

1.3.1. Syllabus of courses offered by the institution that address crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in transacting the Curriculum

PAPER BO222

ENVIRONMENTAL BIOLOGY, FOREST BOTANY, PHYTOGEOGRAPHY AND CONSERVATION BIOLOGY

144hrs (Theory 108 hrs; Practical 36 hrs)

Objectives:

- To learn the concepts on ecosystem and environment
- To impart knowledge on phytogeography and distribution
- To understand the concept, aim and principles of conservation
- To understand the causes and effects of pollution and climate change
- To create an awareness about the significance of genetic resources and its conservation

A. ENVIRONMENTAL BIOLOGY

54 hrs (3 hrs/wk)

1. Introduction to various approaches to the study of ecology based on levels of organization and habitat- interaction between environment and biota. Ecological niches, Concept of habitat and niche; niche width and overlap; fundamental and realized niche; resource partitioning; character displacement.
(5 hrs)
2. Physical environment; biotic environment; biotic and abiotic interactions. Concepts and dynamics of Ecosystems: Types – Freshwater, marine and terrestrial. Components of ecosystem, application of Law of thermodynamics, food chain, food web, trophic levels, ecological pyramids and recycling - energy flow and transaction. Productivity and Biogeochemical cycles. Development and evolution of ecosystems. Ecosystem management.
(8 hrs)
3. Characteristics of a population; population growth curves; population regulation; life history strategies (r and K selection); concept of metapopulation – demes and dispersal, interdemic extinctions, age structured populations.
(4 hrs)
4. Nature of communities; community structure and attributes; levels of species diversity and its measurement; edge effect and ecotone.
(4 hrs)
5. Ecosystem: Structure and function; energy flow and mineral cycling (CNP); primary production and decomposition; structure and function of some Indian ecosystems:

Grassland, terrestrial, forest, and aquatic (fresh water, marine, estuarine). Major terrestrial biomes; theory of island biogeography; biogeographical zones of India

(7 hrs)

6. Species interactions - types of interactions, interspecific competition, herbivory, carnivory, symbiosis. (4 hrs)

7. Study of climate, their distribution and adaptation to the environment. Deserts (dry and cold) Tundra, Grassland, Savannah, Temperate forests, Tropical rain forests, Mangrove. (3 hrs)

8. Ecological concepts of species: Autecological level (genecology), Synecological level (Ecosystem level). Ecads (Ecophenes), Ecotypes, Ecospecies. (4 hrs)

9. Ecological succession: Types; mechanisms; changes involved in succession; concept of climax. (4 hrs)

10. Disaster management, Global environmental problems- ozone depletion, greenhouse effect, global warming, acid rain, nuclear hazards – Climate change, Eutrophication. (5 hrs)

11. Applied ecology: Environmental pollution; global environmental change; biodiversity-status, monitoring and documentation; major drivers of biodiversity change; biodiversity management approaches. Current environmental issues in India, Environmental education and awareness. Green Protocol. (6 hrs)

Practical

36 hrs (2 hrs/wk)

1. Analysis of vegetation - Quadrat /line transects to find frequency and interpret the vegetation in terms of Raunkier's frequency formula.
2. To find out the dissolved oxygen content in the given water sample (pond, lake, well etc).
3. To find out the primary production in the given water sample using light and dark bottle method.
4. Estimation of carbonate and bicarbonate content in water samples.
5. Estimation of total organic carbon content in the given soil sample
6. Visit to a local area to document environmental assets river/ forest/grassland/hill/mountain
7. Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.

Report of the items 6 and 7 should be included in the record.

References

1. Krohne D. T. 2017 Ecology: Evolution, Application, Integration. Oxford Univ. Press.
2. Poul V.I. 2013. Biodiversity: Issues, Impact, Remediations and Significance 1st Edition. V L Media Solutions

3. Stiling, P. 2012. Ecology: Global Insights and Investigations, McGraw- Hill Companies, NewYork.
4. Sharma, P. D. 2004. Environmental Biology, Himalaya Publications.
5. Kumar, H. D. 2000. Modern Concepts of Ecology. Vikas Publishing House, New Delhi.
6. Aradhana, P. S. (Ed). 1998. Environmental Management, Rajat Publications, Delhi.
7. Trivedi, R. K. & Goel, P.K. 2003. Introduction to Air pollution, Techno-Science Publication.
8. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001. Environmental Encyclopedia, Jaico Publ. House, Mumbai.
9. Chapman J. & Reiss M. 2000. Environmental Biology. Cambridge University Press.
10. Agarwal, K.C. 2001. Environmental Biology, Nidi Publ. Ltd. Bikaner.
11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi.
12. Brunner, R.C. 1989. Hazardous Waste Incineration, McGraw Hill Inc.
13. Odum, F. E. 1971. Fundamentals of Ecology. W.B. Saunders and Company.

B. FOREST BOTANY

9 hrs (½ hr/wk)

1. Forests- definition, study of various forests of the world and India. (1 hr)
2. Forest products – Major and minor with reference to Kerala. (2 hrs)
3. Influence of forest on environment. (2 hrs)
4. Consequence of deforestation and industrialization. (2 hrs)
5. Sustainable use of bioresources. (2 hrs)

References

1. Shanmughavel, P. 2014. Forest Botany, Pointer Publishers.
2. Bor, N.L. 2008. A Manual of Indian Forest Botany International Book Distributors.
3. Singh M.P., Singh J. K., Mohanka N. & Sah R.B. 2007. Forest Environment and Biodiversity. 2nd Edition. Daya Publishing House.
4. Puri, G. S. 1989. Indian Forest Ecology, Vol. II, Oxford & IBH Co. Pvt. Ltd.
5. Agarwal, V. P. 1985. Forest in India, Oxford & IBH.
6. Champion, G. H. & Seth, K. A. 1968. A Revised Survey of Forest types of India.

C PHYTOGEOGRAPHY

18hrs (1 hr/wk)

1. Define – Phytogeography - static and dynamic phytogeography. (1 hr)
2. Geological history and evolution of plant life. (3 hrs)

3. Factors of plant distribution. Theories concerning present and past distributions-continental drift, glaciations, existence of land bridges and their effect on plant distribution. (4 hrs)
4. Phytogeographic regions of the world (Vegetational belts). (4 hrs)
5. Soil, climate, flora, and vegetation of India. (4 hrs)
6. Scope and relevance of GIS and Remote sensing (2 hrs)

References

1. Cox C.B. and Moore P.D. & Ladle R. 2016. Biogeography: An Ecological and Evolutionary Approach. Wiley-Blackwell.
2. Huismann, O. & de By R. A. (Editors) 2009. Principles of geographic system- An introductory text book. ITC, The Netherlands.
3. Schatz, G.E. 1996. Malagasy / Indo-Australo-Malesian Phytogeographic Connections. <http://www.mobot.org/MOBOT/Madagasc/biomad1.html>
4. Bharucha, F. R. 1984. A Text Book of Plant Geography of India. Oxford University Press.
5. Puri, G.S. 1983. Indian Forest Ecology, Vol. I, II. Oxford, New Delhi.
6. Ronald Good. 1964. The Geography of Flowering Plants. Longmans.
7. The International Biogeography Society <http://www.biogeography.org/>
8. Tree of Life. URL: <http://tolweb.org/tree/phylogeny.html>

D. CONSERVATION BIOLOGY

27 hrs (1.5 hrs/wk)

1. Concept, aim and principles of conservation. (1 hr)
2. Convention on Biological Diversity - Objectives – Definition of biodiversity – Roles of IUCN (IUCN), MAB - Red data book - Threatened categories of plants. Conservation strategies - *In-situ* and *Ex-situ* conservation - Sustainable development. Biosphere reserves, Wild life sanctuaries and National parks in India with special reference to Kerala. (4 hrs)
3. Conservation biology: Principles of conservation, major approaches to management, Indian case studies on conservation/management strategy (Project Tiger, Biosphere reserves). (3 hrs)
4. Agriculture and conservation of resources. Novel agricultural technologies – Nitrification inhibitors, Wind mills for irrigation, Solar energy for drawing ground water, Biogas for cooking and slurry left to be used as fertilizers. (3 hrs)

5. Urbanization and Conservation – Planning for environmentally compatible human settlements and strategy for sustainable industrial development. (2 hrs)
6. Conservation and energy – Causes of energy crisis, Conventional and Non-conventional energy sources. (2 hrs)
7. Plant as a source of renewable energy. Development of non-polluting energy systems – Solar energy, Wind energy, energy recovery from solid wastes. (2 hrs)
8. Conservation of Physical resources. (Mention all physical factors of environment). (2 hrs)
9. Afforestation- social forestry, agroforestry, International Biological programme (IBP), Man and Biosphere (MAB), IUCN, world environment day, wild life preservation act (1972), Indian forest conservation act (1980), United Nations Environmental Programme, Environment protection Act. (6 hrs)
10. Environmental awareness – role of Government and NGOs- Gaia hypothesis. (2 hrs)

Practical

1. One day visit to ecologically significant location (National parks/ mangroves/estuaries).
2. Each student should plant and maintain at least two plants in the college botanic garden or premises, belonging to IUCN category, and document the same.

References

1. Shobh Nath Singh 2015. Non Conventional Energy Resources. 1st Edition. Pearson.
2. Tasneem Abbasi, S. A. Abbasi 2011. Renewable Energy Sources Their Impact on Global Warming and Pollution PHI Learning Pvt. Ltd
3. Mahendra Chaturvedi 2010. Biodiversity and Conservation 1st Edition D.P.S. Publishing House
4. Van Dyke, F. 2008. Conservation Biology, foundation, concept, applications, Springer.
5. Hunter, M.L. Jr. and J.P. Gibbs. 2007. Fundamentals of conservation biology, 3rd edition. Blackwell Publishing, Oxford, United Kingdom, 497pp.
6. MacDonald & Katrina Service. 2007. Key Topics in Conservation Biology, Blackwell Publishing.
7. Bharucha & Jayalaxmi Rai (2002) The Biodiversity of India. Erach Grantha

SEMESTER-V

ENVIRONMENTAL STUDIES AND PHYTOGEOGRAPHY

Course code: BO 1542 Number of Credits : 4

Number of contact hours : Lecture: 90 hrs; Practical: 36 hrs; Total: 126 hrs

Distribution of Hours	Theory	Practical
Environmental Studies	72 hrs	36 hrs
Disaster Management	09 hrs	00 hrs
Phytogeography	09 hrs	00 hrs
Total	90 hrs	36 hrs

Aim of the course: To inculcate environmental awareness among students for protecting the Nature.

Objectives:

1. To create awareness about ecosystem and Natural resources.
2. To generate knowledge about importance of Biodiversity conservation
3. To understand the need to mitigate pollution and strategies for disaster management
4. To impart knowledge about phytogeographical regions

MODULE-I

Natural resources and its conservation

12hrs

5. Natural Resources - Renewable and Non-renewable - Land & Soil, Water, Energy, Minerals, Food and agriculture, Forests, Plants & Wild life resources. Degradation of natural resources - Land degradation, degradation of water resources, Loss of flora and fauna; Causes – population explosion, over exploitation, deforestation, agriculture mismanagement, desertification, overgrazing, soil erosion, mining, urbanization and industrialization- change in land use, depletion of water resources.
6. Conservation of Natural resources and sustainable life styles.
Land and soil- Afforestation, regeneration of wasteland
Water - Rain water harvesting, ground water dams
Energy - Promoting use of renewable resources-solar, tidal and wind; biodiesel, biofuels.
Forests- Reforestation, Community forestry programmes

MODULE- II

Ecosystems

22 hr

1. Ecosystems - Concept, definition, structure and function; components- biotic and abiotic; energy flow
2. Food chains -Food web & ecological Pyramids, biogeochemical cycles - Carbon and Phosphorous cycle
3. Ecological succession-Definition, primary and secondary succession, climax

SEMESTER-V

concept, hydrosere and xerosere.

4. Plant adaptations- Morphological, anatomical & physiological adaptations of – Hydrophytes, Xerophytes, Halophytes, Epiphytes, Parasites
5. Introduction- types, characteristic features, structure and functions of the following ecosystems.
6. Forest ecosystem, 2. Grassland ecosystem, 3. Desert ecosystem, 4. Aquatic ecosystems- Ponds, Streams, Rivers, Oceans, Estuaries (brief account only)

MODULE-III

Biodiversity and its conservation

18hrs

1. Introduction, Definition- genetic, species and ecosystem diversity; biodiversity index (Shannon index)
2. Hot-spots of biodiversity; India as mega-diversity nation.
3. Threats to biodiversity: land use changes & habitat destruction, poaching of wild life- hunting & export, Overuse of pesticides, invasive species.
4. IUCN, Red data Book; Extinct and Threatened species- endangered & Rare; Endemic species of Western Ghats.
5. Conservation of biodiversity: In-situ (National parks and Wild life sanctuaries) and Ex-situ conservation (botanical gardens); Biosphere Reserves & World Heritage Sites in India-Ramsar sites, Chilka lake.
6. Global initiatives in biodiversity conservation- Stockholm Conference, Montreal Protocol, Convention on Biological diversity Regional initiatives- Chipko movement, National Biodiversity Authority (NBA), Access and Benefit sharing (ABS), A brief account on conservation efforts in Kerala- Kerala State Biodiversity Board (KSBB), People Biodiversity Register.

MODULE-IV

Environmental pollution

20hrs

1. Definition, causes, effects and control measures of – 1. Air pollution, 2. Water pollution, 3. Soil pollution, 4. Marine pollution, 5. Noise pollution, 6. Thermal pollution.
2. Solid Waste Management- waste minimization, Recycling and Reuse, Consuming environment friendly products. E-waste management.
3. Environmental Legislations - Environment protection Act (1986); Air [prevention and control of pollution] Act (1981; Amended 1987); Water [prevention and control of pollution] Act (1974; Amended 1988); Wildlife Protection Act (1972); Forest conservation Act (1980). (Scope and relevance only)
4. Environmental Organisations –UNEP, IPCC, WWF, Central Pollution Control Board

MODULE-V

Disaster management

09hrs

1. Introduction, Definition and terminologies; scope and concept of disaster management.
2. Natural and Environmental disasters-a brief description of the following disasters-

SEMESTER-V

earth quake, flood, coastal disasters, landslides, tsunami(role of mangroves in controlling tsunami disaster), cyclone, dam collapse, nuclear disaster, chemical disaster, biological disaster.

3. Environmental Issues - Global warming and sea level rise, Acid rain, Ozone layer depletion- causes and effects.
4. Disaster management – four phases – mitigation, preparedness, responses, recovery. Emergency procedures and warning systems, application of GIS (brief account only).

MODULE-VI

Phytogeography

9 hrs

1. Concept & definition, species distribution- continental drift, continuous and discontinuous distribution.
2. Vegetation in India – Forests- tropical, temperate, sholas, sub alpine, alpine, mangroves & Grass lands.
3. Phytogeographical regions of India - Western and eastern Himalayas, Desert, Western Ghats, Deccan Peninsula, Gangetic Plain, North East India, Coasts & Islands

Practical

36hrs

1. Visit a local polluted site and report major pollutants.
2. Visit a mangrove vegetation and report diversity
3. Study of ecological and anatomical modifications of Xerophytes, Hydrophytes,
4. Halophytes, Epiphytes and Parasites.
5. Observation and study of different ecosystems mentioned in the syllabus.
6. Phytogeographical regions of India- Photos/Diagrams

REFERENCE

1. Abbassi, T. & Abbassi, S. A. (2010). Remote sensing, GIS and Wetland management, Discovery Publishing House, Pvt. Ltd.
2. Ahluwalia VK and Sunitha Malhotra, (2009). Environmental science, Ane Books Pvt.Ltd.
3. Ambasht R.S. (2008) Text book of Plant Ecology, Students and Friends &Co. Varanashi.
4. Anji Reddi M. (2000). Remote sensing and Geographic Information System. B.S. Publications, Hyderabad.
5. Aravind Kumar (2009). Pollution and Biodiversity, Biosocial aspects, , Daya Publishing House
6. Asthana D.K and Meera Asthana, (2006). A Text Book of Environmental Studies, S. Chand & Company Ltd. New Delhi.
7. Chandoco.S Weaver and Clements (1949) Plant Ecology, McGraw Hill Publications, New York.
8. Chang Kang – Tsung (2007). Introduction to GIS. Tata McGraw Hill Education.
9. Chapman J.L. (2006). Ecology-Principles and Application. Cambridge UniversityPress India Pvt. Ltd
10. Chrisman and Nicholas (1997). Exploring GIS, John Wiley and Sons.

SEMESTER-V

11. Clarke K. C. (1997). Getting started with Geographical Information System. Prentice Hall, New Jersey.
12. Cutter Susan L. (1999). Environmental Risks and Hazards. Prentice Hall, New Delhi.
13. David Alexander, (1993). Natural disasters, UCL Press, London.
14. Demers, Michael N. (1996). Fundamentals of GIS. John Wiley & Sons (Pub.)
15. Edward Bryant, (2005). Natural Hazards, Cambridge University Press.
16. Erach Bharucha (2013) Text book of environmental Studies for undergraduate Courses, Universities Press, University Grants Commission
17. Fisher Peter (1995). Innovations in GIS. Taylor and Francis (Pub.), New York.
18. Gupta Harsh K. (2003). Disaster management, Universities Press (India) Pvt. Ltd.
19. Heywood I., S. Cornelius, S. Carver (2011). An Introduction to GIS , 4th Edn., Prentice Hall.
20. Hill Mc Jurie, Ian Mason and C. Kilburn. (2002). Natural Hazards and Environmental Change. Oxford University Press, New York.
21. Jenson J.R. and R.R. Jensen (2012). Geographic Information Systems. Pearson Inc.
22. Krishnamoorthy K V (2012) An Advanced text book of Biodiversity Conservation, Principles and Practise, Oxford & IBH publishers Co Pvt. Ltd
23. Kumaresan B. (2009). Plant Ecology & Phytogeography– Rastogi Publications :
24. Martin, D.(1991). Geographic Information Systems and their socio economic Applications. Routledge, N.Y.
25. Misra S P and Pandey S N. (2009). Essential Environmental studies, Ane Books Pvt. Ltd
26. Odum Eugene P (2018)– Fundamentals of Ecology, 5th Edn. Philladelphia & Saunders, Tokyo, Toppon.
27. Patrick L. Abbott, (2008). Natural disasters Mc Graw Hill International Edition.
28. Periasamy, K. (1965) . Elements of Plant Ecology, M.K.Publications
29. Prithipal Singh, (2007). An Introduction to Biodiversity. Ane Books Pvt.Ltd
30. Rajib Shaw and Krishnamurthy R. R., (2009). Disaster Management, Universities Press (India) Pvt. Ltd., Hyderabad.
31. Ronald Good (1974). The Geography of Flowering Plants 4th edition Addison-Wesley Longman Ltd
32. Sharma, P.D. (1981) Elements of Ecology , Rastogi's Company Ltd., Publications
33. Stephen Wise. (2002). GIS Basics, Taylor and Francis, New York.
34. Thomas M. Lillesand and Ralph W. Kiefe (1987). Remote sensing and Image interpretation 7th Edn., John Wiley and Sons, New York.
35. Vaidya K. S. (1987). Environmental Geology. Tata Mc Graw Hill (Pub.).
36. Vashista P.C (1984) Plant Ecology Edu. Vishali Publications.
37. Verma and Agarwal (2010) – Principles of Ecology, S. Chand and Co.
38. Verma, P. S. and V. K. Agrawal. (2004). Cell Biology, Genetics, Molecular Biology, Evolution and Ecology. S. Chand & Company Ltd., New Delhi.
39. White G.H. (ed). (1999) Natural hazards – local, national, global: Oxford University Press.

EXPECTED OUTCOME

- ☒ Develops awareness about natural resources, its conservation and importance of sustainable lifestyles.

Global warming (Green House Effect) 310-319
 Introduction, Chlorine depletion and ozone hole, Global concern, Check on Global warming

Conservation of Natural Resources 320-356

Mineral resources, Forest resources, Wild life resources, Water resources, Soil resources, Marine resources, Food and Agriculture resources, Energy resources, Different sources of Energy, other resources of energy, Chipko Movement.

Forests and Forest Management 357-374

Forest and its ecological significance, Deforestation, its causes, Forest Management, Social Forestry, Agroforestry.

Impact of Pollution on Vegetation 375-383

Introduction, Seed germination and general growth, Effects of different pollutants on vegetation, Control of pollution through vegetation

Natural Depletion of Vegetation and Endangered Economic Plants of India 384-396

Conservation of endangered plants, Lists of rare, endangered and threatened economic plants of India.

Biodiversity 397-406

Definition, Significance of biodiversity, Types of biodiversity, Depletion of biodiversity, Conservation of biodiversity.

ETHNOBOTANY

1. Ethnobotany 407-423

Definition and concepts, History of Development of Ethnobotany, Ethnic groups of India, Ethnobotany and conservation of Natural Resources, Plants of Ethnobotanical importance, Tribal: Food and Food plants, Ethnomedicinal plants, Narcotic plants

SOIL SCIENCE (E)

1. The Soil 427-438

Definition, Components of soil—(i) Mineral components, (ii) Organic matter or Humus, (iii) Soil atmosphere, (iv) Soil water, (v) Biological system of the soil or soil micro-organisms, Role of soil organisms.

2. Origin and Formation of Soil 439-451

Introduction, Different types of soil-forming rocks, Weathering processes—Physical weathering, Chemical weathering and

23. Properties of Soils

452—484

A—Physical properties (i) Soil separates and Soil textures, (ii) Structure of soil, (iii) Weight and density, (iv) Porosity of soil, (v) Permeability of soil, (vi) Soil Colour, (vii) Soil temperature, (viii) Soil Plasticity, Cohesion and Adhesion.

B—Chemical properties of soils (i) Inorganic matters of soil, (ii) Organic matters in soil, (iii) Colloidal properties of soil particles, (iv) Soil reactions and Buffering action, Acid soils and Basic soils.

24. Principles of Soil Classification and Soil Surveys 485—501
Chief Soil Types of India

Classification of Soils : Aims of soil classification and main classificatory units of soil classification; soil orders, suborders, great soil group, series, types and phases, some soil classifications.

Soil surveys—main objectives and different types of soil surveys, and Chief soil types of India.

25. Soil Erosion and Soil Conservation 502—516

Introduction and factors affecting fertility of soil.

Soil erosion—Definition and types of erosion.

Agencies causing soil erosion : (a) Climatic—Water and wind. (b) Biotic agencies.

Soil conservation—Aims of soil conservation, Practical methods of soil conservation—(I) **Biological** : (i) Agronomic practices, (ii) Agrostological, (iii) Dry farming practices.

(II) **Engineering or mechanical methods** :

(i) Basin leaching (ii) Pan breaking, (iii) Sub-soiling, (iv) Contour terracing, (v) Contour trenching, (vi) Terrace outlet, (vii) Gully and Ravine Control, (viii) Ponds and reservoirs and (ix) Stream bank protection.

26. Soil Fertility—Its Meaning, Causes and Maintenance 517—526

Definition of soil fertility, Soil fertility factors, Maintenance of soil fertility.

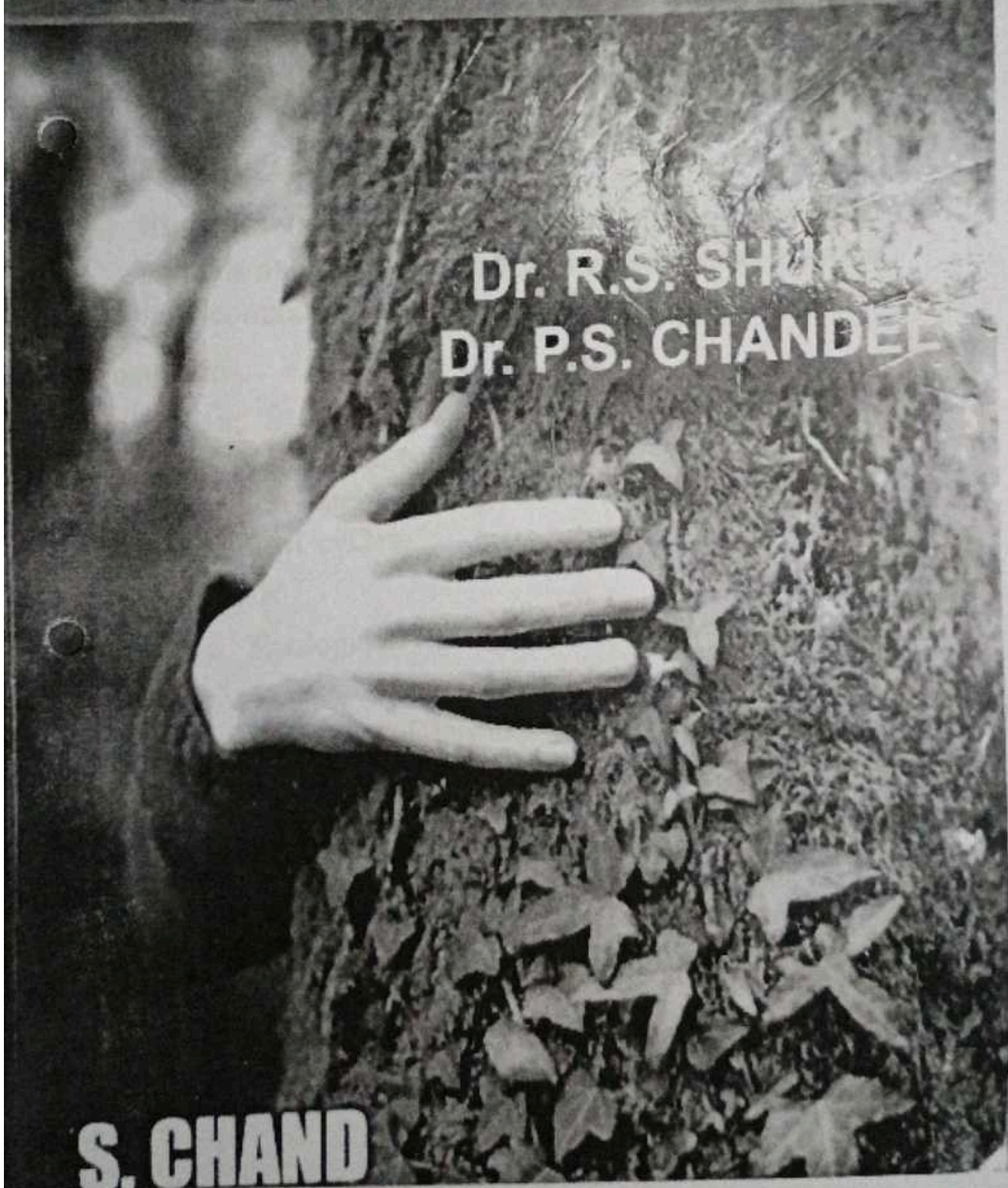
27. Soil Degradation and Wasteland 527—534

Definition of soil degradation and its causes, National wasteland and development board.

Index 535—544

A TEXTBOOK OF PLANT ECOLOGY

INCLUDING
ETHNOBOTANY AND SOIL SCIENCE.



Dr. R.S. SHUKLA
Dr. P.S. CHANDEL

S. CHAND

1. **Ecology**

Definition, Plant ecology and its divisions, Different fields of ecology, Plant ecology and other branches of science, Application of plant ecology.

Pages
3-6

2. **The Environment**

Introduction, Main environmental or ecological factors.

7-54

(i) **Climatic factors** : Light, Temperature, Precipitation and atmospheric humidity, Atmosphere and air, Microclimate or microenvironment.

(ii) **Soil, edaphic factors or soil factors** : Soil components and their effects on vegetation.

(iii) **Physiographic factors**

(iv) **Biotic factors** : Interaction between plants and local animals and man, Interactions between plants growing in a community and plants micro-organisms.

3. **Ecosystem**

Definition, Structure of ecosystem, Components of ecosystem, Function of ecosystem. Major ecosystems Process within the ecosystem, Energy and its flow in ecosystem, Biogeochemical cycles.

55-87

4. **Autecology**

Definition, Ecological life history of species, Population Ecology.

88-103

5. **Ecological Genetics of Population or Gene Ecology**

Definition, Ecotypes : Its characteristics, Formation and origin of new ecotypes, Delimitation of ecotypes, Significance of ecotypes, Ecoclines.

104-109

6. **Synecology or Study of Communities**

Definitions, Classification units of vegetation, Community composition, Classification of Community, Study of plant community structure.

110-141

S.

7. **Plant Succession**

142

Definitions, Causes of succession, Succession and climax concept, Monoclimax and polyclimax theories, Kinds of succession, Hydrosere, Xerosere (a succession on bare rock surface), Some examples of secondary succession or sabbetas

8. **Plant Adaptations**

[54-19]

Introduction and ecological classification of plants

Hydrophytes :

Definition, classification of hydrophytes, Factors affecting the plants in the aquatic environment, Hydrophytic adaptations— (a) Morphological, (b) Anatomical modifications, Comparison of sub-merged, floating and amphibious plants

Xerophytes :

Definition of Xerophytes, Classification of Xerophytes— Drought escaping plants, Drought enduring plants and Drought resistant plants, Xerophytic adaptations— Morphological, Anatomical and Physiological adaptations

Mesophytes :

Definition and classification of mesophytes, Communities of grasses and herbs, Communities of wood plants (Bushlands and forests).

9. **Epiphytes**

194-198

Definition, Distribution, Important features—Morphological and Anatomical features, Types of Epiphytes.

10. **Halophytes and Mangrove Vegetation**

199-214

Definition, Examples, Distribution, or Plant Geography, Distribution, Theories of discontinuous distribution, Important characters—Habit, External morphology and anatomical features, succession of mangrove vegetation in sea coast.

11. **Principles of Phytogeography, Climate, Vegetation and Botanical Zones of India**

215-246

Phytogeography, Plant Geography, Distribution, Theories of discontinuous distribution, Factors affecting distribution of species, Climate and vegetation of different botanical regions of India.

12. **Ecological Indicators**

247-255

Characteristic features, Different types.

Core Course I: CO 1141 – ENVIRONMENTAL STUDIES

No. of instructional hours per week: 4

No. of Credits: 3

Aim of the course: To develop knowledge and understanding of the environment and enable the students to contribute towards maintaining and improving the quality of the environment.

Course objectives:

1. To enable the students to acquire basic ideas about environment and emerging issues about environmental problems.
2. To give awareness about the need and importance of environmental protection

Module I: Environmental studies – meaning – scope – importance (4 hrs)

Module II: Ecology and Ecosystems, Biodiversity and its Conservation, and Natural resources – meaning of ecology – structure and function of an ecosystem – producers – consumers – decomposers – energy flow in the ecosystem – ecological succession- food chain – food webs and ecological pyramids . Ecosystem – concept– types of ecosystems – structure and functions of forest ecosystem, grass land ecosystem- desert ecosystem, aquatic ecosystem. Biodiversity and its conservation- introduction- definition- genetic, species and ecosystem diversity- value of biodiversity – biodiversity at global, national and local levels – India as a mega-diversity nation – hot-spots of diversity – threats to diversity – conservation of diversity in situ, ex-citu. Natural resources- features- air resources, forest resources, water resources, mineral resources, food resources- energy resources, land resources- over exploitation of natural resources- consequences- conservation of natural resources- role of an individual in conservation of natural resources (25 Hrs)

Module III: Industry and environment - pollution – environmental pollution – soil pollution – air pollution – water pollution – thermal pollution – noise pollution – causes, effect and control measures – waste management – waste minimisation through cleaner technologies – reuse and recycling - solid waste management. (18 hrs)

Module IV: Social issues and environment – Unsustainable to sustainable development – urban problems related to energy - water conservation - water harvesting - resettlement and rehabilitation of people- environment ethics-waste land reclamation-consumerism and waste products. (15 hrs)

Module V: Human Population and environment – population growth – variation among nations – population explosion – environment and human health – human rights – value education – Women and child welfare. (10 hrs)

Note: All students must visit a local area to document environmental issues and prepare a brief report on the same identifying issues involved and suggesting remedies. (This will be a part of the internal marks. i.e. for EVS the internal marks = attendance – 5 marks + test paper – 5 marks + field study report – 10 marks)

Books recommended

- Misra.S.P and Pandey .S.N. *Essential Environmental Studies*, Ane Books India, New Delhi.
Kiran B. Chokkas and others. *Understanding Environment*, Sage Publications New Delhi.

SEMESTER - II**Foundation Course II: CO 1221-INFORMATICS AND CYBER LAWS**

No. of instructional hours per week: 4

No. of credits: 3

Aim of the course: To update and expand informatics skills and attitudes relevant to the emerging knowledge society and to equip the students to effectively utilise the digital knowledge resources.

Module IV: CYBER WORLD - Cyber space, information overload, cyber ethics, cyber addictions, Digital Signatures and Digital Certificates – authentication of electronic records- IT Act 2000– electronic contracts – electronic evidences (an overview) (12 hrs.)

Module V: CYBER CRIMES – Nature and scope of cybercrimes, - cyber offences under IT Act, Cyber Terrorism, Types of Cybercrimes. (15 hrs.)

Books Recommended:

1. Ramesh Bangia. *Learning Computer Fundamentals*, Khanna Publishers, New Delhi.
2. Rajaraman, *Introduction to information Technology*, PHI, New Delhi.

SEMESTER - III**CORE COURSE V: CO 1341-ENTREPRENEURSHIP DEVELOPMENT**

No of instructional hours per week: 4 (72 hrs)

No. of credits: 3.

Aim of the Course: To equip the students to have a practical insight for becoming an entrepreneur.

Course Objectives:

1. To familiarize the students with the latest programmes of Government in promoting small and medium industries.
2. To impart knowledge regarding starting of new ventures.

Module V: Launching of Small Business: - Finance and Human Resource Mobilization- Operations Planning-Market and Channel Selection-Growth Strategies-Product Launching-Incubation, Venture Capital, startups-Techno parks-Industrial Estates-Incentives-Institutional Support Subsidies-DIC-SIDBI-SISI-KVIC-NIESBUD-Singlewindow - Margin Money-Seed Capital-Registration- Industrial Sickness - Causes and Prevention - Rehabilitation - Effective Management of Small Business.

(15 hrs)

Recommended Practicals:

1. Interview a local entrepreneur and acquire practical knowledge in starting business.
2. Visit any institution supporting entrepreneurship and prepare visit report.
3. Generate unique project ideas and prepare feasibility report.
4. Prepare a project report for establishing a new business.

Complementary Course III: CO 1331 - E-Business

No of instructional Hours per week: 4

No. of credits: 3

Aim of the Course: To expose the students to e- business and its potentialities.

Course Objectives

1. To provide students a clear-cut idea of e-commerce and e-business and their types and models.
2. To acquaint students with some innovative e-business systems.
3. To impart knowledge on the basics of starting online business.

(14 hours)

Module 4: E-Governance Meaning, Definition, Models – G2G, G2B, G2C. ICT & E-Governance, Benefits and risks of E-Governance. Successful e-governance initiatives in Kerala and other Indian states. E-citizen, E-service – e-filing, E-society.

(18 hours)

Reference books

1. *Electronic Commerce: A Managerial Perspective*, Turban, E. et al., Prentice Hall
2. *Electronic Business and Electronic Commerce Management*, Dave Chaffey, Prentice Hall
3. *E-learning Tools and Technologies*: Horton and Horton, Wiley Publishing
4. *Electronic Commerce*, Bharat Bhaskar. Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
5. *E-Governance*, Pankaj Sharma. APH Publishing Corporation, New Delhi
6. *E-Business Fundamentals*, Bansal S.K. APH Publishing Corporation, New Delhi.

SEMESTER VI**Core Course XIV: CO 1641 AUDITING**

No. of credits:4

No of instructional hours per week:4

Aim of the Course: The acquaint the students with the principles and practice of auditing**Course Objectives**

1. To provide students the knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards.
2. To familiarize students with the audit of Companies and the liabilities of the auditor.

Module 4: Auditors of Joint Stock Companies. As per Provisions in the Companies Act 2013 -
Auditor's qualifications – disqualifications – appointment – remuneration – removal – status -
Removal of an auditor – powers, duties and liabilities of auditor with relevant legal judgments.
Audit Report–types. (17 Hrs)

Module 5: Investigation Meaning investigation vs. auditing

SEMESTER I

Paper 1: CO 211- BUSINESS ETHICS AND CORPORATE GOVERNANCE

Objectives:

1. To convey basic understandings on the theories of Business Ethics
2. To provide a understanding on Corporate Governance practices and the provisions of the Companies Act relating to corporate governance

Module 1: Business Ethics and Ethical Practices: Ethics – Sources- Importance - factors influencing Business Ethics – Benchmarks on code of Ethics – Ethics Committees – Training Programmes – Ethical Decision Making – Ethics in Finance - Marketing and HR (15 Hrs)

Module 2: Organization Culture: Features – Building and Maintaining Organization Culture – Organizational Socialization – Managing cultural Diversity – Work Ethics – Work Culture – Quality of Work Life – Work Life Balance – areas Improving Work Life Balance – Strategies of Work Life Balance (20 Hrs)

Module 3: Corporate Governance: Importance – Objectives – Basic Ingredients of Corporate Governance – Principles - Theories – Phases of development of Corporate Governance in Global and Indian Perspectives – Code of Corporate Governance – Committees on Corporate Governance (Global and Indian) (15 Hrs)

Module 4: Corporate Social Responsibility : CSR under Companies Act 2013 – Scope – Relevance – Importance – Areas of CSR – Arguments for and against CSR – Ackerman's model of CSR – SEBI – Clause 49 of listing agreement – Evaluation of Corporate Governance of a Company – Methods – Shareholder Value – EOCE, PAT, EPS, TSR, MVA, EVA and HVA - Corporate Philanthropy – Corporate Citizenship – Social Audit (25 Hrs)

Module 5: Corporate Image and Excellence : Corporate image – building corporate image – Importance – Corporate Excellence – importance – Measures to achieve

corporate excellence – New initiatives on corporate excellence - Role of Chairman –
Qualifications – Power – Duties and Responsibilities – Board Committees – New
Directions (15Hrs)

References:

1. Laura P Hartman, Perspectives in Business Ethics, Mc Graw Hill International
2. George A Steiner and John F Steiner, Business , Government and Society, Mc Graw Hill International
3. SK Chakraborty, Ethics in Management Vedantic Perspectives, Oxford University Press
4. Subhash Sharma, Management in New Age: Western Windows – Eastern Doors, New Age International Publishing , New Delhi
5. Prof (Col.) PS Bajaj, Dr.Raj Agarwal – Business Ethics an Indian Perspectives, Biztantra 2006.

SEMESTER I

Paper 2: CO 212- LEGAL FRAMEWORK FOR BUSINESS

Objectives:

1. To enable student acquire updated knowledge and develop understanding of the regulatory framework for business
2. To make students aware of opportunities available in various legal compliances so as to enable them employable.
3. To expose students in emerging trends in good governance practices including governance.

Module 1: Advanced Company Law: The Companies Act 2013: Formation and related procedures of various types of companies Procedure for inter-corporate loans, investments- guarantee and security – Registration modification and satisfaction of charge Declaration and payment of dividend Maintenance of Books of Accounts - statutory financial audit, cost audit and secretarial audit – Board meetings and procedures -

(15 Hrs)

Module 2: Other Corporate Laws: Limited Liability Partnership Act, 2008: Concept, formation, membership, functioning and Dissolution - Conversion of LLPs into Private Limited Companies and vice versa. The insolvency and bankruptcy code,2016 - Insolvency Professionals - Liquidation Process – Insolvency and Bankruptcy Board of India.

(15 Hrs)

Module 3: Economic Laws: a. FDI Policy – Foreign Direct Investment in India and abroad – External Commercial Borrowing (ECB) Formalities – Establishment of Branch Office of a foreign entity in India. b. Foreign Trade Policy – Opportunities of commerce/finance professional in foreign trade – Procedure of import and export – Export promotion schemes and initiatives. c. Competition Commission of India – Compliance of competition law.

(20 Hrs)

Module 4 : Industrial and Labour laws: Overview of Industrial Policy of Govt of India and Govt of Kerala – Regulatory Mechanism under IDRA – MSME Development Act – Advantages of MSMEs and their role and significance in economic development – Central and State Schemes for MSME Promotion – Udyog Aadhar. (20 Hrs) SR

Module 5: Foreign Exchange Management Act - Features and Application- Opportunities for Indian Business -Challenges- Foreign Contribution (Regulation) Act 2010 (20 Hrs) ASD

References

1. Kapoor. N .D, *Business law*, Sulthan Chand and Sons
2. Chandha P.R, *Business law*gajgotia, New Delhi
3. Garg K.C, V.K Surendran, Mahesh Sharma and Chawla R.C, *Busiess regulatory frame work*, Kalyani Publishers, New Delhi
4. Tulsian P.C, *Business Laws*, Tata Macgraw-Hill publishing Co.Ltd, New Delhi
5. B S Moshal, *Modern Business law*, Ane books, New Delhi
Awathar Singh, *Company Law*, Eastern Law Books
- 6 Corporate Laws – Taxmann
- 7 Lectures on Company Law – K.S.Anantharaman
- 8 A Textbook of Company Law – PPS Gogna
- 9 Limited Liability Partnerships – Hitenter Mehta
- 10 Beginner's Guide to Capital Market – SEBI's Investor Awareness Website www.investor.sebi.gov.in
- 11 Guide to Insolvency and Bankruptcy Code 2006 – Taxmann
- 12 The Indian Partnership Act – Pollock and Mulla
- 13 Economic, Labour and Industrial Laws – Sultan Chand and Sons
- 14 FEMA and FDI Ready Reckoner – V.S.Datey
- 15 Export and Import Documentation and Procedures – J.Senthil Velmurugan and S.Mahalakshmi
- 16 Competition Law in India – Abir Roy
- 17 Law of Consumer Protection – Dr.V.K.Agarwal

- 18 Anti-Money Laundering and Know Your Customer – Indian Institute of Banking and Finance (IIBF).
- 19 Intellectual Property Laws – P.Narayanan
- 20 Micro, Small and Medium Enterprises in India – IIBF
- 21 Labour and Industrial Laws – P.K.Padhi
- 22 Labour Laws – Taxmann
- 23 Compliances under Labour Laws – H.L.Kumar
- 24 Text Book on Arbitration and Conciliation with Alternate Dispute Resolution – Saharay Madhusudan
- 25 Law of Corporate Governance : Principles and Perspective – K.R.Samath
- 26 Listing Agreement by SEBI
- 27 Journals – Chartered Secretary, Management Accountant, The Chartered Accountant, FIEO News and Vyavasayakeralam
- 28 Websites - www.india.gov.in, www.mca.gov.in, www.commerce.gov.in, www.dgft.gov.in, www.cci.gov.in, udyogaadhaar.gov.in, www.egroups.kerala.gov.in and www.cca.gov.in,

SEMESTER II

Paper 1: CO 221- E-BUSINESS & CYBER LAWS

Objectives:

1. To equip the students with the emerging trends in business
2. To equip the students to introduce and explore the use of information technology in all aspects of business.
3. To familiarise with the students cyber world and cyber regulations

Module – 4: Cyber Law- Introduction – Need – Evolution of Cyber Laws - Scope–
Jurisdiction in cyber space – jurisdiction with respect to E-Commerce and E-governance
–Indian law relating to IPR (Copy right, Trademark, Patents etc.) **(15 Hrs)**

Module – 5: Cyber Regulations- -Cybercrime, investigation and surveillance – internet surveillance and privacy - issues relating to investigation, cyber forensic, relevant provisions under IT Act 2000, IPC and Evidence Act etc. Adjudication under the IT Act – Cyber Appellate Tribunal – punishments for various cybercrimes (an overview)

(15 Hrs)

References:

1. E-business, Dr. Ravi Kalakota, Pearson Education Asia
2. E-Business (R)evolution, Daniel Amor, Pearson Education Asia
3. E-Business-2, Dr. Ravi Kalakota & Macia Robinson, Pearson Education Asia
4. E-Business and Commerce, Brahm Canzer, Dreamtech press, New Delhi
5. The E-Business book, Dayle M Smith, Viva books, Newdelhi
6. E-Business essentials, Rajat Chatterjee, Global India Publication, Newdelhi
7. E-Business essentials, Matt Haig, Kojan Page India Ltd
8. IT Act 2000, IT Amendment Bill 2006, IT Amendment Bill 2008

Elective: FINANCE

SEMESTER III

Paper 1: CO 231U -INCOME TAX PLANNING AND MANAGEMENT

Objectives:

1. To impart deep knowledge about the latest provisions of Income Tax Act
2. To develop application and analytical skill of the provisions of Income Tax Law for Income Tax planning and Management.

Expected input

Basic knowledge and understanding about the fundamental concepts and computation of tax and Assessment procedure from B.Com.

Expected outcome

Students will get expert knowledge regarding the legitimate way of Tax Planning and Management under different Financial and managerial decisions after considering the impact of Direct Tax Laws.

Teaching Hours:108

No. of Modules: 6

Module 1: Overview of Income Tax law-Computation of Tax an Overview -Individual, Company ,Firm –Accounting Standards relating to Tax- Tax Information (10 Hrs)

Module 2: Tax planning and Management:- Meaning - Tax planning, Tax Evasion, Tax avoidance, Tax management – Differences- Nature and Scope of Tax Planning-Precautions in Tax Planning- Need for Tax Planning-Limitations- Tax Audit- Tax Planning in relation to Heads of Income -Concept of TDS/TCS -Advance payment-Computation- -Rebate 87A,88 – Relief u/s 89 , 90,91.Black Money Act 2005-Introduction-Features- Highlights-Importance. **(15 Hrs)**

Module 3: Tax Planning And Management For Individuals:- Tax Incidence on Individuals- Significance-Taxable Income- hints for Tax Planning and Management- Impact of Tax on Financial Decisions-Alternative Minimum Tax (AMT)- Tax Planning For Employer and Employee-Documentation and Filing of Return- E-Filing- Tax Credit- TRACES- Refund-Appeal-Tax Return Preparators(TRP)- Procedures and rules- Settlement commission-Advance Ruling (16 Hrs)

Module 4:Tax Planning For Firm, Association of Person and Body of Individuals:- Tax incidence on Firm/AOP/BOI- Impact of Tax liability on Firm –Significance of Tax Planning- LLP-Sec: 184 & 185- Inter-transaction between partners and Firm – impact of Tax on Change in Constitution of Firm- Conversion Of Firm in to Company – Conditions Of 40(b) – Carry forward and Set off in case of Change in Constitution of Firm – Filing of Return-Appeal- Refund- Hints for Tax planning for Firm, AOP and BOI. (22 Hrs)

Module 5: Tax Planning and Management for Company:- Types of Companies- Domestic and Foreign- Tax incidence on Companies- Impact of Income Tax on Corporate Decisions – Tax Planning and Management in Corporate Decisions – MAT Provisions- Computation-Application of IT in Tax Planning –Tax Planning For New Business- Tax Planning on Venture capital Companies – Tax Planning on Financial and Investment decisions – Capital structure-Dividend and Deemed Dividend- Dividend Distribution Tax-Bonus Shares- Make or buy – own or Lease – Repair or Replace- Employee Remuneration – Setting up of new business – Location Aspects – Amalgamation or Demerger – Filing of Return – E-Filing- Refund- Appeal- Methods and procedures – Annual Return for TDS and TCS – Hints for Tax Planning and Management. (25 Hrs)

Module 6: International Taxation- Basic Concepts – Double Taxation Relief – Computation – DTAA – GAAR – Advance Ruling- Transfer pricing – transfer Pricing Law in India- Concepts of Arms length price – advance Pricing Agreement- Taxation of E-Commerce Transaction –Filing of Return- International Settlement Commission – Methods and Procedures. (20Hrs)

NB: i) Some case studies involving the learning

ii) Necessary inputs from B.Com Programme

References:

Books

1. Singhania. V.K: Direct Tax planning and Management, Taxman, N.Delhi.
2. Singhania.V.K: Direct Taxes Laws and Practices,Taxman, N.Delhi
3. E.A.Srinivas: Corporate Tax Planning;Tata Mc-GrawHill
4. Mehrithra HC: Direct Tax Planning
5. Kushal Kumar Agrawal: Direct Tax Planning and Management; Atlantic Publishers
6. Bhagavath Prasad: Direct Tax Law and Practice
7. LakhotiaR.N: Corporate Tax Planning
8. CA G.Sekar: professional guide to Tax Audit

Journals and Circulars

1. Chartered Accountant Today- Tax man for Current Reading
2. Circulars issued by CBDT
3. Journal Chartered Accountant
4. Black Money Act 2005 (Bare Act-main provisions)

SEMESTER IV

Paper 1: CO 241W- GOODS AND SERVICE TAX & CUSTOMS DUTY- LAW AND PRACTICE

Objectives:

1. To gain expert knowledge of the principles and law relating to Goods and Service Tax and Customs Act.
2. To impart skill in applying and analysing the provisions of Goods and Service Tax Act and Customs Act in handling practical situations.

Module 1: Introduction: Meaning and Definition of Indirect Taxes-Nature-Scope-Constitutional provisions-Advantages-Disadvantages-Difference between Direct and Indirect Taxes- Types-Milestones in the history of Indirect Taxation in India. (10 Hrs)

Module 2: Basic Provisions of GST: Introduction-Meaning-Features-Historical backdrop of Goods and Service Tax-Major Indirect Taxes merged in to Goods and Service Tax-Benefits of GST-Economy, Industry and trade, tax payers-Types of GST-CGST-IGST-SGST- UTGST Schedules-Rate of GST- Kerala GST Provisions. (20 Hrs)

Module 3: Main Provisions of GST - Main Provisions: Provisions relating to Compensation(GST)Law-Definitions of important terms-Levy of Tax-Collection-relating to Place, Time and Value of Supply-Different meaning of supply- Composite Supply-Mixed supply- Scope of Supply- Taxable Supply- E-Commerce-Supply Chain –GST Exemption limit- Tax Invoice-Credit and Debit Notes-Valuation Rules-Computation Tax-Input tax Credit(ITC)-Registration-procedures-Deemed Registration-Cancellation of Registration- Accounts and Records- Period of Retention of Records- Presumption as to Documents>Returns- Annual-Final-Payment of Tax-Information Technology in GST-Audit- Special Audit-Assessment-Refund-Consumer welfare Fund-GST Practitioners-TDS/TCS. (23 Hrs)

Module 4: Administration of GST:- GST- Council-Authorities-Inspection-search seizure-Arrest-Demand-Recovery—Liability to pay tax in certain cases- -Advance Ruling- Authority and Appellate Authority-GSTN-Information infrastructure for GST.

(15 Hrs)

Module 5: Appeals And Revisions under GST.: Appeals-Appeal to High Court- Appeal to Supreme Court- Revisions-Offences- Compounding of Offences-Penalty- Transitional provisions-IGST Provisions- Inter-state Supply- Intra-state supply- Zero rated Supply- Imported Supply- Transfer of ITC-Compensation Rules- Base year Revenue-Projected Revenue-Miscellaneous provisions-Interest-Job Work Procedure- Deemed Export.

(20 Hrs)

Module 6: Customs Duty: Definition of Customs Duty- Objectives Role of customs duty in International trade--Importance-Demerits-Important definitions-Basis of determining customs Duty- Types of Duties-Anti-dumping Duties-Import and Export manifest—Specified Goods- Stores-Warehouses-Export Policy-Customs Duty Authorities and Powers Assessment Procedures--Penalties and Prosecutions-Appeals and Revisions-Tax liability and Valuation of Goods-Baggage Rules-Import Procedure and Documents-Export Procedure and Documents.

(20 Hrs)

Input—Basic Awareness from B.Com and First Semester M.Com

Semester V

Core VI EC1541 Methodology and Perspectives of Social Science.

4 Hours

4 Credits

Course Objective: The course intends to familiarize the students with the broad contours of Social Sciences, specifically Economics and its methodologies, tools and analysis procedures. The course also aims to create an enthusiasm among students, incorporating various concepts and issues in economics.

MODULE I: Methodology of Social Science (10 Hours)

Social science Disciplines - Need for interdisciplinary approach - Objectivity and subjectivity in social Science - Limits to objectivity in social science. Economics as a social science subject.

MODULE II: Economic Issues and Concepts

(15 hours)

Resources and scarcity- Choice and opportunity cost- The production possibility boundary. Three key issues- what should be produced- Efficient production- Economic growth. Economic systems- Traditional systems, Command systems, Pure market systems and Mixed systems- Role of government in the modern mixed economy. Economic advice: Positive and normative economics- Economic theorizing- endogenous and exogenous variables.

(Lipsey & Chrystal (2009) Economics, Eleventh Edition, Oxford University Press, New York, Chapter 1 & 2)

Module III: Understanding the Organization of Economy

(20 hours)

Capitalism defined: Private property, markets and firms- Capitalism as an economic system- Gains from specialization- Technology, population and growth- Economic models- Basic concepts: Prices, costs and innovation rents- Industrial Revolution and incentives for new technology.

(The Economy: Economics for a changing world by CORE team Chapter 1 & 2)<http://www.core-econ.org/the-economy/book/text/0-3-contents.html>

Module IV: Major Global Economic Events

(15 Hours)

Great Depression- Golden age of high growth and low employment- stagflation and the end of golden age- Global financial crisis. The nation and the world economy- Globalisation and investment- Globalisation and migration- Trade and Growth.

(The Economy: Economics for a changing world by CORE team Chapter 17 & 18)<http://www.core-econ.org/the-economy/book/text/0-3-contents.html>

Module V: Contemporary Economic Issues

(15 hours)

Economic inequality- measuring inequality and living standards- **Economics of environment-economy and environment**- Innovation process: invention and diffusion- Innovation systems- Intellectual Property Rights.

(The Economy: Economics for a changing world by CORE team Chapter 17 & 18)
<http://www.core-econ.org/the-economy/book/text/0-3-contents.html>

References

Module I:

- Blaug, M (1998): The Methodology of Economics, Cambridge Surveys of Economic Literature' New York.
- Kaufmann, Felix (1958): Methodology of the Social Sciences, The Humanities press, New York.
- Hunt, Elgin F (2008): Social Science and its Methods, Social Science and Introduction to the study of Society, Allyn and Bacon.

Module II

- Lipsey & Chrystal (2009) Economics, Eleventh Edition, Oxford University Press, New York.

3. S P Gupta, Statistical Methods, Sultan Chand and sons

Semester V

Core VIII EC1543 Readings in Political Economy

4 Hours

4 Credits

Module I Passages from the Classics (15 hours)

Adam Smith-Division of labour, Ricardo-On Rent and Of Machinery, Marx-CMC and MCM' circuit

1. Adam Smith; Wealth of Nations, Book 1, Chapter 1 'of the division of labour'

, Chapter 3 'That the division of labour is limited by the extent of market'

<http://www.econlib.org/library/Smith/smWN1.html#B.I, Ch.1, Of the Division of Labor>

2. David Ricardo; On the Principles of Political Economy and Taxation Chapter 2 On Rent

<http://www.econlib.org/library/Ricardo/ricP1a.html>

David Ricardo; On the Principles of Political Economy and Taxation, chapter 31 on Machinery

<http://www.econlib.org/library/Ricardo/ricP7.html#Ch.31, On Machinery>

3. Karl Marx –Capital Volume 1

Part II The Transformation of money into Capital

Chapter-4 The General formula for Capital

<https://www.marxists.org/archive/marx/works/1867-c1/ch04.htm>

Robert Heilbroner (1998) Wonderful World of Adam Smith

, Worldly Philosophers, Robert Heilbroner (1998), Updated Seventh Edition

TOUCHSTONE and colophon are registered trademarks of Simon & Schuster Inc. USA.

http://starbooksfeaa.weebly.com/uploads/5/4/8/6/54869709/the_wordly_philosophers.pdf

Module II Political Economy : Different Perspectives (20 hours)

This section introduces the student to different perspectives of political economy : the perspectives of Adam Smith , John Maynard Keynes

1. Robert Heilbroner (1998) Wonderful World of Adamsmith

, Worldly Philosophers, Robert Heilbroner (1998), Updated Seventh Edition

TOUCHSTONE and colophon are registered trademarks of Simon & Schuster Inc. USA.

http://starbooksfeaa.weebly.com/uploads/5/4/8/6/54869709/the_wordly_philosophers.pdf

2. The Rise and fall of money- The Mandarin Revolution (Great Depression and the Ideas of Keynes)

3. Glabraith, John Kenneth, 'The age of Uncertainty' Houghton Mifflin Company, Boston, 1977

http://starbooksfeaa.weebly.com/uploads/5/4/8/6/54869709/the_wordly_philosophers.pdf

The Savage Society of Thorestein Veblen

http://starbooksfeaa.weebly.com/uploads/5/4/8/6/54869709/the_wordly_philosophers.pdf

The Contradictions of Joseph Schumpeter

http://starbooksfeaa.weebly.com/uploads/5/4/8/6/54869709/the_wordly_philosophers.pdf

Module III Global Economic Crisis and its Aftermath (20 hours)

THE Recent Crisis in Global Capitalism : Towards Marxian Understanding

1. Vamsi Vakulabharanam, EPW Vol.44, Issue No.13, March, 2009

www.epw.in/system/files/pdf/2009_44/13/The_Recent_Crisis_in_Global_Capitalism_Towards_a_Marxi_an_Understanding.pdf

Module IV Issues in Political Economy and Development Thinking (20 hours)

Indian Development thinking, Gender equality and Women's empowerment. Social justice through affirmative action in India.

Naila Kabeer (2005) Gender equality and Women's empowerment Development

<http://nailakabeer.net/wp-content/uploads/2005/09/13552070512331332273.pdf>

Ashwini Deshpande (2012), Social Justice through Affirmative Action in India

<http://research.economics.unsw.edu.au/scho/WEE/papers/Ashwini%20Deshpande1.pdf>

Semester V

Core IX EC1544 Economic Growth and Development

3Hours

2 Credits

Course Objectives:

1. To ensure that students begin to understand basic concepts of Economic Growth and Development and thereby enable them to acquire multi dimensional aspects of developmental issues
2. To convey knowledge about theoretical framework of Growth and Development under different Schools of economic thought.
3. To impart knowledge about Political institutions, the role of the state in Economic Development and problems that affect state Governance.

MODULE I : CONCEPTIONS OF DEVELOPMENT (7 Hours)

Meaning, Definition and Scope of Economic Growth and Development, Development Gap, Alternative Measures of Development, Comparing Development Trajectories across nations and within them.

MODULE II : TOOLS FOR MEASURING DEVELOPMENT (15 Hours)

Measurement of Poverty – absolute and relative; Head-Count Index and Poverty Gap Indices Sen’s Capabilities approach; Measurement of Income inequality – Kuznet’s inverted U Hypothesis, Lorenz Curve, Gini Coefficient, Physical Quality Life Index, Human Development Index, Happiness Index, Gender Development Index.

MODULE III : GROWTH MODELS (20 Hours)

Core Course EC1641 Indian Economy

5 Hours

4 Credits

INDIAN ECONOMY

Inst.Hours -4

Number of credit-4

Course Objective

The course intends to provide an understanding about growth process in Indian economy, sectoral aspects of the economy by focusing agriculture, industry and service sectors, relations of India with external sector and economic reforms.

Module 1: Growth process in Indian Economy

25 hrs

Indian economy since independence: Growth trends- National Income, Savings & investments, Demographic features – demographic transition and India, optimum population, health indicators, literacy status, demographic dividend, Urbanization – trends and issues, rural urban migration, Poverty –poverty line, rural & urban poverty, measures and programs. Inequality – features, various indices-Employment and Unemployment – trends, types, measures and programs, inflation – trends, reasons and measures.

Module 2: Agriculture and Industry since independence

20hrs

Agriculture sector – land use and cropping pattern-Strategies relating to technologies and institutions: food security, land relations and land reforms, agriculture credit, modern farm inputs and marketing - price policy and subsidies; commercialisation and diversification, New Agriculture policy.

Industry - Strategy of industrial development - Core industries -growth of MSMEs- sources of industrial finances (banks, share market, insurance companies, pension funds, non-banking sources, MUDRA loan)-labour market-formal and informal- labour laws in India

Module 3: Service Sector and international trade

20hrs

Services sector - Importance and composition, banking, insurance, transport and communication, education and health, public administration and defence, e-commerce-performance of public sector enterprises

India's foreign trade – volume, direction and composition- balance of payments-exchange rate management- Role of international oil and gold prices in Indian economy

Module 4: Indian Economic Reforms since 1991

15hrs

Online resources

10. <https://dea.gov.in/indian-public-finance-statistics>

11. <http://www.mospi.gov.in/statistical-year-book-india/2017/174> Ministry of Finance. Government of India. Statistical Year Book of India. (data). 12. <http://www.mospi.gov.in/> Ministry of Statistics and Programme Implementation. Government of India. Fiscal Statistics.

1644 Environmental Economics and Disaster Management (Core)

Module I Basic Concepts (5 Hrs)

Basic Concepts of environmental economics – economics and ecology – ecology and eco system

Module II Theory of Externalities (15 Hrs)

Market system and environment of externalities – Pareto optimum and Market failure in the presence of Externalities – Property rights and the Coase theorem

Module III Environmental Policy Tools for Analysis (20 Hrs)

Pigouvian Taxes and Effluent Charges; Tradable Permits – Environmental Valuation – Types of Economic Values – Non Market Valuation Methods – Cost Benefit Analysis – Sensitivity and Risk analysis

Module IV Global Environmental Issues (7 Hrs)

Economics of Climate Change – Agreements and Institutions - Population Growth and the Environment – Trade and Environment – Concept and Measurement of Sustainable Development

Module V Disaster Management in india (8 Hrs)

Concept and Definitions (Disaster, Hazard, Vulnerability, resilience, Risk) – Hazard and Vulnerability Profile of India – Institutional Arrangements (Mitigation, DM Act and Policy, Plans Programmes and Legislation), Disaster management in India

Basic Readings

1. Hussain, M, Ahmed. 2000. Principles of Environmental Economics, Routledge, London and New York
2. Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition

Semester I

Foundation Course 1- EN 1121 (B A/ B. Sc) and CG 1121.3 [Career Related 2 (a) Programme]

Course Title: WRITINGS ON CONTEMPORARY ISSUES

Credits: 2

Hours: 4/week (72 hrs)

Learning Objectives:

1. To sensitize students to the major issues in the society and the world.
2. To provide students with a variety of perspectives on contemporary issues.
3. To encourage them to read literary pieces critically.

Learning Outcomes:

On completion of the course, the students should be able to

1. Have an overall understanding of some of the major issues in the contemporary world
2. Respond empathetically to the issues of the society
3. Read literary texts critically

Course Description

1. Living in the Planet of the Apps by Khyrunnisa A.
2. Ageing in India: Some Social Challenges to Elderly India by Abhay B. Mane
3. India's Women: The Mixed Truth by Amartya Sen
4. Drug Abuse: Causes and Solutions by Samudranil Mukherjee
5. Artificial Intelligence by Gareth Southwell
6. Universal Declaration of Human Rights by Leah Levin
7. What Secularism is and is not by Romila Thapar
8. The Globalisation of Inequality by P. Sainath

Semester II

EN 1211.1

Language Course 3: Ability Enhancement Compulsory Course – EN 1211.1 (B.A / B.Sc)

**Course Title: ABILITY ENHANCEMENT COMPULSORY COURSE:
ENVIRONMENTAL STUDIES AND DISASTER MANAGEMENT**

Credits: 5

Hours: 5/week (90 hrs)

Learning Objectives:

To enable the student:

- to engage with a wide range of issues in environmental studies and disaster management.
- to acquire a set of values for environmental protection and conservation
- to recognize the ecological basis for regional and global environmental issues
- to manage natural disasters and other emergency situations
- to develop a critical vocabulary related to environmental studies and disaster management

Learning Outcomes:

The student will be able to:

- understand environmental crises and disaster management situations
- take lead in spreading environmental values and creating awareness among the public
- understand local environmental issues better
- respond in a better way to a natural calamity or disaster
- articulate environmental concerns using appropriate vocabulary

Course Description

Module 1

Understanding the Environment

Introduction: Environment-its importance-types of ecosystems

- “Chief Seattle’s Speech”
- “The Religion of Forest” (An Essay by Rabindranath Tagore)
- “Trophic Cascade” (A poem by Camille T. Dungy)

A Glossary of relevant key concepts with examples

Comprehension Questions

SEMESTER VI
FIRST DEGREE PROGRAMME IN
BA ENGLISH LANGUAGE AND LITERATURE (CBCS System)

Core Course 11: EN 1641 Gender Studies

No: of Credits: 4

No of Instructional Hours: 5 [Total: 90hours]

Aim: Introduce and problematize gender constructs.

Objectives

1. Explore the historical variables that have contributed towards the social norms of gender and sexuality
2. Understand the significance of making gender an integral concept of social analysis
3. Develop a conceptual understanding of the field of gender studies

Course Outcome

CO 1: Recognize the patriarchal bias in the formation of history and knowledge.

CO 2: Analyse the ways in which gender, race, ethnicity class, caste and sexuality construct the social, cultural and biological experience of both men and women in all societies.

CO 3: Recognize and use the major theoretical frames of analysis in gender studies

CO 4: CO 5: Interrogate the social constructions of gender and the limiting of the same in to the male-female binary in its intersections with culture, power, sexualities and nationalities

CO 5: Examine gender issues in relation to the sustainable goals of development

COURSE OUTLINE

Module I Introduction to Gender Studies

Gender, Patriarchy- Family- Identities- Essentialism- Difference- Ideology- Intersectionality- Feminisms-Womanism-Dalit Feminism-Islamic Feminism

1. bell hooks "Feminist Politics:Where we Stand" *Feminism is for Everybody: Passionate Politics*. London: Pluto, 2000: pp.1-6.
https://excoradfeminisms.files.wordpress.com/2010/03/bell_hooks-feminism_is_for_everybody.pdf
2. Judith Lorber. "The Social Construction of Gender."
https://ceas.unideb.hu/admin/file_9695.pdf
3. Vijila Chirappad: "Wasteland" (poem)
<https://feminismindia.com/2018/01/11/5-dalit-women-poets/>

SEMESTER IV

PAPER XVII: Choice 5

EL.544.5 : Elective Course : Theorizing Sexualities [4 hours/ week]

Aim

The aim of this paper is to give students an awareness of biological, social and grammatical gender as being three different categories

Course Objectives

The objectives of this paper are to:

- demonstrate an awareness of biological, social and grammatical gender as being three different categories
- give a basic awareness of struggles and attainments of people with alternative sexualities in civil rights in various parts of the world
- help the students view with scepticism the simplistic conflation of biological sex with socially and culturally conditioned gender

Course Outcomes

At the end of this course the students will be able to:

- CO 1: appreciate, if not accept the viewing of gender as a continuum
- CO 2: display an awareness of different sexualities such as lesbian, gay and bisexual rather than seeing heterosexuality as the only 'natural' or 'decent' lifestyle option
- CO 3: critically analyse different gender self-identification preferences such as transgender and inter-genders rather than seeing the polar genders male and female as the only 'natural' ones

SEMESTER II**Paper VII- FL 523 : GENDER STUDIES****(Core Course 7 : 6 hours/week)****Aim**

To enable students to interrogate and analyze socio-political-historic structures and representations underlying the politics and sociology of gender- related positions on evolving identities, on activism, legal rights and gender related development.

Course Objectives

The objectives of this Course are to

- Introduce students to the key areas in Gender Studies as a discipline
- Teach them to interrogate and analyze socio-political-historic structures and cultural representations and discourses to uncover the politics of gender and the positioning of gender identities
- Lead them to explore and deepen gender-related perspectives on legal rights, activism, policy/advocacy, and research.
- Inculcate an awareness of evolving gender perspectives and identities
- Arrive at critically informed readings of process of gender related development.

Course Outcomes

The students would have

- CO 1: Interrogated and analyzed gendered performance and power in a range of social spheres.
- CO2: analyzed patriarchal socio-political-historic structures and cultural representations and discourses
- Co 3: Explored and deepened their gender-related perspectives on gender laws, activism, policy/advocacy.
- CO 4: Arrived at critically informed readings of literary texts and cultural practices with an understanding of the politics of gender
- Co 5: understood the positioning of intersectional gender identities in the process of development.

HINDI LANGUAGE AND LITERATURE

2017 Admission

FIRST DEGREE PROGRAMME IN HINDI

**Under choice based credit and semester (CBCS) System
2017 Admission onwards**

Computer and Internet – Computer and Hindi.

COMPLEMENTARY COURSE – HINDI
Syllabus and textbooks
SEMESTER -1

HN 1131 Complementary course -1 – Women's Literature in Hindi(Compulsory)

Aim of the course/objectives

The aim of the course is to show light on the efforts done by women writers in Hindi with special reference to modern Hindi woman writers and evaluate their vision about woman. To study the growth of women's writing in Hindi- To evaluate the peculiarities of women writers.

Module- 1

Development of women's writing in Hindi –Ancient, Modern and Post modern age – Special reference to poetry, novel and short story.

Module -2

The Prominent modern and post modern woman writers- (Mannu Bhandari, Usha Priyamvadha, Chithra Mudgal, Mridula Garg, Madhu kankaria, Alka Saravagi, Mamatha Kaliya, Kshama Sharma, Maneesha Kulashreshta, Mythreyi Pushpa) – Their major works.

Module – 3

Feminism- The feminist vision of Hindi women writers. Indian women's struggle for existence and their problems in women's literature.

Module – 4

- A. One Novel (by woman Writer) since 2000
- B. Collection of women writers short stories and poems after 1980.

Prscribed textbooks ;

- I Short Story & Poem Collections – Mahila Kahani aur Kavitha
Edited by Prof.M.S.Jayamohan, Lok Bharathi Prakashan, Allahabad
Stories to be studied(Non- detailed)

- | | | |
|----------------------------|---|----------------------|
| 1. Saja | - | Mannu Bhandari |
| 2. Kithana Bada Jhoot | - | Usha Priyamvadha |
| 3. Lakshagrah | - | Chithra Mudgal |
| 4. Ekeesveem Sadi ka ladka | - | Kshama Sharma |
| 5. Kurjam | - | Maneesha Kulasreshta |
| 6. Phool | - | Neelakshi Singh |

Poems to be studied (Detailed)

- | | | |
|-------------------|---|-------------------------|
| 1. Murjhaya Phool | - | Mahadevi Varma |
| 2. Mera Jeevan | - | Subhadra Kumari Chawhan |
| 3. Ekalavya | - | Keerthi Chawdhari |
| 4. Deshprem | - | Anamika |
| 5. Shokgeeth | - | kathyayani |
| 6. Daba | - | Neelesh Raghuvamshi |

- | | | | |
|----|----------------------|---|----------------------------------------------------|
| II | Novel (non-detailed) | - | Andhere Ka Thala, Mamatha Kaliya
Vani Prakashan |
|----|----------------------|---|----------------------------------------------------|

Reference

- Stri Lekhan Swapn aur Sankalp, Rohini agrawal
Rajkamal Prakashan, Delhi

The Literary Contribution of the following women writers should be studied in general

1. Usha Priyamvadha
2. Chithra Mudugal
3. Mannu Bhandari
4. Mridula Garg
5. Mamta Kaliya
6. Madhu Kankaria
7. Alka Saravagi
8. Kshama Sharma
9. Maneesha Kulasreshta
10. Mythreyi Pushpa

HN 1231 Complementary course -III –(Compulsory)
C.3-L.H.3

Aim of the course/objectives

The aim of the course is to enrich the knowledge of the famous ancient poet Kabeer Das. To understand the distinct features of Kabeer and the Contemporariness of Kabeer.

Module 1

Life history of Kabeer Das- Historical background of Kabeer's era.

Module 2

Kabeer's devotion, philosophy, mysticism—Kabeer's Ram

Kabeer as a rebellion – Dissent against social discrimination and sectarianism.

Module 3

Kabeer as a social reformer- kabeer's vision on Hindu Muslim unity, Kabeer as a poet – Kabeer's contemporariness.

Module 4

A. Doha

B. Pad

Prescribed textbook- Samaj Sudharak Kabeer Das by Dr.Prakash, Kerala University

Echo Literature
HN 1232 Complementary course -IV –(Optional)
C.3-L.H.3

Aim of the Course/Objectives

The aim of the course is to understand the echo of the Literature and the elements of different types of Poems and stories. To familiarize the Transformation and its formation. To understand the relation between environment and the humanbeings.

Module -1

Introduction

Module -2

Poems

Module -3

Short Story

Prescribed textbook- Echo Literature, by Dr.Suma.S, Vani Prakashan, New Delhi

Comparative Literature with Special Reference to Hindi and Malayalam or Sanskrit

HN 1331 Complementary course -V

C.3-L.H.3

Aim of the course/objectives

The aim of the course is to understand comparative Literature and the use and nature of comparative literature. To know about the similarities between Hindi and Malayalam Literature. To get general awareness of Malayalam and Hindi Literature and to introduce major writers of each literature and their thought and philosophy.

Module-1

An introduction to comparative Literature.

Module -2

An introduction to Malayalam and Hindi Literature – Comparative study of Hindi and Malayalam Romantic Poetry – Special Reference to Jayashankar Prasad and Kumaran Asan.

Module – 3

Comparative study of Hindi Malayalam Novel – Special reference to Premchand and Thakazhi Sivasankara Pillai.

Module -4

Comparative study of Hindi and Malayalam short stories.

Prescribed Textbook – Hindi Malayalam Thulanatmak Adhyayan,

By, Dr.M.S.Vinayachandran, Dr.P.Latha,

BA - Hindi - 2020 Admission
2020 Scheme
Onwards

UNIVERSITY OF KERALA
Scheme & Syllabi

For First Degree Programme in Hindi (Other than General English)

(Faculty of Oriental Studies)

Under the Choice based Credit and Semester system (CBCSS)

2020 admission onwards

Outcome of the course: (1) The students attain comprehensive knowledge of Premchand as fiction writer: (2) Appreciates and critically evaluates prescribed short stories and Novel of Premchand (3) Evaluates the contribution made by Premchand in the field of Hindi fiction writing.

Reference :

1. Premchand ghar mein by Shivrani Devi ,Atmaaraam and sons
2. Premchand ka rachanaa sanchayan by Nirmal varma & Kamal Kishore Goyanka, Sahitya Academy

Complementary Course IV (Optional)

HN 1232 'Paristhithik Paat aur Hindi Sahitya credits: 3 hrs: 3/weeks.

Aim of the course: (1) To familiarize the students with how environmental issues are depicted in Hindi literature (2) To familiarize the students with the role of literature in tackling environmental issues.

Module I: Five short stories depicting environmental issues

Outcome: (1) understands how environmental issues are depicted in Hindi short stories (2) critically evaluates the stories in the light of the issues discussed in them.

Module II: Seven poems in Hindi dealing with environmental issues (detailed study)

Outcome: (1) understands how environmental issues are depicted in poetry (2) Critically evaluates the poems in the light of the issues discussed in them and with respect to the craft of the poems (3) Elucidates lines of the poems with reference to context.

Prescribed text: 'Paristhithik paat aur Hindi Sahitya' -edited by Dr. Suma.S and Dr. Jayasree S R published by 'Vani Prakashan, Daryaganj, New Delhi.

Course outcome: (1) The students get a comprehensive knowledge of how environmental issues are depicted in literature (2) critically evaluates short stories & poems in the light of the environmental issue discussed in them (3) students are motivated to interfere in the environmental; issues around them.

Hour distribution: 1 hr for module 1 and 2 hrs for module II.

Reference :

1. Paryavaran Sanrakshan har naagarik kaa kartavya by Sudarshan Bhatia ,Saksham prakashan, New Delhi
2. Paryavaran Shikshaa by Rajeev Garg ,Aviram Prakashan ,New Delhi

**Third Semester
Complementary Course V (Optional)**

- I. Answer the following ten objective questions
Each question carries 1 mark
(10 x 1 = 10 Marks)
- II. Answer three essays out of six
Each question carries 10 marks
(3 x 10 = 30 Marks)
- III. Answer three short questions out of six
Each question carries 5 marks
(3 x 5 = 15 Marks)
- IV. Answer any four out of six annotation passage
Each question carries 5 marks
(4 x 5 = 20 Marks)

SEMESTER : 4

COURSE : HINDI LITERATURE : MODERN DISCOURSES

(HINDI SAAHITY MEIN NAVE VIMARSH)

COURSE CODE : HL - CC 242

CREDITS : 4

Hours/week : 6

AIM: To Familiarize the students with the concepts of Contemporary discourses and boom in literature in terms of Women , Dalit , Adivasi, Gender , Media, Cyber and other discourses

COURSE OBJECTIVES: This course covers the development of discourses and its interpretation in literature, last decades of twentieth century literary experiments, movements etc

Course Outcome (Cos)

- CO 1 : Acquire awareness of the various kinds of literary representations from various sections of the society. understand the major social concerns and issues prevalent in our society
- CO 2 : Comprehend the literary works that would portray the real life narratives. Critically examine the narratives and thus shape a critique of our contemporary society
- CO 3 : Develop an approach of critical pedagogy to have a self- reflexive reading of the texts.
- CO 4 : Understand the varied ways of dominance inherent in the society and how they are manifested in art and literature. Acquire the efficiency to become a constant reminder about the need to resist all kinds of power.
- CO 5 : Gain the ability to analysis and interpret the literary forms of Hindi literature.
- CO 6 : Gain the insight into the major issues related to the sociocultural context of India in this era.

COURSE CONTENT

Module 1:

Dalit writing- History and Development- Auto Biographies- Poetry, Prose, Fiction,
Drama, Criticism

Module 2 :

Aadivaasi, - Aadivasi Writing History and Development- Depiction of Aadivaasi
life in Literature

Module 3:

Women Discourse –Politics of Women Writing , women and resistance movements ,
Patriarchy, Major writers through history, their themes and concerns, contemporary
writers, women and environment.

Module 4:

Gender Discourse, Performativity, Queer theory – Sexualities, Transgender Psychoanalysis, Vriddhvinayak, Krishakumarsh and other discourses

Module 5: Environment Discourses, Eco Literature, Eco Criticism, Eco Aesthetics, Eco Feminism : Media and Cyber Discourse in Hindi literature- Cyber theory, Media Technique, Cyber bullying

Module 6: Hindi Stories and poems related to these discourses

REFERENCE (TEXT FOR READING)

Edited Textbook for stories and poems and the following lessons to be studied

Poems:

1. Naye yugmein Shatru – Mangalsh Dabharval
2. Itna door mahiyahna baba- Nirjala Puthul
3. Pyasakunva – Gyanendrapathi
4. Hamare Artheeshaehenahin ho sakte – Anuj Lugun
5. mere prati - kranti – Asang Ghosh
6. Dastakeln - Agnishekhhar

Stories

1. Salam : Om Prakash Varneke
2. File - Madhu Kankariya
3. Pita – Gyan Ranjan
4. Ible Maryam – Nasira Sharma
5. eindot, kom – Hamot

Novel

Post Box No.202 Nala sopara – Chitra Mudgal

REFERENCE for Module 1 to 5.

1. Aadvaisasahity: vivid aayam – Ed. Dr. Ramesh Sambhajikure
2. Dait sahityvisheshank –Hans patrika
3. Hindi Mein Aadvaisasahity- Ispak Ali
4. Samakaaleen Hindi sahiya :vividhvimarsh Edited by
Prof. Shreeramsharma, Vaneprakashan ,New Delhi
5. Hindi sahiya meinasmitaamoolakvimarsh ,www.strekaal.com
6. Samakaaleenasmitaamoolakvimarsh , online course by www.swayam.gov.in

QUESTION PATTERN

HL – CC 242 HINDI LITERATURE : MODERN DISCOURSES
(HINDI SAHIITY MEIN NAYE VIMARSH)

Time :3 hrs

Maximum Marks :75

- I. Answer the following ten objective questions
Each question carries 1 mark (10x1 = 10 Marks)
- III. Answer two essays out of four
Each question carries 10 marks (2 x 10 = 20 Marks)
- III,Answer one essay out of four
Each question carries 10 marks (1 x 10 = 10 Marks)
- IV,Answer any seven out of Ten short answer questions
Each question carries 5 marks (7 x 5 = 35Marks)

- Beck, W. S., Liem, K. F. & Simpson, G.G. (1991). *Life: An Introduction to Biology* (3rd Ed.) Harper Collins Publishers, New York, pp 1361. ISBN : 006500009 9
- Bharucha,E. (2005). *Textbook of Environmental Studies*. Universities Press (P)Ltd. India, pp 276. ISBN 81 7371 540 8.
- Chapman, J.L., & Reiss, M.J. () *Ecology: Principles and Applications* (2d Ed.) Cambridge University Press, UK. ISBN: 0 521 00575 2.
- Charry, S.N. (2008). *Environmental Studies*. MacMillan India Ltd. ISBN: 10:0230 63531 8, 13: 987 0230 6351 9.
- Cunningham, W.P. & Cunningham, M.A. (2003). *Principles of Environmental Science inquiry and Applications*. Tata McGraw Hill Publishing Company Ltd. New Delhi. ISBN 0 07 058112 6.
- Donald Van DeVeer & Christine Pierce (). *The Environmental Ethics & Policy Book* (3rd Ed.) Wadsworth – Thomson Learning, Canada. ISBN: 0 534 56188 8.
- Emmel, T.C. (1976). *Population Biology*. Harper & Row Publishers, New York. ISBN 06 041904 0

Disaster Management

- <http://www.mnmk.ro/documents/2008/2008-6.pdf>
- Carresi,A.L, et al (2013) *Disaster Management: International Lessons in Risk Reduction, Response and Recovery* , Routledge, U.K.
- Agarwal, A. and Sen, S.: *The Citizen's Fifth Report*, Centre for Science and Environment. New Delhi 1999
- Chandna, R.C.: *Environmental Awareness*, Kalyani Publishers, New Delhi, 1998
- Sharma, H.S.: *RathambhoreSanctuary - Dilemma of Eco-development*, Concept.
- www.ifrc.org/en/what-we-do/disaster-management/
- Coppola. Damon (2011), *Introduction to International Disaster Management*, Elsevier ISBN: 978-0-12-3821744
- Abbott Leon (2008). *Natural Disaster*, McGraw-Hill.ISBN-13: 978 0072 428650.

HABITAT DESTRUCTION AND DISASTER MANAGEMENT

Module VIII**5 hrs****Environment Movements**

Environment and health - Environment and development: Environmental Movements (Chipko, Narmada Bachao Andolan). environmental movements in Kerala (Madhav Gadgil/Kasturi Rangan Reports. Ramsar sites Wetland Reclamations and localized anti-reclamation movements) Kerala state Biodiversity Board, Biodiversity Register.

DISASTER MANAGEMENT**Module IX****8 hrs****Disruption in Ecosystem**

Natural-flood, Draught, Earth quake, Cyclone, Tsunamis, Volcanic eruption. Anthropogenic influence on erosion, climate change and pollution. Mining activities Monoclonal plantations, genetically modified plants and their impact in ecosystem. Impact of Developmental projects such as construction of dams, Hydroelectric projects Thermal power station.

Module X**7 hrs**

Disaster Management – Meaning and Definition: Definitions of Disaster, Hazard, Risks. Vulnerability, and Resilience and their relationship: Classification of disasters- Human induced and Natural; Cause of Disasters; Impact of disasters. Factors affecting Vulnerability – Economic, Political, Environmental and Social Counselling.

Assignment/Seminar

Global warming, Green House Effect, Ozone depletion Climate change, Kyoto protocol

Reference

Module III**8 hrs**

Habitat Ecology: Biosphere classification- lithosphere, hydrosphere and atmosphere physical features; fauna and their adaptations of aquatic, terrestrial and marine habitats (self study).

Population ecology: Properties of population- density, natality, mortality, age distribution, biotic potential, environmental resistance and carrying capacity, population growth forms, J and S shaped curves, emigration, immigration and migration, population fluctuation. **Community ecology:** Definition and characters, species diversity; stratification; dominance; ecotone and edge effect; ecological indicators; community periodicity, succession.

Module IV**5hrs**

Anthropogenic impact on ecosystem: Ionizing radiation and radioisotopes, ionizing radiation and human health, radiation accidents and other exposures, disposal of radioactive wastes, pesticides like DDT, endosulfan, furadan, insect repellants , e-wastes. Monitoring of pollutants - physical, chemical and biological.

Module V**3 hrs**

Wild life conservation and management: Significance, causes of extinction, concepts of threatened species, red data book, IUCN, WWF, CITES, Green Environment and Green peace; protected areas, biosphere reserves, national parks and sanctuaries in India, forests in India, desertification, deforestation, carbon trading; importance of mangroves in coastal ecosystems-conservation and management.

Module VII**9 hrs**

Environmental biotechnology: Biotechnological methods of pollution detection, biotechnological methods in pollution management, bioremediation, biotechnology and biodegradation, genetically engineered microbes in bio-treatment of waste, eco-friendly bioproducts for environmental health, bio-piracy, bio-pesticides and bio-fertilizers, organic farming and its merits. Green chemistry - designing a Green synthesis, basic principles of Green chemistry.

Semester IV
Zoology Core course III
ECOLOGY, HABITAT DESTRUCTION & DISASTER MANAGEMENT
Course code – ZO 1441

No. of credits - 3

Total hours 54

Course Outcomes

- Students get basic knowledge on ecosystem, food chain, food web and energy flow.
- Students acquire general awareness on pollution and their impacts.
- Imparts basic knowledge on ecosystems and their functioning.
- Students learn about various types of anthropogenic pressures on ecosystem, related degradation and management measures.
- Students get awareness of toxicants, their impacts on human health and environment and remedial measures.
- Create awareness about disasters, prevention and mitigation measures.

ECOLOGY

4 hrs

Module I

Components of ecosystem: Environmental factors - abiotic factors, light, temperature, soil, air; biotic factors- autotrophs, phagotrophs and saprotrophs; ecosystem interaction and relationship between biotic and abiotic factors, the cybernetic nature and the stability of the system. Pond as an ecosystem (self study)

Module II

5 hrs

Biogeochemical cycles: Basic types of biogeochemical cycles - gaseous cycle-carbon and nitrogen cycles, mention sedimentary cycles (P and S), recycling pathways and recycle index.

Limiting Factors- basic concepts- Leibig's law of minimum, Shelford's law of tolerance, combined concept of limiting factors, Light and temperature as limiting factors.

DEPARTMENT OF SOCIOLOGY

**COURSES THAT ADDRESS HUMAN VALUE,
PROFESSIONAL ETHICS, GENDER, ENVIRONMENT
AND SUSTAINABILITY**

Semester	V	Type of course	Core 6
Credit	4	Hrs. / Week	4

SG 1541 GENDER AND SOCIETY

Aim of the Course

The course will introduce to the students basic concepts in Gender helps them in understanding the gender attributes and identify and critically approach and analyze gender in daily walks of life and various domains.

Course Outcomes

1. Identify the key concepts in gender
2. Understand the theoretical perspectives in gender studies.
3. Contemplate gender in Indian Social context
4. Appraise the emerging issues and concerns in gender

Module I: Key Concepts

Gender, Sex, Patriarchy, Gender Discrimination & Gender Inequality, Femininity & Masculinity- Definition and Attributes, Public- Private Dichotomy, Gender Budgeting, Gender stereotypes, Gender Justice, LGBTQ

Module II: Theoretical Perspectives

Feminism, evolution of feminist perspectives- Liberal, Marxian, Radical, eco feminism, Psycho analytic, Men's Studies – Meaning and Nature

Module III: Gender in Indian context

Gender & Family- Gender Socialization, Gender Roles, Gender Division of Labour, Gender & Economy- Feminization of Labour, Glass Ceiling, Women in Un-organized Sector. Challenges of Transgender, Gender & Polity - Women's representation in Politics, Constitutional Safeguards- Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal), Act 2013; Dowry Prohibition Act, 1961, Equal Remuneration Act, 1976, Prevention of Domestic Violence Act, 2005, State Policy for Transgenders in Kerala, 2015, Gender & Media violence, Indecent Representation of Women (Prohibition) Act, 1986)

Module IV: Emerging Concerns

Gender Violence in Family, Workplace and Media, Human Trafficking, LGBT issues

Student activity: Visit to Women's Commission Office, Transgender Cell under Social Justice Department of Government of Kerala.

Essential Readings

- Autobiographies of Transgenders Laxmi, PG Joshi (translator) and R Raj Rao (translator) Me Hijra, Me Laxmi. New Delhi: OUP/ A. Revathi, V. Geetha .(2010). The Truth About Me: A Hijra Life Story. New Delhi: Penguin.
- Chaudhuri, Maitrayee (1996). "Citizens, Workers and Emblems of Culture: An Analysis of the First Plan Document on Women" in Patricia Uberoi (ed), Social Reforms, Sexuality and the State. New Delhi: Sage. Pp. 211-235 3.
- Dube, Leela. (1992). Women in a Matrilineal Muslim Community. In: Mohini Anjum (Ed). Muslim Women in India. New Delhi: Radiant Publishers.
- Dube, Leela (2001). Anthropological Explorations in Gender- Intersecting fields. New Delhi: Sage Publications.
- Engendering Development. A Co-publication of Oxford University Press & World Bank. 2002.
- Gender Equality and Development. (2012). World Development Report. Washington DC : World Bank .
- Holmes, Mary (2007). What is Gender: A Sociological Approach. London: Sage Publications.
- India, Government of India .(1974). Towards Equality : Report of the Committee on the Status of Women.
- Joan, Z .et al (2008). Kaleidoscope of Gender. Sage: California. (Ch 7) 6. Lindsey, L (2011) Gender Roles: A Sociological Perspective. New Delhi: PHI learning (ch-3,8,10,11)
- Kamla Bhasin (1994). Patriarchy. New Delhi: Kali for Women.
- Mukhopadhyay, Swapna (ed). (2011). The Enigma of Kerala Women. New Delhi: The Social Science Press
- McDowell, L. & Pringle, R. (1992). Defining Women: Social Institutions and Gender Divisions. Cambridge: Blackwell Publishers Inc.
- Mead, Margaret .(2001). Male and Female. New York: Harper Collins. 9. Nongbri, Tiplut (2003) Development, Ethnicity and Gender: Select Essays on Tribes in India. Delhi and Jaipur: Rawat Publications.

Semester	V	Type of course	Core 10
Credit	3	Hrs. / Week	3

SG 1545 ENVIRONMENTAL SOCIOLOGY

Aim of the Course:

To study the basic issues and challenges in environmental sustainability and develop an environmental friendly perspective and practices in life

Course outcome

1. Locate the various environmental issues
2. Identify the theoretical foundations in environmental studies
3. Understand how developmental programmes affect the existence of human life
4. Evaluate environmental movements and efforts at environmental conservation

Module I: Environmental Sociology

Origin, Definition, scope, importance of environmental Sociology. Social ecology and its major categories. Use and abuse of the natural resources and bio diversity conservation

Module II: Theoretical foundations of environmental sociology

Views of Durkheim, Weber and Marx. Religious views – Hinduism, Christianity and Islam

Module III: Environmental issues

Issues pertaining to water, air, soil, nuclear hazards, solid waste, sanitation, e-waste, Development Induced Displacement, Global warming, climate change. Ozone depletion

Module IV: Global Environmental Issues and Environmental Movements in India

International cooperation, Earth summit, Kyoto protocol. Major environmental movements in India and Kerala – Narmada Bacho Andolan, Chipko Movement, Appiko Movement, Save Silentvalley, Plachimada Agitation.

Field Visit/ Student Activity: - Students are advised to collect data on the origin, nature, ideology and outcome of an environmental movement in India. Students shall visit ecologically sensitive zones/national parks and submit report on the basis of visit

Pedagogy: - while analyzing Environment and society, emphasis should be laid on to assist the students in recollecting the social and cultural issues and impacts of environment in sociological angle. For effective teaching and meaningful learning illustrations may be drawn from relevant

empirical studies, novels and cinema. To familiarize the students the major social and ecological issues and prospects in present society, the articles written in academic journals and popular journals can be used contemporary environmental issue in Kerala and India and its causes and consequences in the form of a seminar paper or assignment

Essential readings

- Arnold, David and Guha, Ramchandra, (eds.): Nature, Culture and Imperialism, New Delhi:Oxford University Press, 1955.
- Baviskar, Amita : In the Belly of the River: Tribal Conflicts over Development in the Narmada Valley, OUP, Delhi, 1997.
- Bhattacharyya Sukanta. 2014. Environmental Sociology: Indian perspective, Levant Books Delhi: Agricole.
- Gadgil, Madhav and Guha, Ramchandra: Ecology and Equity: The use and Abuse of Nature in Contemporary India, New Delhi: Oxford University Press, 1996, pp.9-191.
- Ghai, Dharam (ed.) 1994, Development and Environment: Sustaining People and Nature. UNRISD: Blackwell Publication.
- Giddens, Anthony. 1996 "Global Problems and Ecological Crisis" in Introduction to Sociology. 2nd Edition. New York: W.W. Norton and Co.
- John Hannigan, Environmental Sociology, Taylor and Francis, 2014
- Katyaj, Jimmy and M.Satake 1989, Environmental Pollution, New Delhi: Anmol Publications.
- King Lesile, McCarthyDeborh,Auriffeille (Ed). Environmental Sociology, From Analysis to Action, 2014, Rowman& Little field publishers
- Mehta S.R. (ed) 1997, Poverty, Population and Sustainable Development, New Delhi: Rawat Publications.
- Merchant Carolyn: Ecology: Key Concepts in Critical Theory, Humanities Press, New Michael Redclift, 1984, Development and the Environmental Crisis, MeheunCo.Ltd. Munshi,Indra.
- Robe White (2004) Controversies in Environmental Sociology, Cambridge University Press,2004
- Schnaiberg Allan, 1980, The Environment, Oxford University Press. N.Y.
- Shardha Singh &Manisha Shukla (2005), Environmental studies. AITBS Publishers Delhi, 2005
- Shiva, Vanadana: Staying Alive Women. Ecology and Survival in India, New Delhi: Kali for Women Press, 1988, pp.1-37, 218-228.
- Shiva. Vandana 1991 Ecology and the Politics of Survival: Conflicts over Natural resources in India. New Delhi: Sage Publications.
- Singh, Gian 1991, Environmental Deterioration in India: Causes and Control, New UNDP, 1987, Sustainable Development : World commission On Environment and World Commission on Environment and Development,1987.

Semester	V	Type of course	Open Course
Credit	2	Hrs. / Week	3

SG 1551.1 LIFE SKILL EDUCATION

Aim of the Course

The aim of the course is to introduce Life Skill Education and to impart various soft skills for day-to-day life

Course Outcomes

1. Identify the importance of Life Skill Education
2. Discuss different elements of soft skills
3. Relate life skills in enhancing capabilities
4. Associate personality with social system

Module I: Introduction to Life Skill Education

Definition and scope of life skill, Life Skill education, Approach of Amartya Sen. Four pillars of Life Skill Education – Learning to know, learning to be, learning to live together, learning to do, Enhancing capabilities through life skill education. Ten core life skills laid down by WHO.

Module II: Soft Skill Development

Types of Skills- Soft skill, hard skill Elements – communication Skill, Critical thinking and Problem Solving, Team Work, Management, Professional Skills, Ethical and Moral values, Leadership skills – Importance and the need for the promotion of soft skill, competency matrix, techniques to improve Soft Skills, Hard Skills and its importance.

Module III: Self and Society

Self, Self-esteem, Self-control, Intelligence- IQ and EQ, Personality and its determinants – Physical, Psychological and social. Adjustment- mature personality, integrated personality. Personality disorders and its types. Conflict resolution, Positive thinking and Assertiveness

Essential Readings

- Abernathy, R and Reardon (2002) Hot tips for Teachers, Zephyr Press.
- Amartya Sen (1999). Development as Freedom, Oxford University Press
- Anna Maria Hoffman; AM Hoffman@Unesco.org
- Behm, CA People Skills, The Core of Performance Improvement, International Performance Improvement Network News Letter 29, p1-11
- Delors Jacques, Learning; The Treasures within, UNESCO, Paris
- Abraham Vijayan and Sunil Kumar (2012) Introduction to Life Skill Education, ISDA Publications.
- Kakkar SB, Educational Psychology, New Delhi, PHI
- World Development Report (2007)
- WHO, Partners in Life Skill Education, Geneva, www.unesco.org.

Semester	V	Type of course	Open course
Credit	2	Hrs. / Week	3

SG 1551.2 MASS COMMUNICATION AND SOCIETY

Aim of the course: The aim of the course is to analyze the link between Mass communication and Society and to introduce some theories of media and communication

Course Outcomes

1. Recognize the basic idea of mass communication and different types of media and communication
2. Understand the different theories of mass media and communication
3. Identify the linkage between media and society

Module I: Introduction to Mass Communication

Nature, Characteristics, Types and Functions of mass media. Folk and traditional media, Print and Visual media, Internet and Blogging media and technology. Relevance of Sociology in Mass Communication

Module II: Theories of Media and Communication

McLuhan's Theory – The Medium is the Message
 Raymond Williams – Communication Revolution
 Habermass – Culture and PublicSpace
 John Thompson – The Media and Society

Module III: Media and Society

Mass media and popular culture, Impact of media on society, globalization of news, computer and communication revolution, commercialization of news, media imperialism, media and politics, media violence against women

Semester	VI	Type of course	Elective
Credit	2	Hrs. / Week	3

SG 1661.1 NGO AND SOCIAL INTERVENTIONS

Aim of the course

The aim of the course is to impart skill in NGO Management

Course Outcomes

1. Familiarized with the role of NGOs in development
2. Understand the functioning of NGOs
3. Critically analyse the approaches by which developmental issues are addressed by the NGOs
4. Impart the skill to run an NGO, prepare a project proposal and funding.

Module I: Introduction to NGOs

NGO – Definition, Characteristics, Types, Historical evolution of NGOs in India, NGOs, Voluntary organizations and nonprofit organizations. NGO as a Third Sector of Development

Module II: Civil Society and Civil Mobilization

Civil society and social welfare, Concept and impact of social mobilization, Role of NGO in social development, Problems of NGO Difference between Government and Non-Government organizations

Module III: Formation of an NGO

Formation of an NGO: Types – as a trust, as a society and as a company. Procedure for formation of an NGO and the registration procedure, Important Legislations – Society Registration Act 1860 and Travancore Cochin Literary Scientific and Charitable Societies Registration Act, 1955

Module IV: Project Formulation and Implementation by NGOs

Meaning of project formulation, Steps in Project formulation – Conceptualization, Planning Formulation of Objectives, Budgeting, Fund raising and evaluation. Preparation of a sample proposal format and check list of preparing a projects proposal

Student activity: Students shall be asked to visit a Non- Governmental organization and study the different levels of activities undertaken by them and submit the findings as an assignment or Seminar paper. They were also encouraged to participate at least 1 week in the activities of an NGO as internship.

Essential Readings

- Nabi (2003), Hand book for NGOs, A Nabi Publication, New Delhi
- Michael Edwards, Alan Fowler (2002). The Earth Scan Reader on NGO management, Earthscan
- Lisa Jordan, Peter Van Tuijl (2007) NGO accountability: Politics, Principles and Innovations, Earthscan
- Ann Hudock (1999), NGOs and Civil Society: democracy by proxy? Wiley Blackwell,
- Julie Fisher (1998), Non- Governments: NGOs and the political development of the Third World, Kumaran Press,
- Fifty Years After Freedom, New Opportunities and Challenges for Voluntary Action in India, Proceedings of the National Assembly of Voluntary Organizations, Held on October 2-4, 1997, By Sebasti L. Raj, Indian Social Institute, Published by Indian Social Institute, 1998
- David Lewis, The management of non-governmental development organizations: an introduction, Routledge, 2001
- R Sooryamoorthy & Gangrade, NGOs in India, New Delhi, Rawat Publications
- Bava, Noorjahan, (ed), NGOs in Development, Theory and Practice, New Delhi, Kanishka

Websites

- <http://www.ac.uk/id21/> <http://www.edc.org/GLG/CapDev/Dosapage.htm> <http://www.intrac.org> <http://www.lse.ac.uk/Depts/global/yearbook.htm> www.oneworld.net
- [http://www.development gateway.org/](http://www.developmentgateway.org/)

Semester	IV	Type of course	Complementary 4
Credit	3		Hrs. / Week 3

SG 1431 WOMEN AND SOCIETY

Aim of the course

The aim of the paper is to examine the importance of Women Studies and to understand the importance of concepts and theories related to women and society .

Course Outcomes

1. Understand the basic concepts related with Women studies
2. Analyse the history of women's movements and the historical roots of feminism
3. Acquire the skills to problematize the taken for granted gender bias and prejudices
4. Evaluate and deconstruct the existing gendered social system.

Module I: Introduction to Women's Studies

Nature, Scope and objectives of women's studies in India. National Committees and Commissions for women, Women's movement in Post Independent India, Women's Studies- An International perspective.

Module II: Concepts and Theoretical Perspectives

Social construction of Gender, Gender and Sex, Gendering, Patriarchy Liberal feminism – Rationality, Freedom, Marxist feminism – production, reproduction, Class, Alienation, Radical Feminism-gender, patriarchy, reproductive Technology, Socialist feminism – Class and gender, Division of Labor, Exploitation

Module III: Major Issues of Women in Contemporary India

Issues Related to Female Children: Female feticide, Female infanticide, Child marriage. Issues Related to Women: Dowry, Divorce, Widowhood, Commercial Sex Workers, Domestic violence, Problems of Elderly and Single Women. Issues Related to Marginalized Women: Problems of Dalit and Tribal Women; Devadasis- discrimination and exploitation in the name of tradition. Problems of Women prisoners, Women living with HIV/AIDS and women who are physically and mentally challenged

Student activity: Prepare a research paper with the help of content analysis on violence against women and children

Pedagogy

Gender is a category of social analysis and is not just a women's question. It should be treated as

a participatory movement to make the world a better place to live in. It should be emphasized that feminism is about power as there are other discourses on power. Examples from the Indian context should be given from all religious communities, regions, cultures and classes to highlight the position of women under them and also to focus on diversity and difference.

Essential Readings

- Engendering Development (2002). A Co-publication of Oxford Univ Press & World Bank.
- Joan, Z .et al (2008). Kaleidoscope of Gender. Sage: California. (Ch 7)
- Lindsey, L (2011) Gender Roles: A Sociological Perspective. New Delhi: PHI learning (ch- 3,8,10,11)
- KamlaBhasin (1994). Patriarchy. New Delhi: Kali for Women.
- Kamla Vasin (1994) Patriarchy, New Delhi: Kali for Women,
- McDowell, L. & Pringle, R. (1992). Defining Women: Social Institutions and Gender Divisions. Cambridge: Blackwell Publishers Inc.
- Mead, Margaret .(2001). Male and Female. New York: Harper Collins.
- Nongbri, Tiplut (2003) Development, Ethnicity and Gender: Select Essays on Tribes in India. Delhi and Jaipur: Rawat Publications.
- Mukhopadhyay, Swapna (ed). (2011). The Enigma of Kerala Women. New Delhi: The Social Science Press
- Oakley, Ann. (1976) .The Housewife. UK : Penguin Books. S. Jackson & Jones (Ed). (1988). Contemporary Feminist Theories, Edinburgh: Univ. Press.
- Tong.R, (1989). Feminist Thought, Sydney: Unwin,
- VeenaMajumdar (1985) Emergence of Women's Question in India & The Role of Women's Studies, CWDS Occasional Paper -7.

Semester	VI	Type of course	Elective
Credit	2	Hrs. / Week	3

SG 1661.3 SOCIOLOGY OF HEALTH

Aim of the Course

To explore social epidemiology as a subject of importance and interest to public health

Course Outcomes

1. Understand the social background of health and diseases
2. Identify of the importance of social and medical interventions for the prevention and control of diseases
3. Acquire knowledge in recognizing the need for effective health policies and programmes for the promotion and protection of health
4. Imparting skill to manage the pandemic situation along with social responsibility

MODULE I: Social Medicine and Social Epidemiology

Concept of Public health: History and development of social medicine. Components of social medicine: – social pathology, social diagnosis and social sciences. Concept of epidemiology: Definition and objectives, and scope of Social epidemiology.

MODULE II: Concept of Health and Disease

Definition and dimensions of health: – Physical mental social spiritual emotional and occupational. Concept of well-being – Heredity, environment, life style, socio economic status, health and family welfare services, aging of population, gender and other factors such as health related systems (Food and agriculture , education and social welfare). Concept of disease causation – Germ theory of diseases, epidemiological triad, multi factorial causation of diseases, natural history of disease and levels of prevention

MODULE III: Maintenance and Inequalities in Health

Healthy Environment – personal Hygiene, proper nutrition early diagnosis and treatment .Physical health and mental Health. Different levels of inequalities in health. Social cost of illness: – Social stigma, Discrimination, Isolation, Marginalization.

MODULE IV: Health policy in India

Health policies and health indicators for sustainable development: Challenges to health care system – Commercialization of health care, need for quality Maintenance

Student Activity: *Students are advised to visit a hospital and observe maintenance and inequalities in health. Students should participate in voluntary activities such as awareness class, blood donation, Documentary, short film etc.*

Essential reading

Albrecht, Gary, L & Fitzpatrick, R (1994) *Quality of Life in Health care : Advances in Medical*

Sociology, Jai Press, Mumbai

Coe, Rodney, M (1970,) *Sociology of Medicine*, McGraw Hill, New

York Cockerham, William, C, (1997) *Medical Sociology*, Prentice Hall,

New Jersey

Cockerham, Willam, C, (1997) *Reading in Medical Sociology*, Prentice Hall, New Jersey

Conard, Peter, et al. (2000) *Handbook of Medical Sociology*, Prentice Hall, New Jersey

Dasgupta, R (1993) *Nutritional Planning in India*, NIN, Hyderabad

Nayar, K R (1998) *Ecology and Health: A System Approach*, APH Publishing,

New Delhi Venkataratnam, R (1979) *Medical Sociology in an Indian Setting*,

Macmillan, Madras.

Peter E.S Freund & Meredith. B, McGuire (1995) *Health, Illness & Social body- A critical*

Sociology, Prentice hall inc.

Janardan Subedi & Eugene B. Gallagher (1996) *Society, Health & Disease-Transculture Perspectives*, ,

Prentice hall inc.

K. Park (2013) *Park's textbook of Preventive & Social medicine*, , M/S Banarsidas Bhanot Publishers, Jaipur, .

Richard T Schaefer (2011), *Sociology : A Brief Introduction*, Ninth Edition, Tat McGraw Hill Education Pvt. Ltd, New Delhi.

Semester VI
Credit 4

Type of course Core II
Hrs. / Week 5

SG 1641 SOCIAL GERONTOLOGY

Aim of the Course: To develop an understanding about the concepts, perspectives and problems of ageing as well as importance of Social Gerontology as a discipline in support of the elderly.

Course Outcomes

1. Understand Social Gerontology as a Discipline
2. Aware about the various concepts and perspectives on ageing
3. Acquire skills to analyse the problems of elderly providing a better scope for Intergenerational Solidarity
4. Evaluate the various provisions and programmes for elderly in India

Module I: Introduction to Social Gerontology

Emergence, Nature & Scope of Social Gerontology. Major Concepts in Gerontology- Gerontology Social Gerontology, Bio-Gerontology, Geriatrics, Age, Ageism, Age Identity, Age Stereotype, Cohort, Assisted living, Types of ageing:- Positive, Proximal, Productive, Passive, Active and Successful ageing, Filial responsibility, Intergenerational practice.

Module II: Perspectives on Ageing

Ageing process- Biological, Psychological and Sociological. Biological Theories –Mutation theory. Psychological theory -Theory of loneliness. Sociological Theories- Disengagement Theory. Life Course Perspective. Intergenerational Solidarity Perspective :Vern Bengtson.

Module III: Problems of Elderly

Demographic Profile of Elderly. - Global, National and State level. Problems of the aged- Physical, Psychological, Economic and Social problems- Elderly Abuse and Types of abuses. Empty nest Syndrome, Detached Attachment, Digital divide, Social Exclusion, Euthanasia. Problems of Elderly under institutional and home care, Elderly facing morbidity, disability and disasters.

Module IV

Care & Support Mechanisms for Elderly

Govt policies and programmes for the welfare of elderly. Constitutional Provisions and Legislations; Maintenance and welfare of parents and senior citizens Act, 2019. Role of family, Peer-group, NGOs and other Alternative Support Mechanisms. Neighbourhood relationships Structure and Functions of Old age homes in India, Role of Pakalvedu. NGO initiatives.

Student Activity:

Students are advised to prepare a report after visiting an old age home in their locality (Spend at least 5 hours) or conduct case studies of elderly people relating to problems of aged and the social security measures/support mechanisms availed by them .

Essential Reading

- Ajay Kumar Sahoo, Gavin and IrudayaRajan (ed) (2009). Sociology of Ageing A Reader, New Delhi: Rawat Publications
- Sarah Harper (2006). Ageing Societies: Myths, Challenges and Opportunities, New Delhi: Hodder Arnold
- KrishnanandSanwal,(2008) Fundamentals of Gerontology, New Delhi : Akansha Publishing ,
- James M H and Robert F A (ed) (2003). Care of the aged: Bio medical ethics reviews Human Press Totowa.
- John B &Shelin (ed). (2003). Ageing in Society. New Delhi: Sage
- Leslie M and Suzanne K (2001). Ageing the social context, New Delhi: Pine Forge Press
- Micheal R R (1991), Evolutionary Biology of Age, OUP , New York
- Phoebe S L &IrudayaRajan (ed)(2005). An Ageing India , Perspective, Prospects and Policies, New Delhi :Rawat publications.
- Bose A B (2006). Social Security for the old: Myth and Reality, New Delhi Concept Publishing Company
- Harry R. M. (1994). Ageing: Concepts and Controversies, New Delhi: Pine Forge Press

Semester	VI	Type of course	Core 14
Credit	3	Hrs. / Week	4

SG 1644 SOCIALANTHROPOLOGY

Aim of the Course

This course intends to familiarize the students about the discipline of anthropology in general and social anthropology in particular. The first module of the course in this connection offers an overview about the origin and development of social anthropology in 19th century. The second module of the course looked at different methods used in social anthropological researches. Being one of the major research area of social anthropological researches, the course in its third and fourth module familiarize students about ethnic communities, their features, problems and state policies for tribes in India.

Course Outcomes

1. Comprehend the basics of social anthropology as a discipline
2. Understand the different methods adopted in social anthropology
3. Familiarize the social and cultural life of the tribal society in India .
4. Discuss the transformations in Tribal society of India .

Module I: Nature and Scope of Social Anthropology

Origin of social anthropology, Meaning of social anthropology, Nature of social anthropology, Scope of social Anthropology, Branches of social anthropology (Social and Cultural anthropology)

Module II: Methods of social Anthropology

Historical method, Comparative methods, and Ethnography, Case study, Participant and non-Participant observations, Focus group interview.

Module III: Tribes in India and Kerala

Definition of tribes, Characteristics of tribes, Types of tribes, Tribal zones in India, Tribes in Kerala, Major tribal problems in Kerala.

Module IV: Policies and Approaches of Tribal development

Policy of Isolation, Policy of assimilation, Policy of integration

Field Visit: Visit at least one tribal settlement in Kerala and submit a report based on the Socio-cultural and economic organization and their problems

Essential Readings

- Chandra, R. (2004). *Minority: social and political conflict*. Delhi: Isha Books.
- Prasad, Archana (2003) *Against Ecological Romanticism, Three Essays* Collective, New Delhi,
- Iyer, L.K.Anathakrishna (1909, 1981). *The Tribes and Castes of Cochin*, Cosmo Pub. N.Delhi
- Tripati S N. (1998) *Tribals in India: The Changing Scenario*, Discovery Pub.
- Bhandari, B B (1997) (Ed) *Tribes and Government Policies*, Cosmo Pub.,
- Chacko M Pariyaram (2005). *Tribal Communities and Social Change*, SagePub. N.Delhi.,
- Joshi, Vidyut (1998). *Tribal Situation In India: Issues in Development*, Rawat.
- Elvin, Verrier (1964). *The Tribal World*, Oxford University Press.
- Rath, Govinda Chandra (2006). *Tribal development in India*, Sage.
- LodhaNeetha (2003). *State of Tribal Women*, Mangal Deep Pub,
- JaipurBeals and Hoijer (1977). *An introduction to Anthropology*, Macmillan

PY1551.5. ENERGY PHYSICS

(54 HOURS)

Unit 1 (7 hrs)

Various forms of energy – renewable and conventional energy systems – comparison – coal, oil and natural gas – availability – applications – merits and demerits.

Unit 2 (10 hrs)

Solar energy - Solar radiation measurements, solar energy collector, principle of the conversion of solar radiation in to heat, Solar energy storage, solar heaters, space cooling, solar ponds, solar cookers, solar distillation, solar furnaces, solar green houses, merits and demerits of solar energy.

Unit 3 (9 hrs)

Wind energy: Basic principle of wind energy conversion, basic components of wind energy conversion system (WECS), wind energy collectors. application of wind energy.

Unit 4 (9 hrs)

Biomass energy, classification, photosynthesis, biomass conversion process. Gobar gas plants, wood gasification, ethanol from wood, merits and demerits of biomass as energy source

Unit 5 (9 hrs)

Energy from Oceans and Chemical energy resources: Ocean thermal energy Conversion, energy from waves and tides – basic ideas, nature, applications, merits and demerits.

Unit 6 (10 hrs)

Patterns of energy consumption in domestic, industrial, transportation and agricultural sectors –energy crisis and possible solutions – energy options for the developing countries – energy storage-primary and secondary cells – fuel cells (basics) – impact due to non-conventional energy sources – global warming.

Books for Study:

1. Non – Conventional Energy Resources: G. D. Rai, Khanna Publishers,2008.
2. Solar energy: G.D. Rai, 5th edition, 1995.
3. Solar Energy Fundamentals and application: H.P. Garg and J. Prakash,

UNIVERSITY OF KRALA
SYLLABUS FOR B.Sc. CHEMISTRY
FIRST DEGREE PROGRAMME
2020 Admission onwards

Semester	I
Course	Core course-I
Course name	INORGANIC CHEMISTRY I
Course Code	CH 1141
Credit	2
Hours	36 hours
Lecture-Tutorial-Lab	2-0-2

CO No.	COURSE OUTCOME <i>Upon completion of this course, the students</i>	Cognitive Level	PSO No.
1	Discuss the course of development of structure of atom.	U	PSO1
2	Apply rules for filling electrons in classifying elements into s, p, d and f blocks	A	PSO10
3	Define various scales of electronegativities and their applications	U	PSO10
4.	Define Effective nuclear charge and Slater's rules	U,A	PSO10
5	Discuss about diagonal relationship and anomalous behaviour of hydrogen and other first element in each group.	U	PSO4
6	Correlate and predict general properties of s and p block elements based on their electronic configuration.	A	PSO4
7	Realise applications of s and p block elements in sustainable and renewable energy sources.	A	PSO14
8	Define various concepts of acids and bases.	U	PSO11
9	Understand reactions in non aqueous solvents.	U	PSO11
10	Realise various causes, effects and control measures of environmental pollution.	E	PSO13
11	Review national movements for environmental protection.	U, A	PSO21

MODULE	COURSE DESCRIPTION	Hrs	CO No.
1	Atomic Structure and Periodicity	9	
1.1	Introduction to structure of atom, Rutherford and Bohr model of atom,	1	1
1.2	Dual nature of electron-de Broglie equation-matterwaves and electromagnetic waves. Experimental verification by Davis and Germer method, Heisenberg's uncertainty principle- expression and significance.	1	1
1.3	Wave mechanical concept of the atom-Schrodinger	1	1

	equation and its significance (derivation not required.)		
1.4	Quantum numbers- Pauli's Exclusion principle- Aufbau Principle- Hund's rule- Electronic configuration of atoms- classification of elements into s,p,d and f blocks-	2	1
1.5	Electronegativity- Pauling's scale, Mulliken and Allred-Rochow scale(including numerical problems),	2	4
1.6	Effective nuclear charge, Slaters rule and its applications, diagonal relationship and anomalous behavior of first element with other elements.	2	4,5
2	Representative elements	9	
2.1	General properties of s and p block elements, Hydrogen – isotopes and its applications- uses as a fuel, water gas	2	6
2.2	Physical properties- atomic radii, ionization enthalpy, electron negativity, electron affinity, Flame colouration, inert pair effect	2	6
2.3	Chemical properties- solubility and thermal stability of alkali and alkaline earth metal oxides, sulphates and hydrides	2	6
2.4	p-block elements- oxides of nitrogen and phosphorus, oxyacids of halogens	1	6
2.5	Allotropism – carbon, sulphur and phosphorus	1	6
2.6	Applications- lithium battery, cesium in photovoltaic cells, selenium in xerography and barium x-ray	1	7
3	Acids, Bases and non- aqueous solvents	9	
3.1	Arrhenius concept, Lowery –Bronsted, Lewis concepts and Lux Flood concept and its limitations,	2	8
3.2	SHAB principle and its applications,	1	8
3.3	Non – aqueous solvents: General properties- classifications- self ionization and leveling effect-	2	9
3.4	Reaction in non-aqueous solvents- protic and aprotic non-aqueous solvents- examples-solutions of metal s in liquid ammonia- self ionization of liquid ammonia-liquid SO ₂ , liquid HF, alkali metals in liquid ammonia.	4	9
4	Environmental chemistry- Air, water and soil pollution	9	
4.1	Air pollution- Air pollution caused by fire works, harmful effects of fire works, acid rain, green house effect, smog- classic and photochemical smog	2	10

	Ozone layer depletion, ozone hole, protection of ozone umbrella. Management of air pollution.		
4.2	Water pollution: causes- heat, industrial waste, sewage water, detergents, agricultural pollutants Treatment of industrial waste water- Activated charcoal, synthetic resins, reverse osmosis and electro dialysis Quality of drinking water- Indian Standard and WHO standard- Dissolved oxygen- BOD , COD.	3	10
4.3	Soil pollution: pesticides, fertilizers, Industrial waste, Plastic. Control of Plastic threat- importance of Plastic identification codes and Plastic recycling, use of biodegradable plastics (PGA,PLA and PHBV(mention only)	2	10
4.3	Control of pollution. Pollution Control Board – Duties and responsibilities Mention environmental movements (Plachimada,Silent valley, movement against Endosulfan, Narmada Bachavo Andolan and Chipko movement)	2	11

Text Books

1. B.R.Puri, L.R.,Sharma, K.C. Kalia, Principles of Inorganic Chemistry, Milestone Publishers New Delhi,2010
2. F.A.Cotton, G. Wilkinson, Advanced Inorganic Chemistry, Wiley, India(P)Ltd
3. J.D.Lee, Concise Inorganic Chemistry,5thEdn. Wiley, India(P)Ltd.
4. A.K.De,Environmental Chemistry,New Age International(P) Ltd. New Delhi
5. A.K.Ahluwalia, Environmental Chemistry, Ane Books, India, New Delhi.

For Further Reading

1. M.C.Day and J Selbin, Theoretical Inorganic Chemistry,2nd Edn.,Reinhold Book Corp.
2. S.Prakash,G.D.Tuli, S.K Basu, R.D.Madan,Advanced Inorganic Chemistry, Vol. 1.,S Chand
3. J.E.Huheey,E.A.Keiter, R.L.Keiter, O.K.Medhi. Inorganic Chemistry, 4th Edn. Pearson, 2006
4. S.S.Dara, A Textbook of Environmental Chemistry and Pollution Control, 8th Edn. S Chand& Sons, New Delhi.
5. M.N.Greenwood, A .earnshaw, Chemistry of the Elements, 2nd Edn. Butterworth, 1997.

6. V. Raghavan, Materials Science and Engineering, a first course, PrenticeHall, 6th edition, 2015.
7. C. N. R. Rao and K.J. Rao, Phase Transition in Solids, McGraw-Hill, 1984.
8. D. M. Adams, Inorganic Solids: An Introduction to concepts in Solid State Chemistry, Wiley, 1974.
9. E. A. O. Ebsworth, Structural methods in chemistry, Blackwell Scientific Publications, 2nd edition, 1991.
10. E. A. V. Ebsworth, D.W.H. Rankin and S. Craddock, Structural methods in Inorganic Chemistry, 1986.
11. F. Vogtle, Supramolecular Chemistry, John Wiley & Sons, Chichester, 1991.
12. J. M. Lehn, Supramolecular Chemistry- Concepts and perspectives, VCH, 1995.
13. D. E. Fenton, Biocoordination Chemistry, Oxford University Press, 1997.
14. R. W. Hay, Bioinorganic Chemistry, Ellis Horwood, 1984.
15. R. M. Roat-Malone, Bioinorganic chemistry: A short course, Wiley, Hoboken, N.J., 2002.
16. D. A. Phipps, Metals and Metabolism, Clarendon press, Oxford, 1976.
17. I. Bertini, H. B. Gray, S. J. Lippard and J. S. Valentine, Bioinorganic chemistry, University Science Books, Sausalito, 2007.

CH 242 (b) ORGANIC CHEMISTRY IV

Total 90 h

CO No.	Expected Course Outcomes <i>Upon completion of this course, the students will be able to</i>	Cognitive Level	PSO No.
1.	define secondary metabolites from plants and animals.	R	1
2.	explain the biosynthesis of terpenes and sterols, illustrate the structural elucidation and synthesis of natural products.	U, An	1
3.	list the forces involved in molecular recognition and recognize molecular receptors.	U	1
4.	quote molecular recognition events in biological systems.	U	1
5.	discuss the methods of creating combinatorial libraries and its processing to locate lead molecule.	U	1
6.	explain the various stages in drug development process, and outline the synthesis of paracetamol, phenobarbital, diazepam, sulphamethoxazole, benzylpenicillin, and chloramphenicol.	R, U, C	1
7.	construct a solid phase synthesis of tripeptide from any three amino acids, explain protection, deprotection and automated synthesis of peptides and nucleotides.	U, C	1
8.	describe twelve principles green chemistry.	R	1, 4
9.	illustrate reactions in which green chemistry principles are applied and calculate atom economy.	Ap, An	1, 4

Module	Course Description	No. of Hrs	CO No.
--------	--------------------	------------	--------

1.0	Chemistry of natural products and biomolecules	18	
1.1	Introduction to primary and secondary metabolites in plants. Extraction methods of chemical constituents from plants, such as fractionation using solvents, specific extraction of alkaloids and supercritical fluid extraction. Characterizations of isolated compounds (terpenes, sterols, alkaloids, carbohydrates, flavonoids and poly phenols) by colour reactions and spray reagents.	6	1
1.2	Biosynthesis of terpenes from acetyl coenzyme A, sterols via squalene.	3	2
1.3	Determination of carbon skeleton of alkaloids (Hofmann, Emde and Von Braun degradation methods). Structural elucidation of ephedrine, atropine.	3	2
1.4	Classification of pigments, structure elucidation of β -carotene.	3	2
1.5	Synthesis of quercetin, synthesis of testosterone, androsterone, progesterone (from cholesterol), estrone.	3	2
2.0	Molecular recognition and supramolecular chemistry	18	
2.1	Introduction to supramolecular chemistry. The concepts of molecular recognition, host, guest and receptor systems. Forces involved in molecular recognition. Hydrogen bonding, ionic bonding, π -stacking, van der Waals and hydrophobic interactions	4	3
2.2	Introduction to molecular receptors, tweezers, cryptands and carcerands, cyclophanes, cyclodextrins and calixarenes- typical examples.	4	3
2.3	Non-covalent interactions in biopolymer structure organization. Role of self-organization and self-association in living systems-tobacco mosaic virus, cell membrane.	4	4
2.4	Importance of molecular recognition in DNA and protein structure, their function and protein biosynthesis – basic aspects only.	4	4
2.5	Supramolecular systems like Organic zeolite, Clathrate hydrates of gases, Helicates, liquid crystals – elementary idea only	2	4
3.0	Medicinal chemistry	18	
3.1	Combinatorial organic synthesis, introduction, methodology, automation, solid supported and solution phase synthesis, study of targeted or focused libraries and small molecule libraries. Application - drug discovery.	5	5

3.2	Drug design and development-Discovery of a drug, a lead compound. Development of drug-Pharmacophore identification, modification of structure, structure-activity relationship, structure modification to increase potency. Lipophilicity.	5	6
3.3	Computer assisted drug design. Receptors and drug action. Natural products and drug development. Different classes of drugs with examples.	4	6
3.4	Synthesis of paracetamol, phenobarbital, diazepam, sulphamethoxazole, benzylpenicillin, chloramphenicol.	4	6
4.0 Chemistry of biopolymers and polymers			
4.1	Peptide bond formation methods. SPPS, Mechanism, amino and carboxy protection in SPPS. Synthesis of tripeptides, A, G, C, T, U, adenosine, ADP and ATP. Automated polypeptide and oligonucleotide synthesis.	6	7
4.2	Structure organization of proteins and poly nucleotides. Protein sequencing by Edmans method. Protein denaturation.	6	7
4.3	Synthesis of stereo regular polymers. Ziegler-Natta catalyst. Polymers in organic synthesis - supports, reagents and catalysts. Biodegradable polymers.	6	7
5.0 Green chemistry			
5.1	Twelve principles of green chemistry. Green chemical strategies for sustainable development- Reaction mass balance, atom economy evaluation for chemical reaction efficiency, green solvents, reaction media- Synthesis under water, solventless, fluorous and ionic liquid media.	6	8, 9
5.2	Synthesis using scavenger resins, catalysis and biocatalysis. Green computation. Green processes-microwave synthesis- fundamentals of microwave synthesis - Two principal mechanisms for Interaction with matter - The Microwave Effect with examples - Single-Mode and Multimode Microwave cavities.	6	8, 9
5.3	Microwave technology-Techniques and applications. Sonochemical synthesis. Applications of sonication in the synthesis of organic compounds.	6	8, 9

References

1. S. V. Bhat, B. A. Nagasampagi, M. Sivakumar, Chemistry of Natural Products, Narosa, 2005.
2. N. R. Krishnaswamy, Chemistry of Natural Products a unified approach, Universities Press, 1999
3. O. P. Agarwal, Natural products Vol 1 and 2, Goel publishing, 2010.
4. G. R. Chatwal , The Chemistry of natural products Vol 1 and 2, 1990.