.
- Chakravarty, Uma, Everyday Lives, Everyday Histories; Beyond the Kings and Brahmanas of
Ancient India, 2006
- Chakravarty, Uma, 'Whatever happened to the vedic Dasi?: Orientalism, Nationalism and Script from the past' in Sangari and Vaid [eds] Recasting Women,1989
- Chitgopekar Nilima (ed), Invoking Goddesses: Gender Politics in Indian Religion, 2002
- Dehejia, Vidya [ed], Representing The Body: Gender Issues in Indian Art
- Ehrenfels, O.R, The Mother Right in India.1941
- Godelier Maurice, "The Origin of Male Domination" New Left Review, 127, May-June 1981.
- Goddesses, OUP, 2002.
- Hildebeitel, A. and K. Erndl (eds), Is the Goddess a Feminist: The Politics of South Asian
- Hirschon, Renee, Women and Property: Women as Property, 1984.
- Jaini, Padmanabh, Gender and Salvation, 1992.
- Jaiswal, Suvira "Women in early India: problems and perspectives" Proceedings of the Indian History Congress, 1981, pp. 54-60.
- Joan Wallach Scott, Gender and Politics of History, 1986.
- Kapadia, K.M., Marriage and Family in India, third revised edition, 1967.
- Karve, Irawati, Kinship Organization in India, second revised edition, 1965.
- Kosambi, D.D., Myth and Reality, 1962.
- Moore, Henrietta, Feminism and Anthropology, 1988.
- Nath, Vijay, The Puranic World: Environment, Gender, Ritual and Myth, 2008.
- Orr, Leslie, Donors Devotees and Daughters of the God, 2000
- Pintchman, Tracy, The Rise of the Goddess in the Hindu Tradition, Delhi, 1997.
- Ramaswamy, Vijaya, Divinity and Deviance: Women in Virashaivism, OUP, Delhi, 1996.
- Ramaswamy, Vijaya, Walking Naked: Women, Society, and Spirituality in South India, 1997.
- Rangachari, Devika, Invisible Women, Visible Histories. Society, Gender and Polity in North
India. 2009
- Rosaldo and Lamphere (eds), Women, Culture and Society, 1974.
- Roy, Kumkum (ed), Women in Early Indian Societies, Manohar, 1999.
- Roy, Kumkum, 'The King's household: structures and spaces in the domestic Tradition' EPW 17[43]1992
- Sanday, Female Power and Male Dominance: On the Origins Of Sexual Inequality, Cup, 1981
- Shah, Kirit K., Problem of Identity: Women in Early Indian Inscriptions, OUP, 2001
- Shah, Shalini, Love, Eroticism and Female Sexuality in the Classical Sanskrit Literature 7-13th

Century.

- Shah, Shalini, Poetesses in the Classical Sanskrit Literature: 7th-13th Centuries
- Shah, Shalini, The Making of Womanhood: Gender Relations in the Mahabharata, 1995
- Tharu, Susie and K. Lalita (eds), Women Writing in India: 600 B.C. to the present, Delhi, 1993.
- Tyagi, A.K., Women Workers in Ancient India, New Delhi, 1994.
- Tyagi, Jaya, Engendering the Early Household, Orient Longman, Delhi, 2008.
- Wright Rita(ed), Gender and Archaeology, 1996.
- Averil Cameyon, Images of Women in Antiquity
- Prativa Jain, Women Images
- Suvira Jaiswal, Women in early India
- Triati Sharma, Women in Ancient India
- A.K. Tyagi, Women Workers in ancient India

SEMESTER: III

MEDIEVAL INDIA

PAPER: 5: GENDER AND WOMEN IN MEDIEVAL INDIA

Number of credits: 4

Nature of course: GE

Aim of the course: The broad aim is to acquaint students with the basic understanding of the history of women in Mughal India.

Objective of the course:

- i. To understand position of women in different aspects.
- ii. To develop a critical reading of the subject;

UNIT 1:

- A. Historiography.
- B. Imperial Women-Petticoat Government, Matrimonial Relations with the Rajputs, Nurjehan Junta Jahanara's trading activities.
- C. Sovereignty and the 'domestic' domain: women's agency in Turk-o-Mongol tradition; imperial women and the establishment of Mughal rule; Harem and sovereignty.
- D. Courtly Love, Body and Emotion.

UNIT 2:

- A. Common Women-Everyday Life, Household Life, Space within House.
- B. Legal Rights, Rights over property, Divorce, Education.
- C. Economic Activities, Labourer.
- D. Prostitutes, Entertainer.

UNIT 3:

- A. Literature and Women.
- B. Socio-Religious Reform Movement and Women.
- C. Health, Medicines and Women.
- D. Urbanization and Growing Trading Activities and its Impact on women.

Classroom strategy:

The major emphasis will be on theory aspect. Hence formal lectures will be given priority. Guest lecture, too, may be arranged depending upon the requirement of the course module. Projects, assignments, discussions and tutorial classes will form part of the class room teaching of the course.

Suggested readings:

- Ruby Lal, Domesticity and Power in the Early Mughal World (Cambridge, 2005)
- Harbans Mukhia, The Mughals (Delhi: 2009)
- Farhat Hasan, State and Locality in Mughal India: Power Relations in Western India, c. 1572-1730 (Cambridge, 2005), chapter V.
- Leila Ahmed, Women and Gender in Islam: Historical Roots of a Modern Debate (Yale

University Press, 1992)

- Ruby Lal 'Historicizing the harem: The Challenge of a Princess's Memoir' *Feminist Studies*, 30, 3 (Fall/winter 2004)
- Leslie P. Pierce, *The Imperial Harem: Women and Sovereignty in the Ottoman Empire* (New York: 1993)
- Gavin Hambly (ed.), *Women, Patronage and Self-representation in Islamic Societies* (Albany: 2000)
- Afsaneh Najmabadi, *Women with Moustaches and Men without Beards: Gender and Sexual Anxieties of Iranian Modernity* (Berkeley, 2005)
- Rosalind O'Hanlon 'Manliness and Imperial Service in Mughal North India' *JESHO*, 42 (February 1999), 47-93
- Rosalind O'Hanlon 'Kingdom, Household and Body: History Gender and Imperial service under bar' *MAS*, 41, 5 (2007), 887-922
- Farhat Hasan 'Norms and motions in the Ardhakathanaka' in Vijaya Ramaswamy ed. *Biography as History* (Delhi, 2009).

SEMESTER: III MODERN INDIA: 1757 AD-1947 AD

PAPER: 8: GENDER AND WOMEN IN COLONIAL INDIA

Number of credits: 4

Nature of course: DCEC

Aim of the course: The broad aim is to explore the issue of women history during the colonial era and also to sensitize students about their struggle as well as progress and their multidimensional activities like education, reforms, political role, sexuality, relations etc.

Objective of the course:

- i. To explore the history of women in colonial India.
- ii. To know about the changes, their various roles and relations with various segments of society.

UNIT 1: Women, Politics and Colonial Regime:

- A. Introduction-Understanding Gender in Particular Reference to Colonial India;
- B. Historiography; Sources.
- C. Women in Politics-1757-1857; Women in 1857 Revolt.
- D. Women in Politics-1858-1947-Nationalism and Participation in Indian National Movement.

UNIT 2: Society, Family and Women:

- A. Socio- Religious Reform Movements and Women.
- B. Family, Sexuality and Domesticity.
- C. Women and Education-Efforts, Policies, Nature, Impact on Family and Society; Public Services.
- D. Social Status of Women of Different Castes and Classes-Struggles, Woes, Commonness and Differentiations; Continuity and Change .

UNIT 3: Economy, Judiciary and Women:

- A. Economic Status; In Industries and Agriculture.
- B. Legal Space and Women- Legal Rights, Property & Inheritance Rights, Franchise Rights, Violence, Crimes.
- C. Communalism, Partition and Women.
- D. Wars, Riots and Women

UNIT 4: Culture and Women:

- A. Painting
- B. Dance and Music
- C. Film and Theatre
- D. Media

Classroom strategy:

The major emphasis will be on theory aspect. Hence formal lectures will be given priority. Guest lecture, too, may be arranged depending upon the requirement of the course module. Projects, assignments, discussions and tutorial classes will form part of the class room teaching of the course.

Suggested readings:

- Neera Desai, Women in Modern India
- Jana M. Everett, Women and Social Change in India
- Geraldine Forbes, Women in Modern India
- Janaki Nair, Women and Law in Colonial India: A Social History
- R. Nanda (ed.), India Women: From Purdah to Modernity
- Chowdhry, Prem, The Veiled Women: Shifting Gender Equations in Rural Haryana (Oxford University Press, Delhi, 1994)
- Forbes, Geraldine, Women in Modern India (Cambridge University Press, Cambridge, 1996)
- Gupta, Charu, Sexuality, Obscenity, Community: Women, Muslims and the Hindu Public in Colonial India (Permanent Black, Delhi, 2001)
- Kumar, Radha, The History of Women's Movements for Women's rights and Feminism in India 1800-1990 (Delhi, 1993)
- Malhotra, Anshu, Gender, Caste and Religious Identities: Restructuring Class in Colonial Punjab (Oxford University Press, Delhi, 2002)
- Minault, Gail, Secluded Scholars: Women's Education and Muslim Social Reform in Colonial India (OUP, Delhi, 1998)
- Rao, Anupama (ed.), Gender and Caste (Kali for Women, Delhi, 2003)
- Sangari, Kumkum and Sudesh Vaid (eds), Recasting Women: Essays in Colonial History (Kali for Women, Delhi, 1989)
- Sarkar, Tanika & Urvashi Butalia (eds), Women and the Hindu Right: A Collection of Essays (Kali for Women, Delhi, 1995)
- Sarkar, Tanika, Hindu Wife Hindu Nation (Permanent Black, Delhi, 2001).

PAPER: 2: ANCIENT INDIAN PHILOSOPHY AND KNOWLEDGE SYSTEM

Number of credits: 5

Nature of course: SEEC

Aim of the course: The broad aim is to understand the ancient treasure of Indian wisdom through their religion and philosophy.

Objective of the course:

- i. To know the history of ancient Indian knowledge system.
- ii. To know about the growth of ancient Indian philosophy.
- iii. To understand the relation between the two and the beginning of a thinking tradition in ancient India.

UNIT 1: Beginning of Ancient Indian Philosophy and Knowledge:

- A. Vedic Corpus-Rg Veda, Sama Veda, Yajur Veda and Atharva Veda; Brahmanas; Aranyakas.
- B. Cosmology of the Vedas- Origin of Calendar, Linguistics and Astronomy.
- C. Vedangas and Specialized Knowledge; Sulba Sutra and Vedic Geometry; Upaveda.
- D. Upanishads-Basis of Indian Philosophy: Atman and Brahma.

UNIT 2: Creation of Knowledge and Philosophy in a Transitional Society:

- A. Buddhist and Jainist Philosophy- Epistemology, Cosmology, logic.
- B. Evolution of Social Philosophy-The Dharmasastras; the Smritis; Puranas.
- C. Philosophy of Other Heterodox Sects- Ajivikas, Lokayat.
- D. The Six Schools-Sankhya, Yoga, Nyaya, Vasheshika, Purva Mimansa, Vedanta/Uttar Mimansa; the Six Sub Schools of Vedanta.
- E. Tolkappiyam and manual; contributions of Tiruvalluvar; linguistic and grammar; Temple culture and worship – the Agamas.

UNIT 3: Classical knowledge System:

- A. Astronomy and Mathematics – Bhaskara, Aryabhata, Varahamihira;
- B. Treatises on Statecraft: The Arthasastra;
- C. Healthcare Systems: Ayurveda-Vrksha, Hasti and Asva; Samhitas- Charaka, Susruta, and Bhela; Patanjali-Yoga System.
- D. Lexicography: Amara and Hemachandra; Historionics: Bharata and Natyasastra; Vatsayana - Kamasutra; Architecture: Samarangana Sutradhara.

UNIT 4: Theoretical Discourse:

- A. Growth of Logic/Nyaya-Sixteen Categories; Anvikshki.
- B. Language and Grammar - Dhvani and Rasa: Anandvardhan and Abhinav Gupta and Sphota-Sphotavada of Bhartihari.
- C. Cosmology – Jiva-atma and loka – panchabhutas, padarthas.
- D. Concepts of truth- Laukika, Vyavaharika and Paramarthika.

Classroom strategy:

The major emphasis will be on theory aspect. Hence formal lectures will be given priority. Guest lecture, too, may be arranged depending upon the requirement of the course module. Projects, assignments, discussions and tutorial classes will form part of the class room teaching of the course.

Suggested readings:

- H.C.Bharadwaj: Aspects of Ancient Indian Technology.
- D.P.Chattopadhyaya: Science and Society in Ancient India.
- A.K.Bag: Science and Civilization in Ancient India, Vol.I.
- A.K.Bag: India and Central Asia; Science and Technology (2 vols.).
- A.K.Warder: Indian Buddhism
- A.K.Chatterjee: A Comprehensive History of Jainism
- M.Hiriyanna: Outline History of Indian Philosophy.
- K.Damodaran: Indian Thought a Critical Outline
- S.N.Dasgupta: Outline of Indian Philosophy.
- H.Zimmer: Philosophies of India.
- E.Solomon: Indian Dialectics
- B.Matilal: The Word and the World
- B.Matilal: The Character of Logic in India
- B.Matilal: Perception.
- R.P.Kangle: Arthasastra of Kautilya.
- C.Sivaramamurti: Indian Architecture
- S.S.Barlingay: A Modern Introduction of Indian Logic
- P.V.Kane: Sanskrit Poetics.
- Krishna Chaitanya: An Introduction to Sanskrit Poetics
- Patrick Oliville: The Dharma Sutras
- T.Scherbatsky: Introduction to Buddhist Logic
- George Gheevarghese Joseph: Crest of the Peacock.
- S Radhakrishnan: Indian Philosophy, OUP.

PAPER: 2: ANCIENT INDIAN PHILOSOPHY AND KNOWLEDGE SYSTEM

Number of credits: 5

Nature of course: SEEC

Aim of the course: The broad aim is to understand the ancient treasure of Indian wisdom through their religion and philosophy.

Objective of the course:

- i. To know the history of ancient Indian knowledge system.
- ii. To know about the growth of ancient Indian philosophy.
- iii. To understand the relation between the two and the beginning of a thinking tradition in ancient India.

UNIT 1: Beginning of Ancient Indian Philosophy and Knowledge:

- A. Vedic Corpus-Rg Veda, Sama Veda, Yajur Veda and Atharva Veda; Brahmanas; Aranyakas.
- B. Cosmology of the Vedas- Origin of Calendar, Linguistics and Astronomy.
- C. Vedangas and Specialized Knowledge; Sulba Sutra and Vedic Geometry; Upaveda.
- D. Upanishads-Basis of Indian Philosophy: Atman and Brahma.

UNIT 2: Creation of Knowledge and Philosophy in a Transitional Society:

- A. Buddhist and Jainist Philosophy- Epistemology, Cosmology, logic.
- B. Evolution of Social Philosophy-The Dharmasastras; the Smritis; Puranas.
- C. Philosophy of Other Heterodox Sects- Ajivikas, Lokayat.
- D. The Six Schools-Sankhya, Yoga, Nyaya, Vasheshika, Purva Mimansa, Vedanta/Uttar Mimansa; the Six Sub Schools of Vedanta.
- E. Tolkappiyam and manual; contributions of Tiruvalluvar; linguistic and grammar; Temple culture and worship – the Agamas.

UNIT 3: Classical knowledge System:

- A. Astronomy and Mathematics – Bhaskara, Aryabhata, Varahamihira;
- B. Treatises on Statecraft: The Arthasastra;
- C. Healthcare Systems: Ayurveda-Vrksha, Hasti and Asva; Samhitas- Charaka, Susruta, and Bhela; Patanjali-Yoga System.
- D. Lexicography: Amara and Hemachandra; Historionics: Bharata and Natyasastra; Vatsayana - Kamasutra; Architecture: Samarangana Sutradhara.

UNIT 4: Theoretical Discourse:

- A. Growth of Logic/Nyaya-Sixteen Categories; Anvikshki.
- B. Language and Grammar - Dhvani and Rasa: Anandvardhan and Abhinav Gupta and Sphota-Sphotavada of Bhartihari.
- C. Cosmology – Jiva-atma and loka – panchabhutas, padarthas.
- D. Concepts of truth- Laukika, Vyavaharika and Paramarthika.

Classroom strategy:

The major emphasis will be on theory aspect. Hence formal lectures will be given priority. Guest lecture, too, may be arranged depending upon the requirement of the course module. Projects, assignments, discussions and tutorial classes will form part of the class room teaching of the course.

Suggested readings:

- H.C.Bharadwaj: Aspects of Ancient Indian Technology.
- D.P.Chattopadhyaya: Science and Society in Ancient India.
- A.K.Bag: Science and Civilization in Ancient India, Vol.I.
- A.K.Bag: India and Central Asia; Science and Technology (2 vols.).
- A.K.Warder: Indian Buddhism
- A.K.Chatterjee: A Comprehensive History of Jainism
- M.Hiriyanna: Outline History of Indian Philosophy.
- K.Damodaran: Indian Thought a Critical Outline
- S.N.Dasgupta: Outline of Indian Philosophy.
- H.Zimmer: Philosophies of India.
- E.Solomon: Indian Dialectics
- B.Matilal: The Word and the World
- B.Matilal: The Character of Logic in India
- B.Matilal: Perception.
- R.P.Kangle: Arthasastra of Kautilya.
- C.Sivaramamurti: Indian Architecture
- S.S.Barlingay: A Modern Introduction of Indian Logic
- P.V.Kane: Sanskrit Poetics.
- Krishna Chaitanya: An Introduction to Sanskrit Poetics
- Patrick Olivelle: The Dharma Sutras
- T.Scherbatsky: Introduction to Buddhist Logic
- George Gheevarghese Joseph: Crest of the Peacock.
- S Radhakrishnan: Indian Philosophy, OUP.

Or

LL.M. SEMESTER- IV

Course-III: International Humanitarian Law & Refugee Law

SLM LAW 01 402 E 4105

Objectives:

The United Nation Charter prohibits the threat or use of force by the States except in self-defence however the armed conflicts and war are the realities of our times. International Humanitarian Law (IHL) seeks, for humanitarian reasons, to limit the effects of armed conflict. It protects persons who are not or are no longer participating in the hostilities and restricts the means and methods of warfare. International humanitarian law is also known as the Law of War or the Law of Armed conflict. War and armed conflicts are the factors which create the problem of refugees.

This Course aims to give students an understanding of the evolution of the IHL, its convergence with other branches of international law, interplay between treaties, customary law and other sources. It introduces basic principles of IHL like-the Principle of Distinction between civilian and military objects, the Principle of Proportionality and the Principle of Military Necessity, and Protection of Hors de Combat etc. It aims to enable the students to find out the way of extending and strengthening the application of IHL to new conflict situations of mix characters like international war against terrorism, extra-territorial use of drone missiles and unmanned air craft, pre-emptive self-defence, non-international armed conflicts (internalised in character), occupation without physical presence of armed forces, self-determination movements within democratic nation States etc.

Further this course intends to equip the students with the awareness of the various problems of refugees and to inspire them to critically evaluate the international conventions and national legislation.

The course shall comprise of the following:

Unit I

Introduction and History of IHL

- Historic Context, law of Geneva and law of Hague, Definition of IHL
- Convergence With International Law of Human Rights, International Criminal law and Public International Law
- Sources of IHL: Treaties, Custom, General Principle of Humanity (Marten Clause)

Unit II

Application and basic Principles of IHL

- *jus in bello* and *jus contra bellum*
- Definition of Armed Conflicts and Classification of Conflicts: War, International Armed Conflicts (Armed Struggle for Self Determination, and Occupation) and Non-International Armed Conflicts; New Emerging Conflict Situations of mixed character
- the Principle of Distinction between Civilian and Military Objects, the Principle of Proportionality and the Principle of Military Necessity
- The Legal Control of Weapons

Unit III

Protection under IHL and its Enforcement

- Protection of Victim of War- Hors de combat (Wounded, Sick, Shipwrecked), Prisoners of War and Civilians
- Protection for Civilians Under the Occupied Territories
- Protection of Cultural Property and the Environment
- The Command Responsibility
- Role of the International Committee of the Red Cross in Implementation of IHL

Unit IV

Protection of Refugees

- Definition of refugees and displaced persons - their problems, determination of Refugee Status under the Refugee Convention of 1951 and Protocol of 1967
- the principle of Non-refoulement and the Right to Asylum
- Human Rights of the Refugees
- Strategies to combat refugee problem: a. Resettlement in Third Country b. Local Integration & Rehabilitation, Voluntary or Forced Repatriation d. other responses
- Protection of Refugee: under International Law and National Law; the Role of UNHCR
- Protection of Refugee and Indian Experience & policy

Suggested Readings:

1. Norbert Ehrenfreund, *The Nuremberg Legacy How the Nazi War Crimes Trials Changed the Course of History* (Palgrave Macmillan 2007)
2. Thierry Cruvellier, *Court of Remorse Inside the International Criminal Tribunal for Rwanda* (The University of Wisconsin Press 2006)
3. Rachel Kerr, *The International Criminal Tribunal for the Former Yugoslavia An Exercise in Law, Politics, and Diplomacy* (Oxford University Press 2004)
4. Knut Dormann, *Elements of War Crimes under the Rome Statute of the International Criminal Court: Sources and Commentary* (Cambridge University Press 2004 /ICRC)
5. Larry May, *Aggression and Crimes against Peace* (Cambridge University Press 2008)
6. Arnold Krammer, *War Crimes, Genocide, and the Law A Guide to the Issues* (Praeger 2010).

7. Frits Kalshoven, *Reflections on the Law of War Collected Essays* (Martinus Nijhoff Publishers, Leiden & Boston 2007).
8. Anthony Cullen, *The Concept of Non-International Armed Conflict in IHL* (Cambridge University Press 2010).
9. Ian Henderson, *The Contemporary Law of Targeting: Military Objectives, Proportionality and Precautions in Attack under Additional Protocol* (Martinus Nijhoff Publishers 2009).
10. Ustina Dolgopol & Judith Gardan, *The Challenge of Conflict: International Law Responds* (Martinus Nijhoff Publishers 2006).
11. Wolff Heintschel von Heinegg Volker (IHL Facing New Challenges Symposium in Honour of Knut Ipsen) (Springer 2007).
12. Gary D. Solis, *The Law of Armed Conflict IHL in War* (Cambridge University Press 2010).
13. Eric A. Heinze, *Waging Humanitarian War: Ethics, Law and Politics of Humanitarian Intervention* (SUNY Press: State University of New York Press 2009).
14. Frits Kalshoven and Liesbeth Zegveld, *Constraints On The Waging Of War: An Introduction to International Humanitarian Law* (ICRC (2001).
15. Laurie R. Blank & Gregory P. Noone, *International Law and Armed Conflict: Fundamental Principles and Contemporary Challenges in the Law of War* (Wolters Kulwer 2016).
16. Michael N. Schmitt and Jelena Pejic, *International Law and Armed Conflict: Exploring the Faultlines Essays in Honour of Yoram Dinstein* (Martinus Nijhoff Publishers Leiden-Boston 2007).
17. Yusuf Aksar *Implementing International Humanitarian Law From The Ad Hoc Tribunals to a Permanent International Criminal Court* (Routledge Taylor & Francis Group, London & New York 2004).
18. Howard M. Hensel, *The Legitimate Use of Military Force The Just War Tradition and the Customary Law of Armed Conflict* (Ashgate 2008).
19. Ustina Dolgopol & Judith Gardam, *The Challenge of Conflict International Law Responds* (Martinus Nijhoff Publishers Leiden-Boston 2006).
20. Andrew Clapham & Paola Gaeta, *The Oxford Handbook of International Law in Armed Conflict* (Oxford Handbooks, OUP Oxford (2014).

Suggested Readings are not exhaustive. Students are advised to read latest edition of the books.

LL.M. SEMESTER – II

Course – III: Law & Social Transformation

SLM LAW 01 203 C 4105

Objectives:

This course is designed to study – (a) awareness of Indian approaches to social and economic problems in the context of law as a means of social control and change and (b) to examine how law and legal institutions can be used to combat social oppression and inequalities in Indian Society.

UNIT– I

Law and Social Transformation:

- Law as an instrument of social change
- Law as the product of traditions and culture. Criticism and evaluation.

UNIT – I

Law and its Inter-relationships with Religion, Language, Community and Regionalism

Religion, language, community and regionalism as divisive factors

Responses of law to-

- Religion - Secularism as a solution to the problem.
- Language - through constitutional guarantees
- Community - through non-discrimination
- Regionalism - through unity
- Non-discrimination and protective discrimination (reservation)

UNIT – III

Gender Justice

Women and the Law

- Crimes against woman
- Empowerment of woman: Constitutional and other legal provisions
- Surrogacy

Third gender and law

Children and the Law:

- Child labour
- Child abuse
- Children and education

UNIT – IV

Reform of court processes:

- Criminal law: Plea bargaining; compounding and payment of compensation to victims, Prison reforms

Alternative approaches to law

- The jurisprudence of Sarvodaya- Gandhi, Vinoba Bhave; concept of *grama nyayalayas*

Suggested Readings:

1. Oliver Mendelsohn, *Law and Social Transformation in India* (Oxford University Press, 2015).
2. P. Ishwara Bhat, *Law and social transformation in India* (Eastern Book Co., 1st ed., 2009).
3. Krishna Pal Malik and Dr. Kaushik C Raval, *Law and Social Transformation in India* (Allahabad Law agency, 2014).
4. Durga Dass Basu, *Commentary on The Constitution of India* (Lexis Nexis, wadhwa, Nagpur, 2011).
5. Flavia Agnes, *Law and Gender Inequality: The Politics of Women's Rights in India* (Oxford Uni. Press, 2001).
6. Sunil Deshta and Kiran Deshta, *Law and Menace of Child Labour* (Arnol Publications, Delhi, 2000)
7. Marc Galanter (ed.), *Law and Society in Modern India* (Oxford Uni. Press, 1997).
8. Robert Lingat, *The Classical Law of India* (Oxford Uni. Press, 1998).
9. Upendra Baxi, *The Crisis of the Indian Legal System* (Vikas Publishing House, New Delhi, 1982).
10. Upendra Baxi (ed.), *Law and Poverty Critical Essays* (N M Tripathi, Bombay, 1988).
11. Duncan Derret, *The State, Religion and Law in India* (1999). Oxford University Press, New Delhi.
12. Indian Law Institute, *Law and Social Change : Indo-American Reflections* (Tripathi, Bombay, 1988).

Suggested Readings are not exhaustive. Students are advised to read latest edition of the books.

LL.M. SEMESTER- IV

Course-IV: International Environmental Law & Sustainable Development

SLM LAW 01 403 E 4105

Objectives:

The International Environmental Law (IEL) is a newly emerging branch of International Law. It focuses upon the relations and agreements among nations to secure the healthy state of Environment and guarantee sustainable and equitable use of Natural Resources. It intends to fix the liability for environmental pollutions and degradation of natural resources.

This course will introduce the structure of international environmental law and governance. It aims to acquaint the students with sources, principles, institutions and processes of IEL. This course will develop the students to critically examine the strategies of addressing the problem of environmental degradation by exposing them various principles of environmentalism and environmental justice. It will expose the students to many environmental issues like Climate Change, Hazardous Waste Management, Biodiversity and others.

The course shall comprise of the following:

Unit I

Introduction and Challenges of International Environmental Law (IEL)

- What is IEL? Nature and Scope
- International Environmental Problems, Causes and Legal Responses
- Sources of IEL: Treaties, Custom, General Principles, and Judicial Decisions; Hard Law and Soft Law
- Environmentalism and Environmental Justice
- Human Rights and Environment
- Environmental Politics: North vs South
- Environmental Crimes

Unit II

The Fundamental Principles of IEL

- State Sovereignty
- Right to Development
- Common Heritage (The Global Commons) and Common Concern of Humankind (*Erga Omnes*)
- Inter-generational and Intra-generational Equity
- State Responsibility and Liability

- Obligation Not to Cause Environmental Harm
- Common But Differentiated Responsibilities
- The Polluter Pay Principle
- The Absolute Liability
- ‘Good Neighbourliness’- Duty to Cooperate and Duties to Provide Prior Notification and to Consult in Good Faith
- Sustainable Development
- Right to Development
- Right to Clean, Healthy Environment
- Prevention Principle
- Precautionary Principle
- Duty to Assess Environmental Impact
- Public Participation

Unit III

Sustainable Development: International Environmental Governance

- State of Environmental Law Before the Stockholm (1972)
- Environmental Law and Policy from the Stockholm via Rio to Johannesburg and Beyond
- International Environmental Governance: UNEP and Multilateral Environmental Governance; International Environmental Institutions
- Resolution of Environmental Disputes

Unit IV

Some Issues of IEL

- Global Climate Change and Human Rights: Montreal Protocol, The UNFCCC, The Kyoto Protocol and the Paris Agreement; Cause, Consequences, Strategies and Problems
- Biodiversity and Human Rights: Convention on Biological Diversity and Cartagena Protocol on Biosafety; Biotechnology and Plant Genetic Resources; Trade in Endangered Species; Wetlands
- Hazardous and Radioactive Waste: The Basel Convention
- International Trade and the Environmental Protection
- War and Environment

Suggested Readings

1. Alexander Gillespie, *International Environmental Law, Policy, and Ethics* (Oxford University Press, UK 2014)
2. Cairo A. R. Robb, *International Environmental Law Reports Set: Volume 1-5*, (Cambridge University Press, 2009)

3. Christine Shearer, *Kivalina: A Climate Change Story* (Haymarket Books, 2011)
4. Daniel Bodansky, *The Art and Craft of International Environmental Law* (Harvard University Press, 2010)
5. David Archer and Stefan Rahmstorf, *The Climate Crisis: An Introductory Guide to Climate Change* (Cambridge University Press, 2009)
6. David E. Newton, *Environmental Justice: A Reference Handbook* (Contemporary World Issues) (ABC-CLIO, 2009)
7. David Hunter, James Salzman & Durwood Zaelk, *International Environmental Law and Policy Treaty Supplement: 2016 (University Casebook Series)*, (Foundation Press, 2016)
8. Elli Louka, *International Environmental Law: Fairness, Effectiveness, and World Order* (Cambridge University Press, 2006)
9. James R. May and Erin Daly, *Environmental Constitutionalism: Two Volume Set* (The International Library of Law and the Environment Series) (Edward Elgar Publishing Ltd., 2016)
10. James Salzman & Barton Thompson Jr, *Environmental Law and Policy (Concepts and Insights)* (Foundation Press 4th Edition, 2013)
11. John Kenneth Galbraith, 'The Affluent Society: Updated with a New Introduction' (Penguin, UK, 1999)
12. Michael Bowman, Peter Davies and Edward Goodwin *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing Ltd., 2016)
13. Navroz K. Dubas, *Handbook of Climate Change and India: Development, Politics and Governance*' (Routledge, 2015)
14. P Leelakrishnan, *Environmental Law in India* (Lexis Nexis, 2016)
15. Pierre-Marie Dupuy and Jorge E. Viñuales, *International Environmental Law* (Cambridge University Press 2015)
16. Ramin Jahanbegloo, *Talking Environment: Vandana Shiva in Conversation with Ramin Jahanbegloo* (Oxford University Press India, 2012)
17. Shawkat Alam, Sumudu Atapattu, Carmen G. Gonzalez and Jona Razzaque (eds.) *International Environmental Law and the Global South* (Cambridge University Press, 2015)
18. Thilo Marauhn and Ulrich Beyerlin, *International Environmental Law* (Hart Publishing, 2011)

LL.M. Semester-IV

Semester IV

Sr. No.	Nomenclature of Course	Core/Elective	Course Code	Credits
1	Dissertation	Core	SLM LAW 01 401 C 003015	15 Credits
Specialization: Constitutional Law & Human Rights				
2	Human Rights: Constitution of India	Elective	SLM LAW 01 401 E 4105	5 Credits
3	International Humanitarian Law & Refugee Law	Elective	SLM LAW 01 402 E 4105	5 Credits
4	International Environmental Law & Sustainable Development	Elective	SLM LAW 01 403 E 4105	5 Credits

LL.M. SEMESTER- IV

Course-I: Dissertation

SLM LAW 01 401 C 003015

LL.M. SEMESTER- IV

Course-II: Human Rights: Constitution of India

SLM LAW 01 401 E 4105

Objectives:

Boutros Boutros Ghali (1993) stated, the human rights constitutes a 'common language of humanity'. Though the cases of human rights are wide spread and frequent however we believe the possibility of human rights are greater than the realities of human rights. This Course aims to introduce the students to the ideas and languages of human rights and to consider Indian constitutional mechanism of respect, promotion and enforcement of human rights in India. It will foreground the students to complicated and contradictory aspects of the Indian

constitutional theories and practices of human rights. The Course aims to orient the students to explore tools and approaches for better promotion and enforcement of human rights of all peoples in India.

Syllabus: Human Rights: Constitution of India

The course shall comprise of the following:

Unit I

Philosophy of Human Rights:

- The Philosophical Foundations of Human Rights
- History of Human Rights
- The UN Charter, the Universal Declaration of Human Rights, ICCPR & ICESCR and other human rights treaties
- Nation State, Sovereignty, Citizenship and Human Rights
- Universalism and Cultural Relativism
- Individual Rights and Group Rights
- Globalisation and Human Rights
- Civil & Political Rights and Economic-Social-Cultural rights
- Politics 'for' and 'of' Human Rights

Unit II

Human Rights and the Constitution of India

- Transformation of India from Colonial to a Sovereign Socialist Secular Democratic Republic and existing Contradictions of life in India
- Fundamental Rights (Part III) and Directive Principles of State Policy (Part IV)
- Vertical and Horizontal Application of Human Rights
- Group Rights, Multiculturalism and Constitution of India
- The Role of Judiciary and Human Rights in India
- Enforcement of Human rights and Access to Justice Under the Constitution of India

Unit III

Derogation of Human Rights and the Constitution of India

- the Idea of Security State and Derogation of Human Rights
- Constitutional Provisions of Emergency and Human Rights
- Extra-ordinary laws in India and Human Rights
- Human Rights to Self-determination and Constitution of India

Unit IV

Social Justice and the Constitution of India

- Realisation Equal Citizenship through Affirmative Actions for all marginal sections of Indian population
- Special Welfare Laws for the SC-STs, Women, Children and workers
- Debating Economic Reforms and Structural Adjustment policies and Constitutional Imperatives of Social-Justice

- Welfare State, Liabilities and special privileges of public utilities
- Human Rights to Education and Health in India and the Constitutional Responsibility of the State

Suggested Readings:

1. Upendra Baxi, *The Future of Human Rights* (Oxford University Press, India, 2012).
2. Elbe Riedel, Gilles Glacca, & Christophe Golay, *Economic, Social and Cultural Rights: Contemporary Issues and Challenges* (Oxford University Press, UK, 2014).
3. Micheline Ishay, *The History of Human Rights: From Ancient Times to the Globalization Era* (University of California Press; 2 edition 2008).
4. Tony Evans, *The Politics of Human Rights: A Global Perspective (Human Security in the Global Economy)*, Pluto Press (2005).
5. Michael J. Perry, *Toward a Theory of Human Rights: Religion, Law, Courts* (Cambridge University Press 2006).
6. Claudio Corradetti, *Philosophical Dimensions of Human Rights Some Contemporary Views* (Springer 2011).
7. Ujjwal Kumar Singh, *The State, Democracy and Anti-Terror Laws in India* (Sage Publications India 2007).
8. Paramjit S. Judge, *Mapping Social Exclusion in India: Caste, Religion and Borderlands* (Cambridge University Press 2014).
9. C. Raj Kumar & K. Chockalingam, *Human Rights, Justice and Constitutional Empowerment* (Oxford University Press, India 2010).
10. Kalpana Kannabiran, *Tools of Justice: Non-discrimination and the Indian Constitution* (Routledge India 2015).
11. Christophe Jaffrelot, *Religion, Caste and Politics in India* (C Hurst & Co Publishers Ltd 2010).
12. Mahendra Pal Singh, V. N. Shukla's *Constitution of India* (Revised), (Eastern Book Company, 12th Edition 2016).
13. Austin Granville, *The Indian Constitution: Cornerstone of A Nation: Cornerstone of A Nation* (Oxford University Press, 1999).
14. B. R. Ambedkar (author), Arundhati Roy (Illustrator), *Annihilation of Caste: The Annotated Critical Edition* (Navayana 2015).
15. Seervai H.M., *Constitutional Law of India*, (In 3 Volumes, Reprint) (Universal Law Publishing - An imprint of Lexis Nexis; Fourth edition 2015).

Suggested Readings are not exhaustive. Students are advised to read latest edition of the books.

GENDER JUSTICE AND FEMINIST JURISPRUDENCE

(SL LAW 03 03 05 E 4004)

Credits: 4

Objective of the Course:

The objective of the course is to stress upon the importance of taking women's experiences in the law-making process and to undo the absence of women from the same in the past. The students will also be able to appreciate the importance of the different approaches in the feminist movement. The importance of certain issues concerning women from the feminist perspective will also be stressed upon.

This course on Gender Justice and Feminist Jurisprudence seeks to investigate the perspectives on law from a variety of contexts. The course aims to study the need and importance of feminism in the modern world context. It also aims to explore feminist critiques of mainstream law and legal theory. Students will be made equipped with divergent approaches to and methodologies within feminist legal theory as well as the challenges to feminist legal theory from inside and outside of feminism.

Learning Outcomes:

After the completion of this Course, the student would be able to:

- Understand the need and importance of feminist jurisprudence in the current world context.
- Understand the Constitutional Safeguards provided to the women in India and aware about the statutory provisions to protect the women against sexual harassment at work place.
- Analyse the nitty-gritty of the Sameness and Difference approach taken by the different schools of Feminism.
- understand the role of the State in the Feminist's goal of achieving social, political and economic equality. understand the social and moral connotations of law and sexuality and the feminist views on it.
- analyse, from a feminist perspective, the laws concerning Domestic Violence and cruelty in the domestic setting.
- Acquaintance with the current issues concerning sexuality and gender in India and around the world.

Note:

1. The question paper shall consist of Five Questions in all. The first question shall contain short answer type questions from all the units, carrying 3.5 marks each and the student shall be required to attempt any four questions out of eight.
 2. Question no. 2, 3, 4 and 5, shall be long- answer type questions from all the units and students shall be required to attempt any two out of the given three choices under each question from the individual unit. Each long answer type question shall carry 14 Marks. The Examiner will be free to set the questions either in problem forms or based on case law.
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UNIT-I

Concept of Gender Justice and Feminist Jurisprudence; United Nations and Human Rights of Women, Universal Declaration of Human Rights, 1948, Convention on Elimination of All Forms of Discrimination against Women, 1979, Declaration on Elimination of Violence against Women, 1993

UNIT-II

Constitutional Safeguards for the Protection of Women: Right to equality, Right to life and personal liberty, Right against exploitation, Directive Principles of State Policy National Commission for Women-Composition, Powers and Functions

The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (with latest Amendments)

UNIT-III

The Dowry Prohibition Act, 1961 (With Latest Amendments)

Definition of Dowry, Penalty for giving, taking and demanding dowry, ban on advertisement, Dowry for the benefit of the wife or her heirs, Cognizance of offences, Dowry prohibition officers, Dowry Prohibition (Maintenance of Lists of Presents to the Bride and Bridegroom) Rules, 1985

The Protection of Women from Domestic Violence Act, 2005 (With Latest Amendments): Definition of Domestic Violence, Powers and duties of Protection Officers, Service Provider, etc., Procedure for obtaining orders of reliefs

UNIT-IV

The Pre-conception and Pre-natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 (With Latest Amendments): Preliminary regulation of genetic counseling centers, Genetic laboratories and genetic clinics, Regulation of pre-natal diagnostic techniques, Central Supervisory Board, Appropriate authority and Advisory Committee, Offences and Penalties

An Overview of Protection of Women under Immoral Traffic (Prevention) Act 1956 (With Latest Amendments)

LEADING CASES

1. Centre for Enquiry into Health and Allied Themes (CEHAT) and others v. Union of India and others, (2001) 5 SCC 2007
2. S.R. Batra v. Taruna Batra, AIR 2007 SC 1118
3. Air India v. Nargesh Mirza, AIR 1981 SC 1929
4. Vishakha v. State of Rajasthan, AIR 1997 SC 3011

SUGGESTED READINGS

1. Rajat Baijal: *Law of Protection of Women from Domestic Violence*, Bharat Law House, Jaipur, 2020
2. Mamta Rao: *Law Relating to Women and Children*, Eastern Book Co., Lucknow, 2019
3. N. K. Acharya: *Commentary on Protection of Women from Domestic Violence Act, 2005*, Asia Law House, Hyderabad, 2016
4. Nuzhat Parveen Khan: *Child Rights and the Law*, Universal Law Publishing Co Ltd., New Delhi, 2016
5. Nuzhat Parveen Khan: *Women and the Law*, Universal Law Publishing Co Ltd., New Delhi, 2016
6. S. K. Chatterjee: *Offences against Children & Juvenile Offence*, Central Law Publications Allahabad, 2016
7. Indira Jaising: *Sexual Harassment at Workplace*, Universal Law Publishing Co Ltd., New Delhi, 2015
8. S. C. Tripathi: *Women and Criminal Law*, Central Law Publications, Allahabad, (2014)
9. S. C. Tripathi: *Law Relating to Women & Children*, Central Law Publications, Allahabad, (2012)
10. S. C. Tripathi & Vibha Arora: *Law Relating to Women and Children*, Central Law Publications, Allahabad, (2012)
11. Suman Rai: *Law Relating to Protection of Women from Domestic Violence*, Orient Publishing Company, New Delhi, 2012

12. P. K. Majumdar: Law of Dowry Prohibition, Cruelty and Harassment, Orient Publishing Company, New Delhi, 2009
13. O. P. Mishra: *Law Relating to Women & Child*, Central Law Agency, Allahabad, 2001

Note: Students are advised to study the latest edition of the recommended books and case laws.

ENVIRONMENTAL LAWS
(SL LAW 03 06 29 C 4004)

Credits: 4

Objectives of the Course:

An introduction to the concepts and principles which underpin environmental law from the national to the international law. The course will address Constitutional law provisions relating to the environment; Sustainable development as a legal concept and related environmental protection principles, The remedies in statutory law and the protection of wildlife and forests.

Learning Outcomes:

After the completion of this Course, the student would be able to:

- Identify key environmental issues at the planetary, international, national, state and local level
- Develop an understanding of the regulatory and judicial frameworks implementing and enforcing these laws.
- Understand that environmental law cuts across and within legal systems, fields of law, vested interests and disciplinary boundaries
- Develop understanding of the overall environmental legal regime of the country as well as its international obligations.

Note:

1. The question paper shall consist of Five Questions in all. The first question shall contain short answer type questions from all the units, carrying 3.5 marks each and the student shall be required to attempt any four questions out of eight.
 2. Question no. 2, 3, 4 and 5, shall be long- answer type questions from all the units and students shall be required to attempt any two out of the given three choices under each question from the individual unit. Each long answer type question shall carry 14 Marks. The Examiner will be free to set the questions either in problem forms or based on case law.
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UNIT-I

Meaning and Definition of environment, environmental pollution, factors responsible for environmental pollution, Provisions of following general laws for protecting the environment in general:

1. Constitution of India
2. Indian Penal Code, 1860
3. Criminal Procedure Code, 1973
4. The Factories Act, 1948

Noise: Its definition, Sources and its Harmful effect, Remedies for noise pollution
The Environmental (Protection) Act, 1986 (With Latest Amendments)

UNIT-II

The Water (Prevention & Control of Pollution) Act, 1974 (With Latest Amendments)
The Air (Prevention & Control of Pollution) Act, 1981 (With Latest Amendments)

UNIT-III

Role of Public Interest Litigation in Protection of Environment, Role of Judiciary in the protection of Environment

The National Green Tribunal Act, 2010 (With Latest Amendments)

UNIT-IV

The Doctrine of Strict liability, Sustainable Development, Polluter pays principle, Public Interest Doctrine, The Doctrine of Absolute Liability

The Public Liability Insurance Act, 1991 (With Latest Amendments)

LEADING CASES

1. M.C. Mehta v. Union of India (The Gang Pollution Case), AIR 1988 SC 115
2. M.C. Mehta v. Union of India (SFFI case), AIR 1987 SC 965
3. Rural Litigation Kendra, Dehradun v. State of U.P., AIR 1987 SC 305
4. Ratlam Municipality v. Virdhi Chand & others, AIR 1980 SC 1622

SUGGESTED READINGS

1. M. R. Grag, V.K. Bansal & N. S. Tiwana: *Environmental Pollution and Protection*, Deep & Deep Publishers, New Delhi, 2016
2. Partha Pratim Mitra: *Wild Animal Protection Laws in India*, LexisNexis India, Gurugram, 2016
3. N. V. Pranjape: *Environmental Laws and Management in India*, Thomson Reuters, Delhi, 2015
4. Surendra Malik & Sudeep Malik: *Supreme Court on Environmental Law*, Eastern Book Company, Lucknow, 2015
5. P. Leelakrishnan: *Environmental Law Case Book*, LexisNexis India, Gurugram, 2010
6. P. Leelakrishnan: *Environmental Law in India*, LexisNexis India, Gurugram, 2010
7. Md. Zafar Mahfooz Nomani: *Environment Impact Assessment Laws*, Satyam Law International, New Delhi, 2010
8. Indrajit Dube: *Environmental Jurisprudence-Polluter's Liability*, LexisNexis India, Gurugram, 2007
9. Patricia W. Birnie & Alan E. Boyle: *International Law and the Environment*, Eastern Book Company, Lucknow, 2004
10. Md. Zafar Mahfooz Nomani: *Legal Control of Radiation Pollution*, Regency Publications, New Delhi, 2004
11. Md. Zafar Mahfooz Nomani: *Natural Resources Law and Policy*, Uppal Publishing House, New Delhi, 2004
12. Md. Zafar Mahfooz Nomani: *Right to Health: A Socio-Legal Perspective*, Uppal Publishing House, New Delhi, 2004
13. Armin Roseneranz: *Environment Law and Policy in India*, South Asia Books, New Delhi 2002
14. K. Thakur: *Environmental Protection, Law and Policy in India*, Eastern Book Company, Lucknow, 2002

Note: Students are advised to study the latest edition of the recommended books and case laws

CLINICAL COURSE- IV
PROFESSIONAL ETHICS AND PROFESSIONAL ACCOUNTABILITY
(SL LAW 03 06 30 C 1245)

Credits: 5

Objectives of the Course:

Ethics are an integral part of every profession. Every profession has certain peculiar codes of conduct and well-defined norms. Advocacy being a profession of immense social relevance, and its significant role in the justice delivery system makes it a unique profession in itself and therefore it is highly desired that this profession be carried on ethically. This Paper aims at appreciating the avowed duties of advocates as well as the Bar-Bench relation. Designed to be taught with the assistance of practitioners, it will impart the students their role and responsibilities as professionals.

Learning Outcomes:

After the completion of this Course, the student would be able to:

- Understand the historical evolution of the legal profession as well as the various codes of conduct and ethical norms for the advocates.
- Understand the contempt law in India and the classifications of contempt, the punishments and remedies etc.
- Acquaint students with general principles of accounting and about legal services authorities in India, conciliation and about settlement.

Note:

1. The question paper shall consist of Five Questions in all. The first question shall contain short answer type questions from all the units, carrying 3.5 marks each and the student shall be required to attempt any four questions out of eight.
 2. Question no. 2, 3, 4 and 5, shall be long- answer type questions from all the units and students shall be required to attempt any two out of the given three choices under each question from the individual unit. Each long answer type question shall carry 14 Marks. The Examiner will be free to set the questions either in problem forms or based on case law.
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UNIT-I

Nature of Legal Profession & Meaning of Professional Ethics, Historical Development of Legal Profession, Role of Lawyers in National Movement of Independence

UNIT-II

Advocate Act, 1961: Chapter V & VI (Section 34, 35-45), Bar Council of India Rules (Part VI & VII) Duties, Rights, Privileges of Advocates, 50 Selected Opinions of the Disciplinary Committees of Bar Councils

UNIT-III

Contempt of Courts Act, 1971: Constitutional Provisions regarding Power of Supreme Court, High Courts for their contempt, Bar Bench Relations

UNIT-IV

Legal Services Authorities Act, 1987: Preliminary, NLSA, SLSA, DLSA, Sub Divisional Legal Services Committee, Entitlement to legal services, Lok Adalat, Concept of Permanent Lok Adalat, Pre-Litigation, Conciliation and Settlement

LEADING CASES

1. Zahira Habidullah Sheikh v. State of Gujrat, AIR 2006 SC 1367
2. Rameshwar Prasad v. Union of India, AIR 2006 SC 980
3. Nirmaljit Kaur v. State of Punjab, AIR 2006 SC 605
4. Gurpal Singh v. State of Punjab, AIR 2005 SC 2785
5. S.R. Ramraj v. Special Court Bombay, AIR 2003 SC 3039
6. Supreme Court Bar Association v. Union of India, AIR 1998 SC 1895
7. Dr.D.C. Sexena v. Hon'ble Chief Justice of India, AIR 1996 SC 2481
8. M.B. Sanghi Adv. v. H.C. of Punjab & Haryana, AIR 1991 SC 1834

SUGGESTED READINGS

1. Dr. S.P. Gupta: *Professional Ethics, Accountancy for Lawyers and Bench-Bar Relations*, Central Law Agency, Lucknow, 2018
2. Dr. Kailash Rai: *Legal Ethics, Accountability for Lawyers and Bench-Bar Relations*, Central Law Publications, Allahabad, 2017
3. Yashomati Ghosh: *Legal Ethics and The Profession of Law*, Lexis Nexis, Gurugram, 2014
4. P. Ramantha Iyer: *Legal & Professional Ethics*, Lexis Nexis, Gurugram, 2010
5. Bare Act: *The Advocates Act, 1961*
6. Bare Act: *The contempt of Courts Act, 1971*
7. Bare Act: *The Legal Services Authorities Act, 1987*
8. Bare Act: *The Criminal Procedure Code, 1973*

Note: Students are advised to study the latest edition of the recommended books and case laws.

EQUITY, TRUST AND FIDUCIARY RELATIONS

(SL LAW 03 06 14 E 4004)

Credits: 4

Objectives of the Course:

This course is designed with the objectives; to provide the learner with a knowledge of the historical development of the law of equity and trusts; To develop within the learner an understanding of equitable doctrines and remedies; To provide the learner with an understanding of the concept of the trust, including its creation and the roles of trustees, and an understanding of the main kinds of trust; To provide the learner with an understanding of the practical operation of the law of equity and trusts.

Learning Outcomes:

- Demonstrate a clear understanding of the law of equity and trusts and how it applies to the legal system as a whole;
- Identify the different types of equitable remedies and trusts and when and in what context they can be relevant;
- Critically review the law of equity and trusts in a systematic manner.
- Critically analyse the theoretical and philosophical underpinnings of the law relating to equity and trusts.
- Demonstrate the capacity to research and present on issues of the law of equity and trusts.
- Critique the societal impact of the law of equity and trusts.

Note:

1. The question paper shall consist of Five Questions in all. The first question shall contain short answer type questions from all the units, carrying 3.5 marks each and the student shall be required to attempt any four questions out of eight.
 2. Question no. 2, 3, 4 and 5, shall be long- answer type questions from all the units and students shall be required to attempt any two out of the given three choices under each question from the individual unit. Each long answer type question shall carry 14 Marks. The Examiner will be free to set the questions either in problem forms or based on case law.
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UNIT-I

Concept of Equity: its nature, history and development in Roman Law and English Common Law, Equity Court and Common Law Courts in England, Equitable Rights, Remedies and Procedure, Classification of Jurisdictions of Equity Courts, Unification of Equity and Common Law Courts and the Provisions of the Judicature Acts of 1873-75

UNIT-II

Major maxims or principles of equity and their application: Equity will not suffer a wrong to be without a remedy, Equity follows the Law, He who seeks equity must do equity, He who comes into equity must come with clean hands, Delay defeats equity, Equality is equity, Equity looks to the intent rather than the form, Equity looks on that as done which ought to be done, Equity inputs and intention to fulfill an obligation, Where there is equal equity, the law shall prevail, Where equities are equal, the first in time shall prevail, Equity acts in personam

UNIT-III

The Indian Trusts Act, 1882 (With Latest Amendments): Historical Background, Classification or kinds of Trusts, Creation of Trusts, Trustees-their duties and liabilities; Trustees-their rights and powers, Trustees and their disabilities under the Indian Trusts Act

UNIT-IV

Beneficiaries-their rights and liabilities, Appointment and Discharge of Trustees, Extinction of Trust, Obligations in the nature of Trusts and Fiduciary relations, Concept of Equity and its relevance and Application in Indian Legal System

LEADING CASES

1. Official Trustee, W.B. & Others v. Sachindra Nath Chatterjee & Others, (1969) 3 SCR-92
2. Surajmal Singh v. State of Rajasthan, 1966 RLW566
3. Tilakayat Shri govindlalji v. state of Rajasthan, AIR 1963 SC 1630
4. Allahabad Bank Ltd. v. The Commissioner of Income Tax, W.B., AIR 1953 SC 476
5. Hindu Religious Endowments, Madras v. Shri Lakshmindar Thiraths Swamiar of Shri Shirur Mutt, 1954 ASC 282
6. Durgah Committee, Ajmer v. Syed Hyussain Ali, AI 1861 SC 1403

SUGGESTED READINGS

1. S.R. Myneni: *Equity, Trusts and Fiduciary Relations*, Asia Law House, Hyderabad, 2020
2. G.P. Singh: *Principles of Equity*, Central Law Publications, Allahabad, 2019
3. B.M. Gandhi: *Equity, Trusts and Specific Relief*, Eastern Book Company, Lucknow, 2018
4. S.C. Tripathi: *Equity, Mortgages, Trusts and Fiduciary Relations*, Central Law Publications, Allahabad, 2017
5. M.P. Tendon: *Principles of Equity and Trusts*, Allahabad Law Agency, Faridabad, 2014
6. Aquil Ahmad: *Equity, Trusts and Specific Relief*, Central Law Publications, Allahabad, 1965

Note: Students are advised to study the latest edition of the recommended books and case laws.

DISASTER MANAGEMENT IN INDIA

(SL LAW 03 06 15 E 4004)

Credits: 4

Objectives of the Course:

The course is intended to provide a general insight in the dimensions of disasters caused by nature beyond the human control as well as the disasters and environmental hazards induced by human developmental activities

Learning Outcomes:

- Develop understanding of disasters and its relationships with development.
- To gain understand approaches of Disaster Risk Reduction (DRR) and the relationship between vulnerability, disasters, disaster prevention and risk reduction.
- Understanding Medical and Psycho-Social Response to Disasters.
- Help in prevent and control Public Health consequences of Disasters.
- To enhance awareness of Disaster Risk Management institutional processes in India.
- build skills to respond to disasters.

Note:

1. The question paper shall consist of Five Questions in all. The first question shall contain short answer type questions from all the units, carrying 3.5 marks each and the student shall be required to attempt any four questions out of eight.
 2. Question no. 2, 3, 4 and 5, shall be long- answer type questions from all the units and students shall be required to attempt any two out of the given three choices under each question from the individual unit. Each long answer type question shall carry 14 Marks. The Examiner will be free to set the questions either in problem forms or based on case law.
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UNIT-I

Definition and Concept of Hazard, Risk, Vulnerability and Disaster

Disaster Management: Meaning, Concepts, Approaches, Principles, Objectives and Scope, Essentials of Disaster Management; Institutional and Individual's responsibilities during risk reduction, preparedness, response and recovery phases

UNIT-II

Types and Classifications of Disasters, Natural Disasters: Earthquakes, Floods Cyclones and Cloud burst. Avalanches, Forest Fire and Tsunami

Human-Induced Disasters: Nuclear, Chemical and Industrial Disasters Global warming, Biological Disasters, Epidemics

UNIT-III

Disaster Management in India, before and After DM Act, 2005

Salient Features of Disaster Management Act 2005 (With Latest Amendments)

UNIT-IV

National Level Nodal Agencies, National Disaster Management Authority, State Authorities, District Authorities, Local-level authorities Role of NGOs, Corporate Sector, Army and Police, and Educational Institutions in Disaster Management

SUGGESTED READINGS

1. S. Arulsamy & J.JEYADEVI, *Disaster Management*, Neelkamal, 2016
2. Coppola, D.P.: *Introduction to International Disaster Management*, 3rd Edition. UK, Butterworth-Heinemann/Elsevier, 2015
3. Mrinalini Pandey, *Disaster Management*, Wiley, 2014
4. Gosh, G.K.: *Disaster Management*, A.P.H. Publishing Corporation, New Delhi, 2012
5. Shastri, K.N: *Disaster Management in India*, Pinnacle Technology, 2012
6. Ahmad, A.: *Disaster Management: Through the New Millennium*, Anmol Publications, New Delhi, 2010
7. R. K. Singh & Kumari Swarnim, *Nuclear Weapons, Global Warming and Disaster Management*, Rajat Publications, 2010
8. Hyndman, D. and D. Hyndman: *Natural Hazards and Disasters USA*, Belmont: Brooks/Cole, 2009
9. Chakraborty, S.C.: *Natural Hazards and Disaster Management*, Pragatishil Prokashak, Kolkata, 2007
10. Goel, S.L.: *Encyclopaedia of Disaster Management*, Deep and Deep Publications, New Delhi, 2006
11. Kapur, A.: *Disasters in India: Studies of Grim Reality*, Rawat Publications, Jaipur, 2005
12. B.K. Khanna: *Disasters: All You Wanted to Know About*, New India Publishing Agency, New Delhi, 2005
13. Bryant Edwards: *Natural Hazards*, Cambridge University Press, U.K, 2005
14. Dr. Satendra: *Disaster Management in the Hills*, Concept Publishing House, New Delhi, 2003
15. Gupta, H.K.: *Disaster Management*, Universities Press (India) Private Limited, Hyderabad, 2003
16. Harsh K. Gupta: *Disaster management*, Universities Press, 2003
17. Paraswamam, S. and Umikrishnan, P.V.: *India Disaster Report*, Oxford University Press, New Delhi, 2000
18. Singh, R.B: *Disaster Management*, Rawat Publications, Jaipur, 2000

Note: Students are advised to Study the Latest Edition of the Recommended Books.

Course - Sustainable & Green Management Practices in Hotel Industry

Credits-4

Course Code- SLLCH THM 01 02 01 GEC 4004

Objective:-

The course aimed at familiarizing students with the need of sustainable and green management practices in hotel industry such as water & energy and waste management, with its benefits to hotels and environment.

Content

UNIT-1

Introduction to Ecology & Ecosystem in Hotel Industry

- 1.1. Concept of ecology, environment, ecosystem and their relation with hospitality.
- 1.2. Sustainability and conservation of scarce resources.
- 1.3. Environment policy-meaning, aims and importance, legislation relating with environment and ecology such as air, water, noise pollution control act.
- 1.4. Guidelines of department of tourism, ministry tourism, government of India.

UNIT-2

Resource Conservation & Management

- 2.1 Introduction & concept of eco-friendly practices in hotels.
- 2.2 Energy
- 2.3 Water
- 2.4 Land - Green Building

UNIT-3

Waste Management

- 3.1 Reduction & recycling of waste.
- 3.2 Water
- 3.3 Sewage
- 3.4 Solid waste

UNIT-4

Changing Trends in Hospitality

- 4.1 Introduction to Ecotels and their certification.
- 4.2 Choosing an eco-friendly site, hotel design and construction.
- 4.3 Eco-friendly practices in hotels: amenities, product & processes.
- 4.4 Relevance and use of technology in Ecotels.

Suggested Readings:-

- David Kirk, Environment Management for Hotels: A students Handbook,2000
- Dr. Jag Mohan Negi, Managing Hotels and Restaurant, 2002
- Rich Board Hurst, Managing Environment for Leisure and Recreation, 1995
- Blackwell, The Human Impact on the Natural Environment, Oxford, 2002
- Yogendra K. Sharma, Hotel Management “Educational and Environment Aspects,2004
- Martin N. Kunz, Best Designed Ecological Hotels- Environment Management in the Hospitality, 2007

UNDERSTANDING TOURISM ETHICS

Course Code -SLLCH THM 02 01 02 DCEC 4004

Credit: 4

Unit-1

- 1.1 The nature of Business Ethics.
- 1.2 Moral versus non moral standards. Ethics and law.
- 1.3 Ethics and religion. Ethical relativism.
- 1.4 Ethical issues in tourism business. Social responsibility of tourism business.

Unit-2

- 2.1 Ethical Theories and principles. Consequentialist and non- consequentialist theories of Ethics, Egoism, Utilitarianism
- 2.2 Kants Ethics, Rights and duties.
- 2.3 Justice and fairness.
- 2.4 The Ethics of care, Virtue Ethics, Implications for Tourism industry.

Unit-3

- 3.1 Tourism Legislation, Sources of Tourism Law
- 3.2 The Indian Scenario Laws related to Ancient Monuments The Ancient Monuments Act .
- 3.3 Regulations made by the Archaeological Survey of India
- 3.4 Guidelines issued by the Ministry of Culture, Legislation for hospitality and catering

Unit-4

- 4.1 Regulatory Laws for Tourism Business in India:
- 4.2 Inbound and outbound travel. Transport industry and Airlines.
- 4.3 Accommodation and Hotel Industry, Foreign Exchange Regulation Act.
- 4.4 Tourist related Laws: Citizenship, Passport, Visa, Foreigners, Foreigners Registration, Customs Acts

Suggested Readings:-

- David A. Fennell.(2006). Tourism Ethics.USA. Kindle Publishing House.
- Glen Cohen. (2014).Patients with Passports: Medical Tourism Law and Ethics. USA. Oxford University Press.
- Gupta S.K. (1989). Foreign Exchange Laws and Practice. New Delhi. Taxman Publications
- Malik.S.S . (1997). Ethical Legal & Regulatory Aspects of Tourism Business. New Delhi. Rahul Publishing House.
- Manuel G. Velasquez. (2011) Business Ethics Concepts and Cases. New Delhi. Phi Learning Pvt Ltd.
- Shrivastava. (2010). Tourism ethics. New Delhi. Centrum Press.



SUSTAINABLE TOURISM

Course Code - SLLCH THM 02 03 02 DCEC 4004

Credit: 4

Unit - 1

- 1.1 Sustainable Tourism & its Dimensions: Historical Background,
- 1.2 Nature and Scope of Sustainable Tourism, Critiques of Current Thinking in Sustainable Management,
- 1.3 New Approaches to Sustainable Tourism Management, Sustainable Tourism three Dimensions,
- 1.4 Environmental Dimension, Economic Dimension, Social Dimension

Unit - 2

- 2.1 Role of different agencies in Sustainable Tourism: Public Sector,
- 2.2 Tourism Industry, Voluntary Sector, Host Community, Media, Tourist In Coastal Areas and Sea,
- 2.3 Rural Area, Urban Areas, Mountainous Regions, Islands, Developing Countries.
- 2.4 Role of Marketing in promotion of sustainable Tourism

Unit -3

- 3.1 Sustainable Tourism & Responsible Tourism: Sustainable Tourism Development-Guiding Principles for Planning and Management,.
- 3.2 Responsible Tourism, Key Characteristics of Responsible Tourism,
- 3.3 Empowering Community through Tourism
- 3.4 Community based Tourism and Global Climate change-issues and challenges

Unit -4

- 4.1 Sustainable Tourism Infrastructure and instruments for more sustainable Tourism: Tourist Destinations,
- 4.2 Visitor Attractions, Tour Operations, Transport, Hospitality, Cultural, Tourism, Eco-tourism, Business Tourism
- 4.3 Future of Sustainable Tourism, sustainable tourism instruments-measurement,
- 4.4 command and control, economic, voluntary and supporting instruments



Suggested Readings:

- Baker, S. (2006). Sustainable Development. London and New York. Routledge.
- Crouch, D.I. J.R. Ritchie, B.&Kossatz, H.G. (2003). Competitive Destination: A Sustainable Tourism Perspective. USA. CABI Publishing,
- Goodwin, H. (2011). Taking responsibility for tourism. Oxford. Goodfellow Publishers Ltd.
- Holden, A. (2000) Environment and tourism. London & New York. Routledge.
- Inskip, E. (1991). Tourism Planning: An Integrated and Sustainable Development Approach. Van Nostrand Reinhold, New York.
- Miller, G. And Twinin-Ward, L. (2005). Monitoring for a sustainable tourism transition.
- Page, S.J. and Connell, J. (2006). Tourism a modern synthesis. Second edition. London: Strange,
- Swarbrooke, J. (2005). Sustainable Tourism Management. Cambridge. CABI Publishing.
- T. and Bayley, A. (2008). Sustainable Development. Linking Economy Society, Environment. Paris. OECD.
- The challenge of developing and using indicators. Cambridge: CABI Publishing.
- Thomson. Weaver, D. (2006). Sustainable tourism. Oxford. Elsevier.
- Zeppe, H.D. (2006). Indigenous Ecotourism: Sustainable Development and Management. Australia. CABI



(Economics)
Master of Arts (Economics) Semester: III

Paper Nomenclature: **Environmental Economics**

Course Code: **SAHS ECO 01 305 DCEC 3104**

(Credit: 4)

Objective: *The objective of this course is to enrich the knowledge of the students with concepts and theories of environmental economics.*

Unit-I

Conceptual background of environmental economics; review of microeconomics and welfare economics; Distinction between environmental economics and natural resource economics.

Unit-II

Relation between development and environmental stress; Environmental Kuznet's curve hypothesis – theory and empirical evidence; concept of sustainable development; indicators of sustainability; various approaches to environmental accounting. Sustainable development: Concepts; measurement

Unit-III

Issues of Environmental economics: Pareto optimality and market failure in the presence of externalities. Market failure; Pigouvian solution; Buchanan's theory; Coase's theorem and its critique; Pigouvian vs Coasian solution; Subsidies for Abatement of pollution-The case in the short and long run; choice between taxes and quotas under uncertainty; implementation of environmental policy.

Unit-IV

Trans-boundary environmental problems; economics of climate change; trade and environment.

Recommended Readings:

1. Robert N. Stavins, (2005), '*Economics of the Environment: Selected Readings*', 5th edition, W.W. Norton Publisher.
2. Maureen L. Cropper and Wallace E. Oates, (1992), '*Environmental Economics: A Survey*', Journal of Economic Literature, Vol 30, pp. 675-740.
3. Hanley, N., J.F. Shogren, and B. White, (2006), '*Environmental Economics: In Theory and Practice*', Oxford University Press.
4. Kolstad, C., (2000), '*Environmental Economics*', Oxford University Press.
5. Bhattacharya, R.N. (2001), '*Environmental Economics – An Indian Perspective*', Oxford University Press.
6. Singh, K. and A. Shishodia, (2007), '*Environmental Economics: Theory and Applications*', Sage Publications.

CORPORATE GOVERNANCE AND SOCIAL RESPONSIBILITY

COURSE CODE- SLM COM 1 4 13 C 4105

CREDIT: 4

Objectives: *To familiarize the students with the understanding of issues and practices of corporate governance in the global and Indian context.*

Course Contents:

UNIT I

Conceptual Framework Of Corporate Governance: Evolution of corporate governance; developments in India; regulatory framework of corporate governance in India; SEBI guidelines and clause 49; reforms in the Companies Act; secretarial audit; class action; NCLT; insider trading; rating agencies; green governance/e-governance; shareholders' activism; corporate governance in PSUs and banks.

UNIT II

Corporate Management: Management vs. Governance; internal constituents of the corporate governance; key managerial personnel (KMP); chairman- qualities of a chairman, powers, responsibilities and duties of a chairman; chief executive officer (CEO), role and responsibilities of the CEO; separation of roles of chairman and CEO; CFO; manager; company secretary; auditor.

UNIT III

Whistle blowing and Corporate Governance: The Concept of Whistle-Blowing; Types of Whistle-blowers; Whistle-blower Policy; the Whistle-Blower Legislation across Countries; developments in India.

UNIT IV

Corporate Social Responsibility (CSR): Meaning; corporate philanthropy; CSR-an overlapping concept; corporate sustainability reporting; CSR through triple bottom line; CSR and business ethics; CSR and corporate governance; environmental aspect of CSR; CSR models; drivers of CSR; global reporting initiatives; major codes on CSR; initiatives in India.

Suggested Readings

1. Adrian Cadbury, *Corporate Governance and chairmanship: A personal View*, Oxford University Press, UK.
2. Mallin, Christine A., *Corporate Governance (Indian Edition)*, Oxford University Press.
3. Blowfield, Michael, and Alan Murray, *Corporate Responsibility*, Oxford University Press.
4. Francesco Perrini, Stefano, and Antonio Tencati, *Developing Corporate Social Responsibility-A European Perspective*, Edward Elgar.
5. Geeta D. Rani, and R.K. Mishra, *Corporate Governance-Theory and Practice*, Excel Books, New Delhi.
6. Anil Kumar, *Corporate Governance: Theory and Practice*, International Book House, New Delhi.
7. K.V. Bhanumurthy, and Usha Krishna, *Politics, Ethics and Social Responsibility of Business*, Pearson Education.
8. Erik Banks, *Corporate Governance: Financial Responsibility, Controls and Ethics*, Palgrave Macmillan.

9. N. Balasubramanian, *A Casebook on Corporate Governance and Stewardship*, McGraw Hill Education (India) Private Limited

10. Bob Tricker, *Corporate Governance-Principles, Policies, and Practice* (Indian Edition), Oxford University Press.

Note: Latest edition of the readings may be used.**Note: The list of cases, references and relevant articles will be provided by the faculty in the class.**

UNIT-1**Introduction to Environmental Science and Natural Resources**

The multidisciplinary nature of Environmental Studies. Definition, scope and importance, need for public awareness

Renewable and non-renewable resources: Land resources: Land as a resource, land degradation, soil erosion and desertification. Forest resources: Use and over-exploitation, deforestation, case studies. Water resources: Use and over-utilization of surface and ground water

UNIT-2**Ecosystems, Biodiversity and its Conservation**

Concept of an ecosystem. Structure and function of an ecosystem. Energy flow in the ecosystem. Food chains, food webs and ecological pyramids.

Definition: genetic, species and ecosystem diversity. Bio-geographical classification of India. Hot-spots of biodiversity. Threats to biodiversity. Endangered and endemic species of India. Conservation of biodiversity.

UNIT-3**Environmental Pollution, Environment policies & laws**

Definition, Causes, effects and control measures of: (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Nuclear hazards. Solid waste management. Pollution case studies.

Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and Control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness.

UNIT-4**Human Population and Environment and Fieldwork**

Human population growth. Impacts on environment, human health and welfare. Environmental Movements: Chipko, silent valley, Bishnois of Rajasthan.

Visit to a local area to document environmental assets—river/forest/grassland/hill/ mountain. Visit to a local polluted site—Urban/Rural/Industrial/Agricultural. Study of common plants, insects, birds. Study of simple ecosystems—pond, river, hill slopes, etc.

Text Books and Reference books:

1. Cunningham, W.P. and Saigo, B.W., Environmental Science. W.M.C. Brown Publishers, New York, USA.
2. Enger, D.E. and Smith B.F., Environment Science—A Study of Interrelationships. W.M.C. Brown Publishers, New York, USA.
3. Gupta, P.K., Elements of Biotechnology, Rastogi Publications, Meerut.

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4. Negi, B.S., Geography of Resources, Kedar Nath Ram Nath, Meerut.
5. Odum, E.P., Fundamentals of Ecology, Natraj Publishers, Dehradun.
6. Kaushik A and Kaushik C P. Perspectives in Environmental Studies, New age International Publishers, New Delhi.
7. Rastogi, V.B., Environmental Biology and Biochemistry, Kedar Nath Ram Nath, Meerut and Delhi.

Singh

M. K. Singh

R. K. Singh

Eakta

Rajendra

Course Code: BT CS 833	Course Name: Professional Ethics and IPR			L	T	P	C
				3	0	-	3
Year and Semester	4 th year 8 th Semester	Contact hours per week: (3 Hrs.) Exam: (3hrs.)					
Pre-requisite of course	Nil	Evaluation					
		CIE: 30			TEE: 70		
Course Objectives:							
1. To provide basic knowledge about engineering Ethics, Variety of moral issues and Moral dilemmas, Professional Ideals and Virtues							
2. To provide basic familiarity about Engineers as responsible Experimenters, Research Ethics, Codes of Ethics, Industrial Standards, Exposure to Safety and Risk, Risk Benefit Analysis							
3. To have an idea about the Collegiality and Loyalty, Collective Bargaining, Confidentiality, Occupational Crime, Professional, Employee, Intellectual Property Rights.							
4. To have an adequate knowledge about MNC's, Business, Environmental, Computer Ethics, Honesty, Moral Leadership, sample Code of Conduct.							
Course Outcomes: On completion of the course, student would be able to:							
CO833.1	Identify and analyze an ethical issue in the subject matter under investigation or in a relevant field						
CO833.2	Identify the multiple ethical interests at stake in a real-world situation or practice						
CO833.3	Articulate what makes a particular course of action ethically defensible						
CO833.4	Assess their own ethical values and the social context of problems						
CO833.5	Identify ethical concerns in research and intellectual contexts, including academic integrity, use and citation of sources, the objective presentation of data, and the treatment of human						

Module No	COURSE SYLLABUS CONTENTS OF MODULE	Hrs	COs
1	Values: Concept, Types, Rokeach Value Survey Different Kinds of Values: Individual, Societal, Material, Psychological, Cultural, Moral and Ethical, Spiritual; The Burgeoning Crises at Each of these levels. Modern Approach to the Study of the Values: Analyzing Individual Human Values such as Creativity, Freedom, Wisdom and Love; Value Spectrum for a Good Life; The Indian Concept of Values, Comparison of Eastern and Western concept of values.	10	CO833.1, CO833.2
2	Ethics: Values, Morals and Ethics; Need for Ethics in Professional Life; Kohlberg's Theory of Moral Development and its Applicability to Engineers. Professional Ethics: Values in Work Life; Professional Ethics and Ethos; Codes of Conduct, Whistle-Blowing, Corporate Social Responsibility, Case Studies on Ethics in Business.	12	CO833.3, CO833.4
3	Introduction to IPR: Nature and Enforcement, International Character of IPRs, Role of IPRs in Economic Development.	12	CO833.4

	<p>Patents: Introduction to Patents, Object of Patent Law, Inventions not Patentable, Obtaining Patents, Rights and Obligations of a Patentee.</p> <p>Copyrights: Introduction to Copyrights, Subject-Matters of Copyright, Rights Conferred by Copyright, Infringement, Assignment and Licensing of Copyrights, Copyright Societies, International Copyright, Performer's Rights.</p>		
4	<p>Trademarks: Functions, Significance and types of Trademarks, Distinctiveness and Deceptive Similarity, Registration Procedure, Trademark Registry, Grounds for Refusal of Registration of Trademarks, Concurrent Use, Character Merchandising.</p> <p>Trade Secrets: Meaning, Types of Trade Secrets, Statutory Position of Trade Secrets in India, Proofs Required in Trade Secret Litigation Case.</p>	14	CO833.5

Text Books:

1. Durkheim, E., 2013. *Professional Ethics and Civic Morals*. Routledge.
2. Fleddermann, C.B., 1999. *Engineering Ethics*. Upper Saddle River, NJ: Prentice Hall.
3. Friedman, B. and Kahn Jr, P.H., 2007. Human Values, Ethics, and Design. In *The human-computer interaction handbook* (pp. 1267-1292). CRC press.
4. Govindarajan, M., Natarajan, S. and Senthilkumar, V.S., 2009. *Engineering Ethics Includes Human Values*. Prentice-Hall of India Private Limited.
5. Harris Jr, C.E., Pritchard, M.S., Rabins, M.J., James, R. and Englehardt, E., 2013. *Engineering Ethics: Concepts and Cases*. Cengage Learning.
6. Naagarazan, R.S., 2007. *A Textbook on Professional Ethics and Human Values*. New Age International.
7. Piccolo, F. L. (2016). *Ethics and planning research*. Routledge.
8. Whitbeck, C., 2011. *Ethics in Engineering Practice and Research*. Cambridge University Press.

Total Credit: 0
Max. Marks: 100
Theory: 70
Internal: 30
Time Allowed: 3Hrs

UNIT – I

The Multidisciplinary nature of environmental studies, Definition, scope and importance.

Natural Resources:

Renewable and non-renewable resources:

Natural resources and associated problems.

a) Forest resources: Use and over-exploitation: deforestation, case studies, Timber exploitation, mining, dams and their effects and forests tribal people.

b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources: World food problems, changes, caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources; case studies.

f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources.

Equitable use of resources for sustainable lifestyles.

UNIT- II

Ecosystems:

Concept of an ecosystem.

Structure and function of an ecosystem.

Producers, consumers and decomposers.

Energy flow in the ecosystem.

Ecological succession.

Food chains, food webs and ecological pyramids.

Introduction, types, characteristic features, structure and function of the following eco-system:

a) Forest ecosystem.

- b) Grassland ecosystem.
- c) Desert ecosystem.
- d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

UNIT- III Biodiversity and its conservations:

Introduction – Definition: Genetic, species and ecosystem diversity.

Biogeographically classification of India.

Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.

Biodiversity at global, National and local levels.

India as a mega-diversity nation.

Hot-spots of biodiversity.

Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.

Endangered and endemic species of India.

UNIT – IV Environmental Pollution:

Definition, causes, effects and control, measures of:

- a) Air pollution
- b) Water pollution
- c) Soil pollution
- d) Marine pollution
- e) Noise pollution
- f) Thermal Pollution
- g) Nuclear hazards

Solid waste management: Causes effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Pollution case studies.

Disaster management: Floods, earthquake, cyclone and landslides.

Social issues and the Environment:

- a) From unsustainable to sustainable development
- b) Urban problems related to energy
- c) Water conservation, rain water harvesting, watershed management
- d) Resettlement and rehabilitation of people; its problems and concerns, case studies
- e) Environmental ethics: Issues and possible solutions
- f) Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case studies
- g) Wasteland reclamation
- h) Consumerism and waste products

Text Books:

1. Bharucha, Franch, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380013, India.
2. Brunner R.C. 1989, Hazardous Waste Incineration, Mc. Graw Hill Inc. 480pp.
3. Clark R.S., Marine Pollution, Slanderson Press Oxford (TB).
4. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental
5. Encyclopedia, Jaico Pub. House, Mumbai. 1195p.
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd. Down to Earth, Centre for Science and Environment ®.

Reference Books:

1. Gleick, H.P., 1993. Water in Crisis, Pacific Institute for Studies in Dev., Environment & Security, Stockholm Env. Institute, Oxford Univ., Press 473p.
2. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society,
3. Bombay (R).
4. Heywood, V.H. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press
5. 1140p.
6. Jadhav, H & Bhosale, V.M. 1995, Environmental Protection and Laws, Himalaya Pub. House,
7. Helhi 284p.
8. Mckinney, M.L. & Schoch, RM 1996, Environmental Sciences Systems & Solutions, Web
9. enhanced Edition 639p



MTESM-101

ENERGY CONSERVATION AND MANAGEMENT

Semester - I

L T P Credits

3 1 0 4

Class works Marks: 30

Exam Marks: 70

Total Marks: 100

Duration of Examination: 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. Understand the concept of energy scenario
2. Understand the theory of tariff and thermal management in electrical system.
3. Understand the basic concepts of energy audit & management.
4. Analyze energy saving opportunities.

UNIT I

Energy scenario:

Commercial and Non-commercial energy, primary energy resources, commercial energy production, final energy consumption, energy needs of growing economy, long term energy scenario, energy pricing, energy sector reforms, energy and environment, energy security, energy conservation and its importance, restructuring of the energy supply sector, energy strategy for the future, air pollution, climate change. Energy Conservation Act-2001 and its features.

UNIT II

Basics of Energy and its various forms:

Electricity tariff, load management and maximum demand control, power factor improvement, selection & location of capacitors, Thermal Basics-fuels, thermal energy contents of fuel, temperature & pressure, heat capacity, sensible and latent heat, evaporation, condensation, steam, moist air and humidity & heat transfer, units and conversion.

UNIT III

Energy Management & Audit:

Definition, energy audit, need, types of energy audit. Energy management (audit) approach understanding energy costs, bench marking, energy performance, matching energy use to requirement, maximizing system efficiencies, optimizing the input energy requirements, fuel & energy substitution, energy audit instruments.

UNIT IV

Energy Efficiency in Electrical Systems:

Electrical system: Electricity billing, electrical load management and maximum demand control, power factor improvement and its benefit, selection and location of capacitors, performance assessment of PF capacitors, distribution and transformer losses. Electric motors: Types, losses in induction motors, motor efficiency, factors affecting motor performance, rewinding and motor replacement issues, energy saving opportunities with energy efficient motors.



UNIT V

Energy Efficiency in Industrial Systems:

Pumps and Pumping System: Types, performance evaluation, efficient system operation, flow control strategies and energy conservation opportunities. Cooling Tower: Types and performance evaluation, efficient system operation, flow control strategies and energy saving opportunities, assessment of cooling towers.

UNIT VI

Energy Efficient Technologies in Electrical Systems:

Maximum demand controllers, automatic power factor controllers, energy efficient motors, soft starters with energy saver, variable speed drives, energy efficient transformers, electronic ballast, occupancy sensors, energy efficient lighting controls, energy saving potential of each technology.

TEXT BOOKS:

1. "Optimizing Energy Efficiencies in Industry", G. G. Rajan, Tata McGraw Hill.
2. Energy Auditing and Conservation; Methods, Measurements, Management and Case Study", Hemisphere Publishers.
3. "Industrial Energy Conservation", Charles M. Gottschalk, John Wiley and Sons.

REFERENCE BOOKS:

1. "Utilization of Electrical Energy and Conservation", S. C. Tripathy, McGraw Hill, 1991.
2. "Success stories of Energy Conservation by BEE", New Delhi (www.bee-india.org).
3. "Guide books for National Certification Examination for Energy Manager / Energy Auditors Book-1", General Aspects (available online)
4. "Guide books for National Certification Examination for Energy Manager / Energy Auditors Book-3", Electrical Utilities (available online).

**MTEMS-102****INTRODUCTION TO RENEWABLE ENERGY SYSTEMS****Semester - I****L T P Credits**
3 1 0 4**Class works Marks: 30****Exam Marks: 70****Total Marks: 100****Duration of Examination: 3 Hrs****Course Outcomes:**

At the end of this course students will demonstrate the ability to

1. To provide knowledge of solar energy concept and applications.
2. To impart knowledge of geothermal, ocean and tidal energy and their applications.
3. To understand the design of wind mills and applications.
4. To understand the turbines and generators for small scale hydroelectric generation.
5. To understand the important parts of a biogas plant, design and principle of bio-diesel.

UNIT I

Need of sources of renewable energy: Introduction to different sources of renewable energy, e.g., Solar Energy, Wind Energy, Bio-mass, Geothermal Energy, Ocean energy, Solar Energy and Applications.

Basic concepts of radiations: Solar radiation, Direct and Indirect radiation, Radiation measuring instrument, applications etc.

Solar Energy: Basics of solar thermal applications both low and high temperature ranges such as water heating, air heating, steam generation, desalination of water, crop drying and power generation, Principle of photovoltaics including introduction to various components of a photovoltaic systems for standalone/hybrid/grid connected systems

UNIT II

Wind Energy: Wind Resource assessment including instrumentation used in resource assessment, basic theory of wind, wind power generators both for decentralized applications and grid connected systems, performance characteristics, Augmentation of wind power, Betz criteria

Bioenergy: Types and availability of biomass resources, various methods of biomass utilisation for energy generation: gasification, briquette, palatization, syn-gas, Anaerobic/Aerobic digestion, ethanol and biodiesel production, types of Bio-gas digesters, Combustion characteristics of biogas and its different utilizations,

UNIT III

Geothermal Energy: availability and methods of utilisation of geothermal resource for thermal applications and electricity generation

Hydro Energy: Basic principle of hydroelectric power generation, classification of hydropower projects (pico, micro, mini, small hydro sand large hydro projects), types of hydro turbine, various components of hydropower projects.

Ocean Energy: Principles utilization, thermodynamic cycles, tidal and wave energy, potential and conversion technique, Principle of ocean thermal energy conversion system.

UNIT IV

Fuel Cells and Hydrogen Energy: Introduction, principle of fuel cells, thermodynamic analysis of fuel cells, types of fuel cells, fuel cell batteries, applications of fuel cells. Hydrogen as a renewable energy source, sources of hydrogen, fuel for vehicles, hydrogen



production- direct electrolysis of water, thermal decomposition of water, biological and biochemical methods of hydrogen production.

Text/References:

1. Duffie, J. A., & Beckman, W. A. (2013). Solar engineering of thermal processes, fourth edition, Wiley.
2. Tiwari, G. N., & Ghosal, M. K. (2007). Fundamentals of renewable energy sources. Alpha Science International Limited.
3. Mukherjee, D., & Chakrabarti, S. (2004). Fundamentals of renewable energy systems. New Age International.
4. Sukhatme, S. P. (2005). Solar Energy Principles of Thermal Collection and storage Tata McGraw Hill Publishing Company Ltd. New Delhi.
5. Kothari, D. P., Singal, K. C., & Ranjan, R. (2011). Renewable energy sources and emerging technologies. PHI Learning Pvt. Ltd.



MTEMS-103 ENERGY STORAGE SYSTEMS FOR ELECTRIC VEHICLES

Semester - I

L T P Credits
3 1 0 4

Class-work Marks: 40

Exam Marks: 60

Total Marks : 100

Duration of Examination: 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. To provide knowledge of energy storage system concept and applications.
2. To understand the design of Electric Vehicles and applications.
3. To impart knowledge of Hybrid Electric Vehicles and different batteries and their applications

Unit 1

Introduction of Energy Storage Systems and Vehicle Dynamics

General background on alternative energy sources and sustainability, Introduction to electric-based transportation, Overview of Land-Marine-Space vehicle electrification, Description of vehicle dynamics and dynamic equations, Vehicle performance, and fuel economy characteristics, Basic concept of regenerative braking energy

Unit 2

Electric Vehicles

Electric vehicles configuration Energy and power requirements for various HEVs and EVs Vehicle performance and driving cycles

Unit 3

Hybrid Electric Vehicles

Fundamentals of hybrid electric vehicles Series hybrid electric vehicles Parallel hybrid electric vehicles Start – stop hybrids, Mild hybrids, strong and full hybrids, Extended range hybrid vehicles, and full electric vehicles (BEV)

Unit 4

Energy Storage Systems Batteries

Supercapacitors, Fuel Cells and Hydrogen Storage, Battery Recycling Technologies, Battery Applications for Stationary and Secondary Use, Battery Chargers and Battery Testing Procedures, Battery Management Systems (BMS), Battery Thermal Management, Regulations and Safety Aspects of High Voltage Batteries.

References:

1. Iqbal Hussein, Electric and Hybrid Vehicles: Design Fundamentals, CRC Press, 2003.
2. Mehrdad Ehsani, Yimi Gao, Sebastian E. Gay, Ali Emadi, Modern Electric, Hybrid Electric and Fuel Cell Vehicles: Fundamentals, Theory and Design, CRC Press, 2004.
3. James Larminie, John Lowry, Electric Vehicle Technology Explained, Wiley, 2003.
4. Huggins R. A., Energy Storage: Fundamentals, Materials and Applications. Springer ,2015.



5. O'Hayre R., Cha S., Colella W., and Prinz F. B., Fuel Cell Fundamentals, Second Edition, Wiley, 2009.

MTESM-104 BIO FUELS AND BIO ENERGY

Semester - I

L T P Credits

3 1 0 4

Class works Marks: 30

Exam Marks: 70

Total Marks: 100

Duration of Examination: 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

To enable students to acquire knowledge on cutting-edge technologies for conversion of various biomass feedstock to bioenergy / biofuel production and their utilization in combustion engines / devices and fuel cells. On successful completion of the course, the students would be able to contribute towards providing biomass based sustainable energy solutions.

UNIT I

Biomass resource assessment: Introduction, Classification and properties of biomass, Biomass characterization, different energy conversion methods, Bio Energy Resources, World Bio Energy

Potential, India's Bio Energy Potential, Biomass Resources and classification, Physio-chemical characteristics. Biomass Combustion, Loose biomass densification, Biomass based power generation and utilization for domestic cooking, Improved biomass cookstoves.

UNIT II

Biogas Systems: Technology of Biogas production, Biogas Plants, Digester types, Digester design, Chemical kinetics and mathematical modeling of bio methanation process, Dung, Vegetable Waste and Municipal Waste based Biogas plants, Biogas as fuel for transportation, Lighting, Running Dual Fuel Engines, Electricity generation, Biogas Bottling Plant Technology, Application of Biogas slurry in agriculture, Design of Biogas for cold climates. Case studies and numerical.

UNIT III

Biomass Gasifiers: History , Principle , Design of Bio mass Gasifiers , updraft gasifier, down draft gasifier, zero carbon biomass gasification plants, Gasification of plastic-rich waste, applications for cooking, electricity generation, Gasifier Engines, Operation of spark ignition and compression ignition engine with wood gas, methanol, ethanol and biogas, Biomass integrated gasification/combined cycles systems, gasification, pyrolysis, liquification, biomass pretreatment and processing, Case studies, biodiesel, improved biomass cookstove, biohydrogen generation, electricity generation from biomass gasifier, engine systems, bio-gasoline, bio-diesel and duel fuel engine, case studies.

UNIT IV

Biofuel: Bioethanol production from lignocelluloses, waste material, including crop residue, sugar and starch; biodiesel production from vegetable oil and animal fat, algae; biofuel derived from; economics of biofuel production; environmental impacts of biofuels; biofuel blends; green diesel from vegetable oil; biodiesel production process, by-product utilization. Production of butanol and propanol; Production of biohydrogen; production of hydrogen by fermentative bacteria.



Bio-refinery concept: Bio-refinery concept: definition; different types of bio-refinery; challenge and opportunities; Fuel and chemical production from saccharides, lignocellulosic biomass, protein; vegetable oil; algal biorefinery.

Text/References:

1. Mutha, V. K. (2010). Handbook of bioenergy and biofuel SBS Publishers, Delhi
2. Clark, J. H., & Deswarte, F. (Eds.). (2014). Introduction to chemicals from biomass. John Wiley & Sons.
3. Klass, D. L. (1998). Biomass for renewable energy, fuels, and chemicals. Elsevier.
4. Mukunda, H. S. (2011). Understanding clean energy and fuels from biomass. Wiley India.
5. Higan C. and Burt M v d (2003); Gasification, Elsevier Science
6. Speight, J. (2008). Synthetic fuels handbook: properties, process and performance. McGraw-Hill
7. Dahiya, A. (Ed.). (2014). Bioenergy: Biomass to biofuels. Academic Press.
8. Hall, D. O., & Overend, R. P. (1987). Biomass: regenerable energy.
9. San Pietro, A. (Ed.). (2012). Biochemical and photosynthetic aspects of energy production. Elsevier. New York



MTESM -105

RENEWABLE ENERGY GENERATIONS AND CONTROL

Semester - I

L T P Credits
3 1 0 4

Class-work Marks : 40
Exam Marks : 60
Total Marks : 100
Duration of Examination : 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

An undergraduate student taking this course will have foundation knowledge of various forms of renewable energy sources. Students will be able to learn about the solar energy and their utilization, wind energy and its applications, fuel cells, biomass, geothermal energy, MHD generation and ocean thermal energy, and hybrid renewable energy sources and technology.

UNIT 1

Introduction to energy sources: Primary and secondary energy sources, limitations to primary sources, Indian Energy Scene, Conventional and non-conventional energy sources, Prospects of renewable energy sources, MNRE and various schemes for promotion of Renewable Energy utilization.

Photo-voltaic, Fuel cells Powered generation: Distributed generation versus traditional power systems, Basic characteristics of sunlight - solar energy resource - photovoltaic cell - cell efficiency – characteristics - equivalent circuit – photo voltaic for battery charging – charge regulators – PV modules – battery backup – limitations – equipment’s and systems – types of fuel cells – losses in fuel cells – solar- thermal power generation

UNIT 2

Wind Turbines and Embedded Generation: Wind Source- Wind statistics- energy in the wind- aerodynamics- rotor types- forces developed by blades- aerodynamic modelsbraking systems- tower- control and monitoring systems- power performance – wind driven induction generators – power circle diagram- steady state performance- modelling- integration issues- impact on central generation- transmission and distribution systems- wind farm.

UNIT 3

Isolated generation and Energy storage for Distributed Generation: Wind- diesel systems- fuel savings- permanent magnet alternators- modelling- steady state equivalent circuit- self excited induction generators- integrated wind- solar systems, battery energy storage, SMES, capacitor and other energy storage systems.



UNIT 4

Gas turbine powered Distributed generators and other Renewable Sources: Gas turbine types, mini and micro gas turbine generators, micro- hydel electric systems- power potential- scheme layout- generation efficiency and turbine power flow, isolated and parallel operation of generators- tidal and other sources and applications.

Text/ Reference books:

1. G.D. Rai, “Non-Conventional Energy Sources”, Khanna Publications, 1st Edition 2011
2. B.K.Khan, “Non-Conventional Energy Resources”, Tata McGraw-Hill Education. 2006
3. L.E. Ferris and D. Infield , “Renewable Energy in Power Systems”, Wiley, 1st Edition, 2008,
4. M.R. Patel, “Wind and Solar Power System, Design, Analysis and Operation”, CRC Press, 2nd Edition 2006.
5. John F. Walker & Jenkins, N., “Wind Energy Technology,” John Wiley and sons, Chichester, U.K., 1997.
6. Van Overstraeton R. J and Mertens R P., “Physics, Technology and use of photovoltaic”, AdemHilger, Bristol, 1996.



MTESM-201

MANAGEMENT OF RURAL ENERGY SYSTEM

Semester - II

L T P Credits

3 1 0 4

Class works Marks: 30

Exam Marks: 70

Total Marks: 100

Duration of Examination: 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. To impart knowledge about the planning and design aspects of electrification of rural areas.

UNIT I

Electrical load survey and forecasting, rural load management. Route survey and profiling of transmission and distribution lines.

UNIT II

Mechanical design of low-tension distribution lines, selection of poles/supports etc. Electrical design of low-tension distribution lines: selection of conductors and insulators etc.

UNIT III

Planning, selection and design of substations for rural electrical system. Load flow methods for transmission and distribution system; fault analysis: different types of faults and their calculation procedures

UNIT IV

Co-ordination between power and tele-communication lines Maintenance of transmission and distribution lines Case study of a typical system

Text/References:

1. Kamaraju, V., "Electric Power Distribution System", Tata McGraw Hill Education Private Limited.
2. Grainger, J.J. and Stevenson, W.D., "Power System Analysis", Tata McGraw Hill Publishing Company Limited.
3. Jangwala, N.K., "Modern Trends and Practices in Power Subtransmission and Distribution Systems", Vol.-I and II, CBIP Publication.
4. Widmer, P. and Arter, A., "Village Electrification", MHPG, SKAT Publication.
5. Pabla A.S., "Electric Power Distribution", 5th edition, Tata McGraw Hill Publishing Company.
6. Harker, K., "Power System Commissioning and Maintenance Practice", The



MTESM-202

SOLAR THERMAL TECHNOLOGIES AND APPLICATIONS

Semester - II

L T P Credits

3 1 0 4

Class works Marks: 30

Exam Marks: 70

Total Marks: 100

Duration of Examination: 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

Various types of solar thermal collectors. Details of thermal performance of different thermal collector configurations are included. Emphasis has been given to the concentrating collector for power generation and the application of solar energy for industrial process heat. Solar thermal energy storage through different mechanics and processes and also discussed. The course is designed with objectives to make the students capable to analyze the performance of solar thermal systems.

UNIT I

Basics for solar thermal system: Different design and components; Radiation transmission and absorption through glazing; Selective surfaces: Ideal coating characteristics, Anti reflection coating;

Flat plate collector: Theory and basic design aspects; Thermal analysis and effective heat loss; Performance analysis methods; Thermal analysis and effective energy loss of evacuated tube collector; Flat plate solar dryer: Issues and challenges.

UNIT II

Concentrating collector: Classification of concentrating collector; concentrating collector configurations; concentration ratio: optical, geometrical; Thermal performance of concentrating collector; Optical and thermal performance of different concentrating collector designs; Parabolic trough concentrators; Compound parabolic concentrator; Concentrators with point focus.

UNIT III

Solar thermal power plant: Central receiver systems; Heliostats; Comparison of various designs: Parabolic trough systems, Rankine cycle, Parabolic Dish - Stirling System, Combined cycle

UNIT IV

Solar industrial process heat: Integration of solar thermal system with industrial processes; Mechanical design considerations; Economics of industrial process heat

Solar thermal energy storage: Sensible storage; Latent heat storage; Thermo-chemical storage; High temperature storage; Designing thermal storage systems

Text/References:

1. Duffie J. A. and Beckman W. A. (2013), Solar Engineering of Thermal Processes, John Wiley
2. Garg H. P. and Prakash S. (2000), Solar Energy: Fundamental and Application, Tata McGraw Hill
3. Goswami D. Y. (2015), Principles of Solar Engineering, Taylor and Francis



4. Tiwari G. N. (2002), Solar Energy: Fundamentals, Design, Modeling and Applications, Narosa
5. Nayak J. K. and Sukhatme S. P. (2006), Solar Energy: Principles of Thermal Collection and Storage, Tata McGraw Hill
6. Serrano, M. I. R. (2017). Concentrating solar thermal technologies. In Concentrating Solar Thermal Technologies (pp. 11-24). Springer, Cham.
7. Tyagi, H., Chakraborty, P. R., Powar, S., & Agarwal, A. K. (Eds.). (2019). Solar Energy:



1. Ali Keyhani, “Design of smart power grid renewable energy systems”, Wiley IEEE,2011.
2. Clark W. Gellings, “The Smart Grid: Enabling Energy Efficiency and Demand Response”, CRC Press, 2009.
3. JanakaEkanayake, Nick Jenkins, KithsiriLiyanage, “Smart Grid: Technology and Applications”, Wiley 2012.
4. Stuart Borlas’e, “Smart Grid:Infrastructure, Technology and solutions “CRC Press.
5. A.G.Phadke , “Synchronized Phasor Measurement and their Applications”,Springer



Semester -II

L T P Credits
3 1 0 4

Class-work Marks : 40

Exam Marks : 60

Total Marks : 100

Duration of Examination : 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. To understand wind and hydro energy resource assessment techniques.
2. To understand the principles of conversion to useful form of energy from these resources.
3. To understand the working principles of the conversion devices, limitations, cost of energy generation and environmental issues

Unit 1

Basics of Wind Energy: Atmospheric circulations, classification, factors influencing wind, wind shear, turbulence, wind speed monitoring, Wind resource assessment, Weibull distribution, Betz limit, Aerodynamic theories, Axial momentum, Blade element and combine theory, Rotor characteristics, Maximum power coefficient, Tip loss correction

. Unit 2

Wind energy conversion systems: Classification, applications, power, torque and speed characteristics Aerodynamic design principles etc, wind turbine design considerations: methodology, theoretical simulation of wind turbine characteristics.

Principle of WEG: Stand alone, grid connected; Hybrid applications of WECS; Wind pumps, performance analysis of wind pumps, design concept and testing, economics of Wind energy utilization, Wind energy Program in India.

Unit 3

Hydrology: Resource assessment, Potential of hydropower in India, Classification of Hydropower Plants, Small Hydropower Systems, Overview of micro, mini and small hydro systems, Status of Hydropower Worldwide and India

Hydraulic Turbines: types and operational aspects, classification of turbines, elements of turbine, selection and design criteria, geometric similarity operating characteristic curves; Speed and voltage regulation Selection of site for hydroelectric plant, Essential elements of hydroelectric power plant.

Unit 4

Economics: cost structure, Initial and operation cost, environmental issues related to large hydro projects, Potential of hydro power in North East India

Suggested reading



1. Johnson G. L. (2006). Wind Energy Systems (Electronic Edition), Prentice Hall
2. Wagner H. and Mathur J. (2011). Introduction to Hydro Energy Systems: Basics, Technology and Operation, Springer Reference Books
3. Hau E. (2000). Wind Turbines: Fundamentals, Technologies, Application and Economics, Springer
4. Mathew S. (2006). Wind Energy: Fundamentals, Resource Analysis and Economics, Springer
5. Burton T. Sharpe D. Jenkins N. and Bossanyi E. (2001). Wind Energy Handbook, John Wiley
6. Nag P. K. (2008). Power Plant Engineering, Third Edition, Tata McGraw Hill
7. Jiandong T. (et al.) (1997). Mini Hydropower, John Wiley



MTESM-302

WASTE TO ENERGY CONVERSION

Semester - II

L T P Credits
3 1 0 4

Class works Marks: 30

Exam Marks: 70

Total Marks: 100

Duration of Examination: 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

- To enable students to understand of the concept of waste to energy.
- To learn about the best available technologies for waste to energy.
- To link legal, technical & management principles for production of energy from waste.

UNIT I

Introduction to energy from waste: characterization and classification of waste as fuel; agrobased, forest residues, industrial waste, Municipal solid waste

Solid Waste Sources: Solid Waste Sources, types compositions and Properties, Municipal Solid Waste, Physical, chemical and biological properties, Waste Collection and transfer stations, Waste minimization and recycling of municipal waste, Segregation of waste, Size Reduction, Managing Waste, Status of technologies for generation of Energy from Waste.

UNIT II

Waste Treatment and Disposal: Aerobic composting, Furnace types and designs, Medical waste /Pharmaceutical waste treatment Technologies, concept of Bioremediation, Incineration, Environmental impacts, Measures to mitigate environmental effects due to incineration

Land Fill method of Solid waste disposal: Land fill classifications, Types, methods and Siting consideration, Layout and preliminary design of landfills: Composition, characteristics, generation, movement and control of landfill leachate and gases, Environmental monitoring system for land fill gases.

UNIT III

Energy Generation from Waste (Biochemical Conversion): Sources of energy generation, Anaerobic digestion of sewage and municipal wastes, Direct combustion of MSW-refuse derived solid fuel, Industrial waste, Agro residues, Anaerobic Digestion: Biogas production, Land fill gas generation and utilization, Thermochemical conversion: Sources of energy generation, Gasification of waste using gasifiers, Briquetting, Utilization and advantages of briquetting, Case studies of Commercial Waste to Energy Plants , Present status (National and International) of Technologies for Conversion of Waste into Energy, Design of Waste to Energy Plants for Cities, small townships and villages.

UNIT IV

Waste to energy options: Biochemical and Thermochemical routes; Biochemical Options – Anaerobic Digestion, Fermentation; Thermochemical Options – Pyrolysis, Gasification and Incineration; Other options – Biodiesel synthesis, Briquetting and Torrefaction, Hazardous waste management;

Properties of fuels derived from waste to energy: Producer gas, Biogas, Ethanol and Briquettes, Comparison of properties with conventional fuels; Landfills: Gas generation and collection in landfills, Introduction to transfer stations



Environmental Impact: Benefits of Biochemical and Thermochemical conversions

Text/References:

1. Energy from Waste - An Evaluation of Conversion Technologies by C Parker and T Roberts (Ed),
2. Parker, C., & Roberts, T. (1985). Energy from waste: an evaluation of conversion technologies. Elsevier Applied Science, London.
3. Shah, K. L. (2000). Basics of solid and hazardous waste management technology, Prentice Hall.
4. Christensen, T. H., Cossu, R., & Stegmann, R. (Eds.). (2005). Landfilling of waste: leachate. CRC Press.
5. White, P., Dranke, M., & Hindle, P. (2012). Integrated solid waste management: a lifecycle inventory. Springer Science & Business Media.
6. Klinghoffer, Naomi B., and Marco J. Castaldi, eds. Waste to energy conversion technology. Elsevier, 2013.
7. Kalogirou, E. N. (2017). Waste-to-Energy technologies and global applications. CRC Press.



MTESM-303 ECONOMICS AND FINANCING OF RENEWABLE ENERGY SYSTEMS

Semester – II

L T P Credits
3 1 0 4

Class-work Marks : 40
Exam Marks : 60
Total Marks : 100
Duration of Examination : 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. To impart knowledge on fundamentals of economic principles and their applications in the broad field of supply and demand of energy
2. To make students inquisitive about the problems of energy economics and arousing their interest on practical problem solving skills.

Unit 1

Energy economics: Basic concepts, energy data, energy cost, energy balance. Relevance of economic and financial viability evaluation of renewable energy technologies, Basics of engineering economics

Unit 2

Energy accounting framework: Economic theory of demand, production and cost market structure; National energy map of India, Energy subsidy – National and international perspectives

Unit 3

Concepts of economic attributes: Calculation of unit cost of power generation from different sources with examples, different models and methods, Social cost – benefit analysis of renewable energy technologies. Financial feasibility evaluation of renewable energy technologies, Technology dissemination models, Volume and learning effects on costs of renewable energy systems, Dynamics of fuel substitution by renewable energy systems and quantification of benefits

Application of econometrics: input and output optimization; energy planning and forecasting - different methods, Economic approach to environmental protection and management.

Unit 4

Financial incentives: Fiscal, financial and other incentives for promotion of renewable energy systems and their effect on financial and economic viability, electricity tariff types. Financing of renewable energy systems, Carbon finance potential of renewable energy technologies and impact of other incentives. Software for financial evaluation of renewable energy systems. Case studies on financial and economic feasibility evaluation of renewable energy projects



Suggested reading

1. Campbell, H. F., & Brown, R. P. (2003). Benefit-cost analysis: financial and economic appraisal using spreadsheets. Cambridge University Press.
2. Kandpal, T. C., & Garg, H. P. (2003). Financial evaluation of renewable energy technologies. MacMillam India Limited.
3. Park, C. S. (2002). Contemporary engineering economics (Vol. 4). Upper Saddle River, NJ: Prentice Hall.
4. Kroemer, K. H., Kroemer, H. B., & Kroemer-Elbert, K. E. (2001). Ergonomics: how to design for ease and efficiency. Pearson College Division.
5. Dorsman, A. B., Ediger, V. Ş., & Karan, M. B. (Eds.). (2018). Energy Economy, Finance and Geostrategy. Springer.
6. Banks, F. E. (2012). Energy economics: a modern introduction. Springer Science & Business Media.
7. Thuesen G. J. and Fabrycky W. J. (2001); Engineering Economy, Ninth Edition, Prentice Hall India
8. Ayyub, B. M. (2014). Risk analysis in engineering and economics. CRC Press.



Suggested reading

1. Campbell, H. F., & Brown, R. P. (2003). Benefit-cost analysis: financial and economic appraisal using spreadsheets. Cambridge University Press.
2. Kandpal, T. C., & Garg, H. P. (2003). Financial evaluation of renewable energy technologies. MacMillam India Limited.
3. Park, C. S. (2002). Contemporary engineering economics (Vol. 4). Upper Saddle River, NJ: Prentice Hall.
4. Kroemer, K. H., Kroemer, H. B., & Kroemer-Elbert, K. E. (2001). Ergonomics: how to design for ease and efficiency. Pearson College Division.
5. Dorsman, A. B., Ediger, V. Ş., & Karan, M. B. (Eds.). (2018). Energy Economy, Finance and Geostrategy. Springer.
6. Banks, F. E. (2012). Energy economics: a modern introduction. Springer Science & Business Media.
7. Thuesen G. J. and Fabrycky W. J. (2001); Engineering Economy, Ninth Edition, Prentice Hall India
8. Ayyub, B. M. (2014). Risk analysis in engineering and economics. CRC Press.



Semester – II

L T P Credits
3 0 0 3

Class-work Marks : 40
Exam Marks : 60
Total Marks : 100
Duration of Examination : 3 Hrs

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. Understand the characteristics of life cycle assessment
2. Understand the risk and life cycle framework for sustainability
3. Understand the life cycle assessment of renewable energy sources

Unit 1

Life Cycle Analysis: An introduction to sustainability concept and life cycle analysis, introduction to material flow and waste management, study of water resources and food nexus.

Main Characteristics of Life Cycle Assessment: What is LCA?, role of LCA in relation to products, role of LCA in wider applications, strength and limitations of LCA, LCA as part of a tool box, management of LCA projects.

Unit 2

Life Cycle Framework: Risk and life cycle framework for sustainability: introduction, risk, environmental risk assessment, example chemicals and health effects, character of environmental problems

Unit 3

Life Cycle Assessment of Renewable Energy Sources: Life cycle assessment of biodiesel from palm oil, life-cycle assessment of bio methane from lignocelluloses biomass, application of life cycle assessment on agricultural production systems with reference to lignocelluloses biogas and bio ethanol production as transport fuels.

Unit 4

Life Cycle Inventory and Impact Assessments: Life cycle inventory and impact assessments, unit processes and system boundary, data quality, procedure for life cycle impact assessment, LCIA in practice with examples, interpretation of LCIA results.

Unit 5

ISO Terminologies: Factors for good LCA study, ISO terminologies, LCA steps recap, chemical release and fate and transport, and green sustainable materials

Suggested reading:



1. B. Jeroen, Guinee, “Hand Book on Life Cycle Assessment”, Kluwer Academic Publications, 2001.
2. K.Walter, “Background and Future Prospects in Life Cycle Assessment”, Springer,2004.
3. Anoop Singh ,“Life Cycle Assessment of Renewable Energy sources”, Springer, 1995.



Environment Studies (BT AUD308A)

Course Title : Environment Studies

Course Code : BT AUD 308A

L	T	P	Credits	Class-work Marks	: 30
3	0	0	0	Exam Marks	: 70
				Total Marks	: 100
				Duration of Examination	: 3 Hours

Unit: I

The Multidisciplinary nature of environmental studies, Definition, scope and importance. Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems.

- Forest resources: Use and over-exploitation: deforestation, case studies, Timber exploitation, mining, dams and their effects and forests tribal people.
- Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
- Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
- Food resources: World food problems, changes, caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
- Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources; case studies.
- Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit: II

Ecosystems: Concept of an ecosystem. Structure and function of an ecosystem.

Producers, consumers and decomposers. Energy flow in the ecosystem. Ecological succession. Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following eco-system:

- Forest ecosystem.
- Grassland ecosystem.
- Desert ecosystem.
- Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Arun Bano



Unit: III

Biodiversity and its conservations:

Introduction – Definition: Genetic, species and ecosystem diversity.

Biogeographically classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, National and local levels. India as a mega-diversity nation. Hot-spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India.

Unit: IV

Environmental Pollution: Definition, causes, effects and control, measures of: a) Air pollution

- b) Water pollution
- c) Soil pollution
- d) Marine pollution
- e) Noise pollution
- f) Thermal Pollution
- g) Nuclear hazards

Solid waste management: Causes effects and control measures of urban and industrial wastes.

Role of an individual in prevention of pollution.

Pollution case studies. Disaster management: Floods, earthquake, cyclone and landslides.

Social issues and the Environment:

- a) From unsustainable to sustainable development
- b) Urban problems related to energy
- c) Water conservation, rain water harvesting, watershed management
- d) Resettlement and rehabilitation of people; its problems and concerns, case studies
- e) Environmental ethics: Issues and possible solutions
- f) Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case studies
- g) Wasteland reclamation
- h) Consumerism and waste products

Text Books:

1. Bharucha, Franch, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380013, India.
2. Brunner R.C. 1989, Hazardous Waste Incineration, Mc. Graw Hill Inc. 480pp.
3. Clark R.S., Marine Pollution, Slanderson Press Oxford (TB).
4. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental
5. Encyclopedia, Jaico Pub. House, Mumbai. 1195p.
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd. Down to Earth, Centre for Science and Environment ®.

Arjun Bhandari

**Reference Books:**

1. Gleick, H.P., 1993. Water in Crisis, Pacific Institute for Studies in Dev., Environment & Security, Stockholm Env. Institute, Oxford Univ., Press 473p.
2. Hawkins R.E. Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R).
3. Heywood, V.H. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press, 1140p.
4. Jadhav, H & Bhosale, V.M. 1995, Environmental Protection and Laws, Himalaya Pub. House, 7. Helhi 284p.
5. McKinney, M.L. & Schoch, RM 1996, Environmental Sciences Systems & Solutions, Web enhanced Edition 639p

Note:

- The paper setter will set a first compulsory question comprising of 6 to 10 sub parts (short questions), covering the entire syllabus and two questions (with/without parts) from each unit. The examinee will attempt five questions in all, along with the compulsory question (with all its sub parts), selecting one question from each unit. All questions will carry equal marks i.e. 14 marks each.
- The use of programmable devices such as programmable calculators etc. is not allowed during the exam. Sharing of materials will not be permitted during examination.

Arjun B...

Sustainability and Environment Printing & Packaging (BT PPT610)

Total Credit: 4
Max. Marks: 100
Theory: 70
Internal: 30
Time Allowed: 3 Hrs.

Unit: 1

Introduction: Environment, ecology and sustainable development concept. Printing and Packaging environmental aspects; environmental impacts of printing and packaging operations.

Unit: 2

Packaging wastes, effluent treatment and waste minimization. To study reuse, reduce, recycle concept related with printing and packaging.

Unit: 3

To study degradable and non degradable printing and packaging materials. Environmental impact including risk assessment, environmental legislation, Packaging effluent and its treatment.

Unit: 4

Deming Cycle, Problem Solving, Auditing i.e. Quality safety, environmental integration quality assurance practices into a production stream or packaging line. Supply/ storage/ vaporization, Awareness on-site generation, pressure swing/ membrane/ cryogenic methods, Health and Safety. Energy conservation mechanisms with printing and packaging,

REFERENCES

1. Supply Chain Management, Strategy, Planning, and operation – Sunil Chopra and Peter Meindl- PHI, Second edition, 2007
2. Logistics, David J.Bloomberg, Stephen Lemay and Joe B.Hanna, PHI 2002
3. Logistics and Supply Chain Management –Strategies for Reducing Cost and Improving Service. Martin Christopher, Pearson Education Asia, Second Edition
4. Modeling the supply chain, Jeremy F.Shapiro, Thomson Duxbury, 2002
5. Handbook of Supply chain management, James B.Ayers, St.Lucle Press, 2000

B. Tech Printing and Packaging Technology
SYLLABI OF EXAMINATIONS
B. Tech 4th Year (2021-22)

Program Name: B. Tech. - Printing and Packaging Technology

Course Code: BT PPT802A	Course Name: Quality Control & Waste Management	L	T	P	C
		3	0	0	3
Year and Semester	4th Yr. 8th Semester	Contact hours per week: (3 Hrs.)			
Prerequisite of course	Basics of Management	Evaluation			
		CIE: 30		TEE: 70	
Course Level Learning Outcomes: On completion of the course, student would be able to:					
• Describe the quality and its functions.					
• Discuss the environmental impact of printing and packaging industry.					
• List of ISO series.					
• Explain various quality aspects on packages.					
Unit	COURSE SYLLABUS				
1	Definition of Quality, Quality control, its meaning, objective, and functions, Quality Cost, economic consideration, Quality Assurance, Comparative study of quality control and quality assurance, Benefits of Quality Control in Printing Industry, TQM, Quality Circles.				
2	Solid, Liquid and Gaseous wastes in printing and packaging organizations, Environmental impact of printing and packaging industry, SWOT Analysis, wastage reduction in printing and packaging industries. Green protocol and green printing concepts.				
3	Establishing Quality control programme in different departments of Printing organization. Introduction to ISO: 9000 and ISO: 14000 series. Environment Management system, QMS and EMS, Paper and paper board testing instruments for testing printability, print quality and end-user requirements. ISO standards for Graphic technology- ISO 12647- Process Control for halftone color separation, Proof and production prints, ISO 16760:2014 – Prepress data exchange. ISO 16762 & 16763 for Post press, ISO 284b for Printing ink ISO/TC 130 for digital printing and ISO/TC 122 for packaging.				
4	Quality of packages, Press sheet control devices used for production of multi-color printing jobs, Basic principles of these instruments and devices how they function and what they measure, minimum instrumentation necessary to produce a product consistent with the appropriate quality level.				

Shankar
Shankar



Sandeep
Tanuj

Animesh
Animesh

Suggested readings:

1. Amitava Mitra, *Fundamentals of Quality Control and Improvement*, Wiley; 4th edition (21 June 2016).
2. John Pichtel, *Waste management practices*, CRC Press; 2nd edition (31 March 2014).
3. U S Environmental Protection Agency, *Handbook: Quality Assurance/Quality Control (Qa/Qc) Procedures for Hazardous Waste Incineration*, Bibliogov (1 March 2013).
4. A.K. Bewoor V.A. Kulkarni, *Quality Control*, Wiley (1 January 2009).
5. George Tchobanoglous, Frank Kreith, U S Environmental Protection Agency, *Handbook of Solid Waste Management*, Second Edition, The McGraw-Hill Companies, Inc., 2002.






SUSTAINABLE CONSTRUCTION ENGINEERING

Course code BT CE 524A

L	T	P	Credits
3	0	--	3

Course Outcomes:

CO1. To create new engineering materials to improve the performance of infrastructure

CO2. To acquire knowledge on mitigate natural and man-made hazards

CO3. To understand fundamental knowledge of the inter-relationships between the built environment and natural systems.

CO4. To develop the technological innovations needed to safeguard, improve, and economize infrastructure and society.

UNIT I

Fundamentals of Sustainable Construction Engineering- Sustainability and resources, need, present practices at national and international level, The Sustainability Quadrant- challenges & Issues, Government initiatives.

UNIT II

Construction Product, Process Design and Development- Sustainability of construction resources, process modifications, product performance evaluation.

UNIT III

Sustainability assessment using standard approaches- LEED/GRIHA rating evaluation process. Socio-economic feasibility of sustainable construction products- Innovative & customized sustainable product design based on social constraints, tools & aids available for sustainable construction products.

UNIT IV

Life Cycle Assessment and Costing-Variou aspects related to construction cost, present value analysis, life cycle stages, cost calculation & measures, evaluation criteria, uncertainty assessment, sensitivity analysis, break even analysis.

Suggested Readings:

1. Hagger *Sustainable Industrial Design and Waste Management*, Techniz Book 2010.
2. Jorge A. Vanegas, *Sustainable Engineering Practice* ASCE Publication 2010.
3. *LEED for India, Green Building Rating System Reference Guide*, 2011.

Handwritten signatures and dates: 24/9/19, 24/9/19, 24/9, 24/9/19, 24/9/19, 24/9/19.

4. Rechberger Helmut, *Practical handbook of Material Flow Analysis*, Taylor & Francis. 2010.
5. Z. Michael. Hou, Heping Xie, Jeoungseok Yoon *Underground Storage of CO2 and Energy*, Taylor & Francis, 2010.

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ENVIRONMENTAL ENGINEERING-I

Course Code: BTCE 504A :

L	T	P	Credits
3	0	--	3

Course Outcomes

CO1: Understand the various components of water supply scheme and water demands

CO2: Learn and analyze the relevant physical and chemical characteristics of water as per BIS

CO3: Develop ability to design various components/units of water treatment plant

CO4: Develop the understanding of objectives and methods of water disinfection

UNIT – I

Water Sources: Principal and Importance of water supplies, Surface and ground water sources; Selection and development of sources

Water Supply Systems: Municipal water demands and demand variations, Population forecasting and water demand estimations; Intakes and transmission systems, pipes for transporting water and their design

UNIT – II

Water Quality: Physical, chemical and biological water quality parameters; Water quality index; Water quality standards; Water borne diseases and their control.

Water treatment - I: Water treatment schemes; Basic principles of water treatment; Design of plain sedimentation, coagulation and flocculation, filtration – slow, rapid and pressure filter; Disinfection units.

UNIT – III

Water treatment - II: Fundamentals of water softening, fluoridation and defluoridation, and water desalinization and demineralization. Advanced treatments like adsorption, ion exchange, membrane processes.

Design of Water Supply Systems: Water distribution system service reservoirs; Methods of distribution and maintenance of water supply systems. Data and background information for the design of water supply system.

UNIT – IV

Pumps and pumping stations: Types of pumps and their characteristics and efficiencies; Pump operating curves and selection of pumps; pumping stations.


Introduction to various types of home plumbing systems for water supply, Plumbing System in water Supplies, Small scale and household level water purification system, Various valves used in W/S systems.

Suggested Readings:

Handwritten signatures and dates: 24/9/19, 24/9/19, 24/9, 24/9/19, 24/9/19, 24/9/19.

1. American Public Health Association, *Standard Methods for the Examination of Water and Waste Water*. 2017.
2. Fair, G. & Okun, John W. *Water and Waste Water Engineering (Vol. 1&2)*. John Wiley & Sons Publishers, 2010.
3. Garg, S.K. *Environmental Engineering. Vol. I*. Khanna Publishers, 1977.
4. Ministry of Urban Development, *Manual on Water Supply and Treatment*. 2005.
5. Modi, P.N. *Water Supply Engineering*. Standard Book House, 2017.
6. Peavy, Howard S., Rowe, Donald R. and Tchobanoglous, G. *Environmental Engineering*. McGraw Hill, 2017.

Note: Latest Edition of Books is to be referred.

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ENVIRONMENTAL ENGINEERING – II

Course Code: BT CE 604A

L	T	P	Credits
3	0	--	3

Course Outcomes

- CO1: Understand and design the various components of sewerage system
- CO2: Analyze the relevant physical and chemical characteristics of sewage
- CO3: Design various components/units of sewage treatment plant
- CO4: Understand objectives and methods of sewage disposal and sludge digestion

UNIT – I

Sewerage system: Generation and Estimation of Community Sewage; Flow variations; Storm Water flow; Alternate systems for sewage collection and conveyance; Design of sewers; operation and maintenance of sewers,

Characterization of sewage: Physical and Chemical Characteristics of Sewage; Sampling, testing and analysis of sewage; Relative stability and population equivalent.

UNIT – II

Treatment of sewage: Effluents standards; Basic principles of sewage treatment; Introduction to unit operations and processes - primary treatment units such as screening, grit chamber, and Sedimentation tanks. Secondary treatment units and tertiary treatment Sludge Handling and disposal – thickening, stabilization, dewatering, drying and disposal

UNIT – III

Sewage treatment units design: Secondary Treatment through Activated Sludge Process, TF, and Pollution due to improper disposal of sewage, Government authorities and their roles in sewerage disposal

Treated effluent disposal: Disposal into surface water bodies; Reuse for irrigation and aqua-culturing; Land disposal; Disposal through injection into groundwater, Indian standards for disposal of effluent.

UNIT – IV

Low cost sanitation systems – Imhoff tanks, septic tank, stabilization ponds; oxidation ponds; and constructed wetland systems.

Pumping: Sewage pumping and pumping stations, Sewer connections for houses and buildings, Sewer appurtenances; Construction, testing and Maintenance of sewers.

Suggested Readings

1. Fair, G. & Okun, John W. *Water and Waste Water Engineering (Vol. 1&2)*. John Wiley & Sons Publishers, 2010.
2. Garg, S.K. *Environmental Engineering Vol. I*. Khanna Publishers, 1977.
3. *Manual on Water Supply and Treatment*. Ministry of Urban Development, 2019.

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4. Modi, P.N. *Water Supply Engineering*. Standard Book House, 2017.
5. Peavy, Howard S., Rowe, Donald R. and Tchobanoglous, G. *Environmental Engineering*. McGraw-Hill Book company, 2017.
6. Punmia, B. C., Ashok K. Jain, Arun K. Jain, *Waste Water Engineering*. Laxmi Publisher, 1998.
7. *Standard Methods for the Examination of Water and Waste Water*. American Public Health Association, 2017.

Note: Latest edition of books is to be referred.

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BT CE-702A: EARTHQUAKE ENGINEERING

B. Tech. 4th Year (Semester – VII)

L	T	P	Credit
3	--	--	3

Course Outcomes

CO1. Acquire knowledge of engineering seismology

CO2. Analyze the earth quake forces and response of SDOF and MDOF system

CO3. Learn the design philosophies of earthquake resistant structures using IS codes 1893:2002

CO4. Evaluate the condition of the existing RC and masonry buildings.

UNIT –I

Engineering Seismology: Engineering seismology, Seismic zones of India, Earthquake and its causes, Types of waves, location of earthquakes, seismograph, Impact of Earthquake.

UNIT-II

Theory of Vibration: Free Body Diagrams, Undamped single degree of freedom systems, Damped single degree of freedom system, Response to single degree of freedom system to harmonic loads.

UNIT –III

Earthquake Resistant Design: Philosophy of Earthquake resistant Design, Design Consideration, Construction Details, Architectural General guidelines for Masonry buildings, RC buildings and non structural elements.

Earthquake Forces: Seismic coefficient and response spectrum method of analysis as per IS 1893 Codal Provisions. Examples on seismic force calculation of buildings.

UNIT – IV

Ductility Provisions: Introduction, ductility, ductility consideration for RC beams, RC Columns, Lateral reinforcement in columns, special reinforcement in columns, and ductility consideration for Beam column joints.

Seismic Vulnerability Assessment: Seismic evaluation of building, Rapid visual Inspection simplified and detailed vulnerability assessment, Detailed In-situ investigation, Non-destructive test, Partially destructive test.

Suggested Readings

1. Agarwal, Pankaj, *Earthquake Resistant Design of Structures*, PHI learning Private Limited, 2011
2. Aggrawal, M. M., *Railway Engineering Second Edition.*, Oxford Publication, 2013.
3. Chopra, Anil Kr., *Structural Dynamics*, Pearson, 2007
4. Clough and Penzian, *Dynamics of Structures*, McGraw Hill Publishing Co., New York, 1993
5. Paz, Mario, *Structural Dynamics (Theory and Computation)*, CBS Publishers and Distributors, 2004
6. Roy, R. Carig, Jr., *Structural Dynamics (An Introduction to computer methods)*, John Wiley & Sons

Note: Latest Edition of Books is to be taken.

BT CE 703A: MINOR PROJECT

BT CE 802A: DISASTER MANAGEMENT

B. Tech. 4th Year (Semester – VIII)

L	T	P	Credit
3	--	--	3

Course Outcomes

CO1: Know the significance of disaster management,

CO2: Study the occurrences, reasons and mechanism of various types of disaster

CO3: Learn the preventive measures as Civil Engineer with latest codal provisions

CO4: Apply the latest technology in mitigation of disasters

UNIT-I

Introduction: Disaster, Emergency, Hazard, Mitigation, Disaster Prevention, Preparedness and Rehabilitation, Risk and Vulnerability, Classification of Disaster, Natural and Manmade Disasters, International day and Decade of Disaster Reduction.

Risk and Vulnerability to disaster mitigation and management options, Warning and Forecasting

UNIT-II

Hydro-Meteorological Based Disasters: Disaster Management Act 2005, Role of NDMA, NDRF, NIDM, Tropical Cyclones, Floods, droughts, mechanism, causes, role of Indian Metrological Department, Central Water Commission, structure and their impacts, classifications, vulnerability, Early Warning System, Forecasting, Flood Warning System, Drought Indicators, recurrence and declaration, Structural and Nonstructural Measures.

Desertification Zones, causes and impacts of desertification, Characteristics, Vulnerability to India and Steps taken to combat desertification, Forest Fires; Causes of Forest Fires; Impact of Forest Fires, Prevention.

UNIT-III

Geological Based Disasters: Earthquake, Reasons, Compression, Shear, Rayleigh and Love Waves; Magnitude and Intensity Scales, Direct and Indirect Impact of Earthquake; Seismic Zones in India, Factors, Indian Standards Guidelines for RCC and Masonry Structures, Prevention and Preparedness for Earthquake, Tsunamis, Landslides and avalanches: Definition, causes and structure; past lesson learnt and measures taken; their Characteristic features, Impact and prevention, Atlas (BMTRPC); structural and non structural measures.

UNIT-IV

Manmade Disasters: Chemical Industrial hazards; causes and factors, pre- and post disaster measures; control ; Indian Standard Guidelines and Compliance; Traffic accidents; classification and impact, Fire hazards; Classification as per Indian Standards; Fire risk assessment; Escape routes; fire fighting equipments; classification of buildings, fire zones, occupancy loads; .capacity and arrangements of exists, Use of remote sensing and GIS in disaster mitigation and management.

Suggested Readings:

1. Abbott, Patrick Leon, *Natural Disasters*, Amazon Publications, 2002
2. Gauba Nidhi, Dhawan and Khan, Ambrina Sardar, *Disaster Management and Preparedness*, CBS Publishers & Distribution
3. Oosterom, Petervan, Zlatanova, Siyka, Fendel, Elfriede M., *Geo-information for Disaster Management*, Springer Publications, 2005
4. Schneid., Thomas D., *Disaster Management and Preparedness*, CRC Publication, USA, 2001
5. Singh, Savindra and Singh, Jeetendra, *Disaster Management*, Pravalika Publications, Allahabad
6. Wisner., Ben, *At Risk: Natural Hazards, People vulnerability and Disaster*, Amazon Publications, 2001

Note: Latest Edition of Books is to be taken.

Generic Elective Courses (GEC)

Year	I	VALUE BASED EDUCATION (GEC)	Credits	4
Semester	I		Course Code	SOE 02 01 01 GEC 3104
Learning Outcomes		After the completion of the course, students will be able to: <ul style="list-style-type: none"> ● Describe the concept, need and classifications of values and adopt various values. ● Summarize the importance of value education and critically analyze the need for value education. ● Adopt various aspects of values for personal development. ● Inculcate and develop various social values. 		
Course Content				
Unit -1		Understanding of Values <ul style="list-style-type: none"> ● Concept, need and importance of values, classification of Values ● Core values- truth, righteous conduct, peace, love and non-violence ● Challenges of Values Adoption ● Strategies for inculcating values 		
Unit -2		Value Education <ul style="list-style-type: none"> ● Concept, need and importance of Value Education ● Values inherent in the preamble of Indian Constitution ● Roll of family, school and society in promoting Values ● Recommendations of Shri Prakash committee on value Education 		
Unit -3		Values for Personal Development <ul style="list-style-type: none"> ● Impact of Religion & Secularism ● Values for Character Development ● Integration of values in education ● Methods and approaches of inculcating values 		
Unit -4		Values in Society <ul style="list-style-type: none"> ● Positive Thinking -Concept, tips to develop positive attitude ● Emotional Maturity- Concept and levels 		

	<ul style="list-style-type: none"> ● Women's Empowerment – Concept and importance ● Environmental Awareness – Concept and importance
Transaction Strategies/ Teaching Learning Process	Lecture cum discussion, Tutorials, Brainstorming Session, Use of PPTs, Assignments on different key areas of Value related issues.
Practicum:	<ul style="list-style-type: none"> ● Develop / compile stories with values from different sources and cultures, organize value based co-curricular activities in the classroom and outside the classroom. ● Develop value-based lesson plans, integrating values in school subjects. ● Study of any Model of integrated value education – case study of models expressed by Sri SatyaSai, J. Krishnamurti, etc. ● In addition, school and community-based activities may be organized.
Suggested Readings:	<ul style="list-style-type: none"> ● Anchukandam, T. and J. Kuttalnimathathll (1995). <i>Grow free, live free</i>. Bangalore: Kristu Jyoti Publications. ● Arulsamy, S. (2016). <i>Peace and value education</i>. New Delhi: Neel Kamal Publication. ● Barash, P. David (2000). <i>Approaches to Peace</i>. New York:Oxford University Press. ● Behra, S.K., Duarah, Mouchumi and Mohakud, Lalit Lalitav (2018). <i>Value Education in the 21st Century</i>. New Delhi: New Delhi Publishers. ● Charles, K. (2016). <i>Value education</i>. New Delhi: Neel Kamal Publication. ● Charles, K., &Selvi, A. (2016). <i>Peace and value education</i>, New Delhi: Neel Kamal Publication. ● Govt of India (1983). <i>Report on education in human values in teacher training programmes</i>, New Delhi, and Ministry of Human Resource Development. ● Jacob, M. (2002). <i>Resource book for value education</i>. New Delhi: Institute for Value Education ● Kapani, Madhu (2000). <i>Education in human values – concept and practical implications</i>, New Delhi: Sterling Publishers. ● S. Ignacimuthu(1991). <i>Values for life – Better Yourself Books</i>, Mumbai. ● Sri Sathya Sai Bal Vikas Education Trust (1985). <i>Curriculum and methodology for integrating human values education</i>, PrashanthiNilayam (International Education). ● Sri SathyaSai International Center for Human Values (2009). <i>Education in human values</i>. Course Book for Training of Master Trainers, New Delhi. ● <i>The curriculum framework for quality teacher education</i> (1998) NCTE, New Delhi.

Year	I	VALUE AND PEACE EDUCATION	Credits	4
Semester	II		Course code	SOE 02 02 09 C3104
Learning Outcomes	After completion of the course, students will be able to: <ul style="list-style-type: none"> ● Illustrate the concept of values, classify it's various sources and critically appreciate the role of teachers in promoting values. ● Point out the importance of value education and compare the various models of value education. ● Reflect on ideas of distinguished thinkers and explain the challenges, need and role of UNESCO in promoting peace Education. ● Select and employ various approaches and techniques for teaching of value and peace education. 			
Course Content				
Unit -1	Conceptual understanding of values			
	<ul style="list-style-type: none"> ● Concept, sources, classification and selection of values ● Values inherent in Preamble of the Indian Constitution ● Values prevalent in the contemporary society ● Role of teacher in calculating the Values 			
Unit -2	An Overview of Value Education			
	<ul style="list-style-type: none"> ● Concept of value education ● Need for and importance of value education in the present scenario ● Recommendations of Sri Prakash Committee (1959) on value education ● Models of value education: Rationale building model, the consideration model, valuing process and clarification model 			
Unit -3	Peace Education in Contemporary Era and its relevance			
	<ul style="list-style-type: none"> ● Concept, importance of Peace, Needs of Peace Education in contemporary Society ● Ideas of distinguished thinkers about Peace: <ul style="list-style-type: none"> ➤ Mahatma Gandhi ➤ J. Krishnamurthy ➤ Swami Vivekananda ➤ Rabindranath Tagore ● Challenges to peace: Stress, conflicts, crimes, terrorism, violence and poor quality of life 			

	<ul style="list-style-type: none"> • Role of UNESCO in promoting of peace Education
Unit -4	Approaches and Techniques of Value and Peace Education
	<ul style="list-style-type: none"> • Direct approach: Silent sitting, Yoga and Meditation, Value Based Story-Telling • Group activities (Dramatization, Literary Activities, Games and Sports, Service Activities) • Organizing value based co-curricular activities • Guidance and Counselling
Transaction Strategies/ Teaching Learning Process	Lecture cum discussion, Tutorials, Brainstorming Session, Use of PPTs, Assignments on different key areas of Value and Peace related issues.
Practicum:	
<ul style="list-style-type: none"> • Develop / compile stories with values from different sources and cultures. • Organize value based co-curricular activities in the classroom and outside the classroom. • Develop value-based lesson plans, integrating values in school subjects. • In addition, school and community-based activities may be organized. • Any other activity suggested by the teacher. 	
Suggested Readings:	
<ul style="list-style-type: none"> • Arulsamy, S. (2016). <i>Peace and value education</i>. New Delhi: Neelkamal Publication. • Barash, P. David (2000). <i>Approaches to Peace</i>. New York: Oxford University Press. • Behra, S.K., Duarah, Mouchumi and Mohakud, Lalit Lalitav (2018). <i>Value Education in the 21st Century</i>. New Delhi: New Delhi Publishers. • Charles, K., & Selvi, A. (2016). <i>Peace and value education</i>, New Delhi: Neelkamal Publication. • Bernard, Jessie (1957). <i>The Sociological study of conflict. International Sociological Association, the Nature of Conflict</i>, UNESCO Paris. • Galtung, J. (1984). <i>The Struggle for Peace</i>. Ahmedabad: Gujarat Vidyapeeth. • Gandhi, M.K. (1944). <i>Non-Violence in Peace and War</i>. Ahmedabad: Navajeevan Publishing House. 	

- Govt. of India (1983). *Report on Education in Human Values in Teacher Training Programmes*. New Delhi: Ministry of Human Resource Development.
- Harris Ian. M. (1998). *Peace Education*. McFarland& Company, London: Inc. Publisher.
- Howlett, Charles F. (2008). *John Dewey and Peace Education, Encyclopedia of Peace Education*. Teacher College, Columbia University.
- Kapani, Madhu (2000). *Education in Human Values – concept and practical implications*. New Delhi: Sterling Publishers.
- NCERT National Curriculum Framework (2005). *National focus Group on Education for Peace*. NCERT, New Delhi (2006).
- National Curriculum Framework (2005). *National Focus group on Education for Peace*, NCERT, New Delhi.
- NCTE (1998). *Curriculum Framework for Quality Teacher Education*. NCTE, New Delhi.
- Pandey, S. (2004). *Education for Peace, Self-Instructional Package for Teacher Education*. NCERT, New Delhi.
- Sri Sathya Sai Bal Vikas Education Trust (1985). *Curriculum and Methodology for integrating Human Values Education*. Prashanthi Nilayam (International Education).
- Sri Sathya Sai International Center for Human Values (2009). *Education in Human Values: Course Book for Training of Master Trainers*, New Delhi.
- The Curriculum framework for Quality Teacher Education (1998). NCTE, New Delhi.
- UNESCO (2001). *Learning the way of Peace, “A Teacher Guide to Education for Peace”*. UNESCO, New Delhi.

Web Resources:

- Education for values in schools- a framework, NCERT: http://www.ncert.nic.in/pdf_files/Framework_educationCOMPLETEBOOK.pdf
- Position Paper National Focus Group on Education for Peace, NCERT
http://www.ncert.nic.in/new_ncert/ncert/rightside/links/pdf/focus_group/education_for_peace.pdf
- Values Education A Handbook for Teachers (2012), CBSE: http://cbseacademic.in/web_material/ValueEdu/Value%20Education%20Kits.pdf

Year	II	GENDER, SCHOOL AND SOCIETY	Course Credits	4
Semester	IV		Course code	SOE 02 04 14 C 3104
Learning Outcomes	<p>At the end of the course, the students will be able to:</p> <ul style="list-style-type: none"> ● Explain the concept of gender and it's related constructs, differentiate between sex and gender and judge gender roles. ● Point out the gender issues in schools & society level. ● Criticize the issues related to women and critically appraise the women role models. ● Critically judge the role of mass media and government pertaining to gender issues. 			
Course Content				
Unit -1	Introduction to Gender			
	<ul style="list-style-type: none"> ● Gender: Concept, difference between gender and sex ● Gender related concepts: Sexuality, feminism, equity and equality ● Gender stereotyping: Physical appearance, domestic behaviour, occupation and personality traits ● Gender roles through social institutions: Family, community, society 			
Unit -2	Gender and School			
	<ul style="list-style-type: none"> ● Gender bias in school enrolments, dropouts, household responsibilities and societal attitudes towards girls education ● Gender Issues in Schools: Bullying, eve teasing, sexual abuse ● Gender construction through curriculum and hidden curriculum ● Gender Sensitivity Pedagogy 			
Unit -3	Gender, Society and Media			
	<ul style="list-style-type: none"> ● Concept of Patriarchy and Matriarchy ● Issues related to Women/ Girl Child: Female foeticide and infanticide and, sex ratio, honour killing, dowry, property rights and divorce ● Role model for women: Phogat sisters, Ruma Devi, Dipika Karmakar, Gujan Saxena, Chhavi Rajawat ● Role of Print and Electronic Media in Gender Stereotyping 			
Unit -4	Provisions for Developing Gender Parity			
	<ul style="list-style-type: none"> ● Domestic Violence Act (2005) 			

	<ul style="list-style-type: none"> • Reservation for Women (2008) • Supreme Court Verdict about Transgender (2018) • National Policy for the Empowerment of Women, 2001
Transaction Strategies/ Teaching Learning Process	Lecture cum discussion, Tutorials, Brainstorming Session, Use of PPT, Film Shows (selected films), Assignments on different key areas of gender related issues given in syllabus through Google Group, Google Classroom and other online resources.
Practicum:	<ul style="list-style-type: none"> • Organizing debates on equality cutting across gender, class, cast and religion. • Case study on how students perceive role models in their own lives. • Debate on women role models in various fields with emphasis on women in unconventional roles. • Prepare an analytical report on portrayal of women in print and electronic media.
Suggested Readings:	<ul style="list-style-type: none"> • Chaudhary, D. R. (2007). <i>Haryana at cross roads, problems and prospects</i>. New Delhi: National Trust of India. • Chowdhary, P. (1994). <i>The Veiled Women. Shifting gender equations in rural Haryana (1980-1990)</i>. New Delhi: Oxford University Press. • Chowdhary, P. (2004). Caste panchayats and the policing of marriage in Haryana: Enforcing kinship and territorial exogamy. In <i>Contribution to Indians Sociology</i> (Vol. 38, (Jan to Aug 2004). • Dasgupta, J. (2015). <i>Gender gap: Men get away with too many privileges</i>. Available:http://www.dailyo.in/politics/gender-equality-men-get-too-many-privileges-no-country-for-women-india-gendergap-index/story/1/1478.html[Accessed 2015, September 14] • Dhar, A. (2012). <i>42 per cent of Indian children are underweight</i>. The Hindu. October 10. • FAO (2010-11). <i>The state of food and agriculture 2010-11: Women in agriculture</i>. Rome: Food and Agriculture Organization of the United Nations. • Gandhi, R. (2015). <i>Women in business: Can P2P lending bridge gender gap in access to capital</i>. The Times of India. June 19. • Gupta, S., & Dhull, K. (2018). <i>Gender, school and society</i>. New Delhi: Sudha Publication. • International Labour Organization. (2014). <i>Global employment trends 2014: Risk of jobless recovery</i>.

- Jammer, V. (1998). Attainment struggle to make healthier food choices: The importance of psychological and social factors. In *Psychological Health* (24 (9): 1003-20. 156)
- Kabir, N. (2014). *What works in reducing gender inequality*. Available : <https://oxfamblogs.org/fp2p/whatworks-in-reducing-genderinequality-greatoverview-from-naila-kabeer/> [Accessed 2015, January, 12]
- Lal, N. (2016). *India needs to save its daughters through education and gender equality*. Inter Press Services, March 4.
- Malhotra, S. (2015). *India in the world economic forum global gender gap report 2015*. Business Today, November 23.
- Misra, U. (2015). *How India ranks on gender parity- and why?* Indian Express November 4.
- Nair, S. (2015). *More gender inequality in India than Pakistan and Bangladesh*: UN. Indian Express December 15.
- Pachauri, G. (2018). *Gender, school and society*. Meerut: R. Lal Publication.
- Pulugurtha, S. (2008). How a lack of education adversely affects girls. In *Psychological Health* 26 (9): 1005-20. 158 Available: <http://empowermentinternational.org/2008/08/01/how-a-lack-of-educationadversely-affects-girls/>[Accessed 2015, January 12].
- Salve, P. (2015). #Selfie with Daughter:Can India save 23 million girls? Available <http://scroll.in/article/738068/selfiewithdaughter-can-india-save-23-million-girls>[Accessed 2015, June 23].
- The World Bank (2014). *Financial inclusion data*. Global Index. Available <http://datatopics.worldbank.org/financialinclusion/country/india> [Accessed 2014, November 21].
- Wodon, Q. (2014). *Eliminating child marriage to boost girls' education*. The World Bank. Available: <http://blogs.worldbank.org/education/eliminating-child-marriageboost-girls-education>[Accessed 2015, January 6].

Web Resources:

- *Dipa Karmakar*. Retrieved from https://en.wikipedia.org/wiki/Dipa_Karmakar
- *Gender-Responsive Life Skills-Based Education*. Retrieved from <http://unesdoc.unesco.org/images/0017/001781/178125e.pdf>
- *Gender, School and Society*. Retrieved from <http://www.bdu.ac.in/cde/docs/ebooks/BEd/II/GENDER,%20SCHOOL,%20SOCIETY%20AND%20INCLUSIVE%20SCHOOL.pdf>
- *Gunjan Saxena*. Retrieved from <https://starsunfolded.com/gunjan-saxena/>
- *How can teachers be more gender inclusive in the classroom?* Retrieved from <https://www.brookings.edu/blog/education-plus-development/2017/11/02/how-can-teachers-be-more-gender-inclusive-in-the-classroom/>
- *Ruma Devi Biography*. Retrieved from <https://hindi.oneindia.com/news/jaipur/ruma-devi-biography-in-hindi-know-her-journey-from-barmer-hut-to-europe/articlecontent-pf301835-573426.html>

Year	I	ENVIRONMENTAL EDUCATION	Course Credits	2
Semester	IV		Course code	SOE 02 04 18 C2002
Learning Outcomes	<p>At the end of the course, the students will be able to:</p> <ul style="list-style-type: none"> • Differentiate environment & environmental education and discuss various dimensions of it in terms of human life and society. • Critically analyze various issues, concerns and threats to environment and interpret different initiatives taken by govt to protect them. 			
Course Content				
Unit -1	Conceptual Understanding of Environment and Its Education			
	<ul style="list-style-type: none"> • Environment: Meaning, component and its types • Ecological System; Concept, Structure (Biotic and abiotic factors) its Function and Human interaction and dependency on the Environment • Concept, Components, Scope & need to promote of Environmental Education • Role of Education, School and Teacher in Environment Conservation 			
Unit -2	Issues, Concerns and Conservation of Environment			
	<ul style="list-style-type: none"> • Air, Water, Soil and Noise Pollution; Causes, Preventions and its impact on health, ozone depletion & Greenhouse effect. • Threats to natural resources and their conservation (Deforestation, Biodiversity & Wildlife), National River Conservation Plan (NRCP), NRLCP, Project Elephant, and Project Tiger, Forest conservation • Sustainable Development • Contribution of Prominent Indian Environmentalist: Sundarlal Bahuguna, M.S. Swaminathan 			
Transaction Strategies/ Teaching Learning Process	Lecture cum discussion, Lecture cum demonstration, use of laptop as audio-visual aid, Assignments on various topics, Presentation and group discussion, and presentations by Pupil Teachers will be encouraged.			
Practicum:				

- Organize environmental awareness activities and prepare a video: how to use a dustbin, Road safety, Forest as a life line, Plantation, use of first aid, Polythene.
- Prepare a report on the environment standards and protection act.
- Prepare a report on administrative bodies in India working for Protection of Environment/Forest/Wildlife.
- Prepare a report on Govt. Initiatives for preservation of Natural Resources.
- Govt. Initiatives for saving Rivers.
- Analysis of National Green Tribunal Act.
- Any topic suggested by the teacher.

Suggested Readings:

- Aggarwal, J. C. (2010). *Education for values, environment and human rights*. Delhi: Shipra Publications.
- Ardoin, N. M. (2009). *Environmental Education: A Strategy for the future*. New York: EGMA. Retrieved, from https://nmardoin.people.stanford.edu/sites/g/files/sbiybj4916/f/documents/EE_Strategy_for_the_Future.pdf
- Briceno, S. & Pitt, C.D. (Ed.). (2018). *New ideas in environmental education*. U.K: Routledge Publication.
- Catherine, J. (2011). *Environmental education*. New Delhi: Neel Kamal Publication.
- Gopal Dutt, N. H. (2014). *Environmental education*. New Delhi: Neel Kamal Publication.
- Govt. of India. Ministry of Environment and Forest National, Environment Policy. (2006). Retrieved from <http://moef.gov.in/wpcontent/uploads/2017/07/introduction-nep2006e.pdf>
- Govt. of India. Ministry of Environment and Forest. (2018). Retrieved from, http://moef.gov.in/wp-content/themes/moef-green/ebook/AR_2017-2018/AR_2017-2018.html
- Jain, K.C., & Garg, R. (2016). *Environment education*. Ludhiana: Vijaya Publication.
- Krishnamacharyulu, V. et al. (2017). *Environmental education*. New Delhi: Neel Kamal Publication.
- Nagarjan, K. (2017). *Environmental education*. Chennai: Sriram Publisher.
- Packiam, S. (2018). *Education for sustainable development*. New Delhi: Neel Kamal Publication.
- Palmer, P., & Neal, P. (2003). *The handbook of environmental education*. UK: Routledge Publication.
- Ramchandra, T. V. (2015). *Environment Management*. Bangalore: Energy & Wetlands Research Group Centre for Ecological Sciences Indian Institute of Science. Retrieved from <https://nptel.ac.in/courses/120108004/module1/lecture1.pdf>

- Ravinder, Ch. & Ramakrishna, A. (2017). *Environmental education issues and concerns*. New Delhi: Neel Kamal Publication.
- Reddy, V. Purushotham et al. (2013). *Environmental education*. New Delhi: Neel Kamal Publication.
- Saminathan, B. (2015). *Environmental education*. Retrieved from <http://www.bdu.ac.in/cde/docs/ebooks/B-Ed/II/ENVIRONMENTAL%20EDUCATION.pdf>
- Sharma, R. A. et. al. (2012). *Environmental education*. New Delhi: Surya Publication.
- Sharma, S. (2016). *Environment Education*. New Delhi: R. Lall Publication.
- United Nations. *Transforming Our world: The 2030 Agenda for sustainable Development*. New York City. Retrieved from <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>
- Verma, K. & Kaur, G. & Singh, P. (2010). *Introduction to environment*. New Delhi: Indira Gandhi National Open University.

Elective Courses (DCEC)

Year	I	VALUE AND ENVIRONMENTAL EDUCATION IN PHYSICAL EDUCATION	Credits	3
Semester	II		Course Code	SOE PES 030203 DCEC3003
Learning Outcomes		<p>At the end of the course, the students will be able to:</p> <ul style="list-style-type: none"> Explain the meaning, objectives and importance of value education. Define personal and communal value system and explain the concept of commitment to values. Restate the background of environmental education and sustainable development in schools. Classify and appraise the rural and urban health problems. 		
Course Content				
Unit -1		Introduction of Value Education		
		<ul style="list-style-type: none"> Meaning and Definition, Need, Importance and Objectives of Value Education. (Online) Need and Theories of Moral Values. (Online) Human Value foundation. Classification of Values: Basic Values of Religions. 		
Unit -2		Value System		
		<ul style="list-style-type: none"> Meaning and Definition of Value System. (Online) Personal Values - Consistency, Internally consistent, internally inconsistent, Judging Value System. Communal Values - Consistency, Internally consistent, internally inconsistent, Judging Value System. Commitment and commitment to values. (Online) 		

Unit -3	Environmental Education
	<ul style="list-style-type: none"> • Historical background, Meaning, Definition, Scope and Importance of Environmental Education. (Online) • Celebration of various days in relation with environment. • Plastic recycling & prohibition of plastic bag/cover. • Role of school in environmental conservation and sustainable development, Pollution free eco- system. (Online)
Unit -4	Concept of Rural and Urban areas
	<ul style="list-style-type: none"> • Rural and Urban Health Problems and improvement of Rural Sanitation. (Online) • Education Activity and Services of Urban and Rural Area. • Fairs & Festivals of Rural and Urban Area. • Meaning, Causes and Prevention of various pollutions.
Teaching learning process/Transactional Strategies	Lecture cum discussion, PowerPoint presentations, assignments, school observation and report, case study, and problem solving, brainstorming
Suggested Readings	<ul style="list-style-type: none"> • Athman, J., & Monroe, M. (2004). The Effects of Environment-Based Education on Students' Achievement Motivation. <i>Journal of Interpretation Research</i>. 9(1), 9-25. • Jadhav, H., & Bhosale, V. M. (1995). <i>Environmental Protection and Laws</i>. Himalaya Pub. House. • Jitendra Kumar Thakur (2019). <i>Value and Environmental Education</i>. Sports Publication. • Mohit Chakrabarti (2008). <i>Value Education: Changing Perspective</i>. Kanishka Publication. • Singh, B. (2018). <i>Value and Environmental Education</i>. Friends Publications. • Vandana MeshramIngle (2017). <i>Value and Environmental Education</i>. Educational Publishers and Distributors.

Course- VALUES AND ETHICS IN BUSINESS

Course Code- RLM-502

Credit- 3

Objective-

To familiarize the students with the issues and practices of values and ethics in Indian businesses.

Contents-

Unit-I:- Values impact in Business: Indian Value System and Values, Teaching from scriptures and tradition (Geeta, Ramayana, Mahabharata, Upanishads, Vedas, Bible and Quran).

Unit-II:- Business ethics: Meaning of ethics, Reasons of ethical problems in business, Moral issues in business: Worker's and employee's rights and responsibilities, Business Ethics in Indian Perspective.

Unit-III:- Ethics impact in Business: Ethical Issues in Capitalism and market systems, Ethics and social responsibility, Ethics and marketing, Intellectual property rights like designs, patents, trademarks, copy rights.

Unit-IV:- Corporate Strategy: Competitive Strategy, Benchmarking, Total Quality Management, Brand Building, Corporate Restructuring.

Suggested Readings-

1. K.V. Bhanumurthy and Usha Krishna. Politics, Ethics and Social Responsibility of Business. Pearson Education.
2. N. Balasubramanian. A Casebook on Corporate Governance and Stewardship. McGraw Hill Education.
3. Geeta D. Rani, and R.K. Mishra. Corporate Governance-Theory and Practice. Excel Books, New Delhi.
4. Erik Banks. Corporate Governance: Financial Responsibility, Controls and Ethics. Palgrave Macmillan.
5. Laura P Hartman. Abha Chatterjee. Business Ethics. Tata McGraw Hill.

Note: Latest and additional good books may be suggested and added from time to time.

Note: The list of cases, references and relevant articles will be provided by the faculty in the class.

Unit 1: Introduction to Environmental Science

Multidisciplinary nature of Environmental Studies. Definition, scope and importance, need for public awareness

Unit 2: Natural Resources

Renewable and non-renewable resources: Land resources: Land as a resource, land degradation, soil erosion and desertification. Forest resources: Use and over-exploitation, deforestation, case studies. Water resources: Use and over-utilization of surface and ground water

Unit 3: Ecosystems

Concept of an ecosystem. Structure and function of an ecosystem. Energy flow in the ecosystem. Food chains, food webs and ecological pyramids.

Unit 4: Bio-diversity and its Conservation

Definition: genetic, species and ecosystem diversity. Biogeographical classification of India. Hot-spots of biodiversity. Threats to biodiversity, Endangered and endemic species of India. Conservation of biodiversity.

Unit 5: Environmental Pollution

Definition, Causes, effects and control measures of: (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Nuclear hazards.

Unit 6: Environment policies & laws

Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and Control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness.

Unit 7: Human Population and Environment

Human population growth, Impacts on environment, human health and welfare. Environment Movements: Chipko, silent valley, Bishnois of Rajasthan.

Unit 8: Field Work

Visit to a local polluted site: Urban/Rural/Industrial/Agricultural.

Course- **ENVIRONMENTAL STUDIES**

Course Code- **RLM-303**

Credit-3

Objective-

This paper is aimed at providing a comprehensive knowledge of mechanism of Ecological System.

Contents-

Unit-I:- The multidisciplinary nature of Environmental Studies: Definition, scope and importance, need for public awareness.

Renewable and non-renewable resources: Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, Case studies.

Unit-II:- Concept of an ecosystem. Structure and function of an ecosystem. Energy flow in the ecosystem. Food chains, food webs and ecological pyramids. Ecological succession. Case studies of the following ecosystems: a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic (ponds, streams, lakes, rivers, oceans, estuaries).

Definition: genetic, species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, national and local levels. India as a mega-diversity nation. Hot-spots of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit-III:- Definition, Causes, effects and control measures of: (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Nuclear hazards. Solid waste management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies.

From Unsustainable to Sustainable development. Climate change, global warming, acid rain, ozone layer depletion. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and Control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness.

Unit-IV:- Human population growth, Impacts on environment, human health and welfare. Resettlement and rehabilitation of project affected persons; case studies. Environment Movements: Chipko, silent valley, Bishnois of Rajasthan. Environmental ethics: Issues and possible solutions. Role of Information Technology in Environment and human health. Case Studies.

Visit to a local area to document environmental assets:-river, forest grass land/hill/mountain. Visit to a local polluted site: Urban/Rural/Industrial/Agricultural. Study of common plants, insects and birds. Study of simple ecosystems: pond, river, hillslopes etc.

Suggested Readings-

1. Rajagopalan, R. Environmental Studies. Oxford University Press, New Delhi.
2. Kaushik, Anubha, C.P. Kaushik. Perspective in Environmental Studies. New Age International (P) Ltd. Publishers.
3. Joseph, Benny. Environmental Studies. Tata McGraw Hill Publishing Company Ltd. New Delhi.
4. Ubaroi, N.K. Environment Management. Excel Books, New Delhi.

Note: Latest and additional good books may be suggested and added from time to time.

Note: The list of cases, references and relevant articles will be provided by the faculty in the class.