Courses on Professional Ethics ,Gender, Human Values ,Environment and Sustainability

S.No.	New Course Name	Course Code	Recommended Level	Remarks
Gender Skills				
1	Women, Criminal Law & Law Relating to Child	LB 605	UG	Gender Sensitivity
2	Gender Justice	BALLB405	UG	Gender Sensitivity
3	Gender Studies	MA EN 303	PG	Gender Sensitivity
4	Law related to women and child	BL705	UG	Gender Sensitivity
Environment and Sustainability				
11	Environmental Law	LB 402	UG	Environment and Sustainability
12	Environmental Studies	BBALLB106	UG	Environment and Sustainability
13	Environmental Law	BBALLB603	UG	Environment and Sustainability
14	Environmental Studies	BALLB106	UG	Environment and Sustainability
15	Environmental Studies and Disaster Management	ENVS-121	UG	Environment and Sustainability
16	Environmental studies	BCA401	UG	Environment and Sustainability
17	Environmental studies	BCA402	UG	Environment and Sustainability
18	Environmental studies	BA 109A	UG	Environment and Sustainability
19	Environmental Geography	BAGE207A	UG	Environment and Sustainability
20	Disaster Management	BAGEDSE3BA	UG	Environment and Sustainability
21	Life Science and Environment	BT304	UG	Environment

22	Life Science and Environment	CH201	UG	Environment and Sustainability
23	Environmental studies	BBA205	UG	Environment and Sustainability
24	Environmental studies	BBA110	UG	Environment and Sustainability
25	Environmental science	BB205A	UG	Environment and Sustainability
26	Environment & safety management	MBA 253	PG	Environment and Sustainability
28	Environmental studies	B.Com (H)204	UG	Environment and Sustainability
30	Life Science and Environment	BSC205	UG	Environment and Sustainability
32	Environmental studies	BSC204A	UG	Environment and Sustainability
34	Environmental Chemistry	MSCH104	PG	Environment and Sustainability

Human values and Ethics				
1	Human Rights Law and Practice	LB 605	UG	Human values
2	Law of Human Rights	BBALLB804/BALLB804	UG	Human values
3	Human Values & Ethics	HVE-111	UG	Human values
4	Business Ethics & corporate social responsibility	MBA 207	PG	Business ethics
5	Business Ethics & corporate social responsibility	MBA 107	PG	Business ethics
6	Law of Human Rights	BALLB804	UG	Human values
7	Human rights and professional ethics	HSM102A	UG	Human values

LB 605 (B) Women, Criminal Law & Law Relating to Child

Course Objective: It is now for centuries that the women in India have suffered in the society. Even after 50 years of Adoption of the Constitution, for women, equality with man appears to be,a distant mirage to be reached. Effective political representation of women in Legislature and other forums too has become a difficult proposition to be acceptable Breach of her personality, through various forms of violence, too has not subsided. The course will Study, what are the legal provisions enacted to ameliorate theses situations with special emphasis on Indian Municipal Law And what is the scope and shortcomings in the existing legal regime in this regard.

UNIT-I	Women in Pre-Constitution Period: Social and Legal Inequality; Social Reform Movement in India; Legislative response in India. Women & children in Post-Constitution Period: Provisions of Constitution of India; Preamble, Art 14, 15,23, and Part IV; Legal Measures in relating to Child Labour; Women and Political Representation.
UNIT-II	Different Personal Laws- Unequal Position of Indian Women-Uniform Civil Code; Sex Inequality in Inheritance Rights: Right of Inheritance by birth for Sons and not for Daughters; Inheritance under Christian Law; Inheritance under Muslim Law; Matrimonial Prope.
Unit- III	Law of Divorce - Christian Law-Discriminatory Provision; Muslim Law-Inheritance divorce Women and Social Legislation: Dowry Prohibition Law; Sex Determination Test, Law relating to Prevention of immoral Trafficking in Women Act.
Unit- IV	Women and Criminal Law: Adultery; Rape; Outraging the Modesty of Women; Kidnapping; Sati Prohibition Law; Law relating to Domestic Violence; Law relating Eve-Teasing; Indecent Representation of Women Act.
Unit- V	Women and Employment: Factories Act- Provisions relating to women; Maternity Benefit Act; Equal Remuneration Act; Law Relating to Sexual Harassment at Working Place; NCW-Aims, Functions and Performance.

BALLB405-GENDER JUSTICE

Objectives: This course will provide an in-depth exposure to current advocacy efforts to advance Gender Justice.

Unit I	An Introduction • Gender justice- meaning and nature • Women in ancient, medieval and modern India: An overview • Women in current Scenario • Women's Studies and the Women's Movement.
Unit II	Legislation and Gender Justice • Women's rights as human rights • Women's Rights in the Indian Constitution • Women's Rights in the Indian Criminal Law & Other Legislations • Women's Rights to property (in Personal Laws) • Women's Rights in Labour Laws
Unit III	Feminist Theories • Early feminist thinkers • The period of silence • Recent trends in feminist thinking • Different Schools of feminist through in the Indian contest
Unit IV	Gender and Mass Media • Definition of gender, difference between sex and gender • Feminist terminology, stereotyping, patriarchy, silencing, marginalisation, etc. • Various forms of mass media. Print media, radio, visual, new media-internet, feminism • and cyber space, texting, SMS and cell phone usage. • Influence of media in society, patriarchy in operation, use of feminist methods for • critiquing media representation, practice sessions.

Recommended books:

- Krishnaraj, Maithreyi (Edc). Women and Development: The India Experience.
- Mumbai, Rawat, 1988.
- Iyer, Padma. Women in Developing Countries. Jaipur: Aavishkar, 2006
- Myers, K.A., Anderson, C.D and Risman. Feminist Foundations London and United Kingdom: Sage, 1998

MAEN 303: **Gender Studies**

Course Objective	Gender Studies sets itself a larger concern than feminism. It engages with traditional positions, their questionings in both political and national discourses, emerging androgynies which blur boundaries, transgressive desire and psychoanalytic attempts at understanding both femininity and masculinity

Unit 1.	**Questioning Tradition and Hegemony** Tarabai Shinde: "StriPurushTulana" (A Comparison of Men & Women) pp 223-235, Vol I From Susie Tharu and K. Lalitha ed: *Women Writing in India Vol I* OUP, New Delhi, 1991. Virginia Woolf: "The Daughters of Educated Men" From *Three Guineas* (*Women in Patriarchy,* Ed. Jasbir Jain) Judith Butler: "Bodies that Matter" (Chapter-1)From Bodies that Matter: On the Discursive Limits of "Sex" (1993)
Unit- 2	**Colour, Gender and Nation** bell hooks: Black Women and Feminism (*Women in Patriarchy,* Ed. Jasbir Jain) Partha Chatterjee: "The National Resolution of the Women's Question" (from *Recasting Women,* Kali for Women) Sara Suleri: "Women Skin Deep"
Unit- 3.	**Literary Reflections** Edward Albee: *Who's Afraid of Virginia Woolf?* Vaidehi: "Soliloquies of Saugandhi" *Contemporary Indian Short Stories* (Series IV) Bessie Head: "Property" *Women in Patriarchy*
Unit- 4.	**Gender: Cultural Dimensions** Gustav Flaubert: *Madame Bovary*

Suggested Readings

1. Kakar, Sudhir. *Intimate Relations: Exploring Indian Sexuality* (1989) OUP Paperback, 1990. McDowell, Linda. *Gender, Identity and Place.*

Irigaray, Luce. *Sexes and Genealogies*. New York: Columbia, 1993. Tanner, Tony. *Adultery in the Novel*

BL705 Law Relating to Women & Child

Course Objective:
The objective of this paper is to focus on concept and classification of law relating to women & child.

UNIT-I	**Legal Position of Women in Pre-Independence Period :** (a) Legal Position of Women in Ancient India, (b) Legal Position of Women in Medieval India, (c) Legal Position of Women in British India
UNIT-II	**Women's Right and Indian Constitution :** Constitutional Provisions Concerning Equality and Protection of Women in Chapters of Fundamental Rights and Directive Principles. 3. U.N. Convention on Elimination of Discrimination Against Women, 1979. 4. U.N. Machinery for Advancement of Women's Equality and Women's Welfare. (a) International Commission on Status of Women, (b) CEDAW
Unit- III	**Social Legislation for Women** : Dowry Prohibition Act, 1961, Penal Remedy to Indian Women – (a) Dowry Crimes and I.P.C. 1860. 1. Cruelty Against Married Women (Section 498 A) 2. Offence of Dowry Death (Section 304 B) (b) Rape and Sexual Crimes – 1. Criminal Law Amendment Act 2013 (Nirbhaya Act 2013), 2. The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.
Unit- IV	**Law Relating to Child** : Legal protection to child, Child and criminal liability, State responsibility for the education of child, Family relations and child, Legal control of child labour, Discrimination against female child, child and contracted liability.

Recommended Readings:

Bare Acts:

1. Dowry Prohibition Act-1961
2. Criminal Law Amendment Act-2013
3. Law Related to Women & Child, Avtar Singh,Universal Law Publication

LB 402 Environmental Law

Course Objective: Environmental problems have attained alarming proportions It is essential to sensitize the students to environmental issues and the laws The important principles in the field like intergeneration equity, carrying capacity, sustainable development and precautionary, polluter pays principles are to be appreciated The law in practice is to be analyzed and evaluated The course is designed towards these objectives

UNIT-I	The Water (Prevention and Control of Pollution) Act, 1974 .The Water (Prevention and Control of Pollution) Act, 1974 Water Pollution: Definition, Central and State Pollution Control Boards :Constitution, Powers and Functions, Water Pollution Control Areas, Sample of effluents: Procedure; Restraint order, Consent requirement: Procedure, Grant/Refusal, Withdrawal, Citizen Suit Provision.
UNIT-II	The Air (Prevention and Control of Pollution) Act, 1981: Air Pollution – Definition, Central and State Pollution Control Boards – Constitution, Powers and functions, Air Pollution Control Areas, Consent Requirement – Procedure, Grant/Refusal, Withdrawal, Sample of effluents – Procedure; Restraint order.
UNIT-III	The Wild Life (Protection) Act, 1972: Authorities to be appointed and constituted under the Act, Hunting of Wild Animals, Protection of Specified Plants, Protected Area, Trade or Commerce in wild animals, animal articles and trophies; Its prohibition.
UNIT-IV	Environmental (Protection) Act, 1986 Objects & Reasons of the Act, Meaning of 'Environment', 'Environment Pollutant', 'Environment Pollution' Powers and Functions of Central Govt to issue directions, Control & abatement of Environmental Pollutions; Penalties & Procedures.

BBALLB 106: Environmental Studies (half credit)

Objective: This course provides basic knowledge about the environment and its allied problems. Developing an attitude of concern for the environment. Motivating to participate in environment protection and environment improvement. Acquiring skills to help the concerned individuals in identifying and solving environmental problems.

Unit I	Definition, Principles and scope of Environmental Science, • Earth, man and Environment ,Eco system, Physico chemical and Biological factors in the environment, • Geographical classification and Zones, Structure and composition of Atmosphere, hydrosphere, lithosphere and biosphere. • Natural resources, conservation and sustainable development.
UNIT II	Definition principles and scope of Ecology, • Human ecology and human settlement. Evolution, origin of life and speciation. • **Ecosystem**- Structure and Functions, Abiotic and Biotic components, energy flows and Food Chains • **Species**- Definition, Hotspot's of Bio diversity, Strategies for Bio Diversity Conservation, National Parks and Sanctuaries, Gene pool
UNIT III	Sun and Source of Energy, solar radiation and its spectral characteristics; • fossil fuel classification, composition physico– • chemical characteristics and energy. • Content of coal petroleum and natural gas, • Hydro-electric power, Wind, geothermal energy, nuclear energy
UNIT IV	• **Air**- Natural and Anthropogenic sources of pollution. Primary and secondary pollutants. Transport and diffusion of pollutants, methods of monitoring and control of Air Pollution. Effects of Pollution on human beings, plants, animals, materials and climate, Acid Rain. • **Water**- Types, sources, impact and methods of controlling Water Pollutionconsequences of Water pollution, Waste water treatment. **Soil**- Meaning, industrial waste and heavy metals and interactions with soil components, soil microorganisms and their functions. **Noise** - Sources of Noise pollution, measurement of noise and indices, impact of noise on human health, noise control and abatement measures **Marine** - Sources of Marine pollution and control, criteria employed for disposal of pollutants in marine system- coastal management

Recommended Readings:

- A Text book of Environmental Studies by Erach Bharuch. University Press(I) Hyderabad
- Introduction to Environmental Science by Y Anjeneyulu and Prof.Narmishima Rao. BS Publication, Hyderabad
- Perspective in Environmental Studies by Anuska Kaushik and CP Kaushik.New Age International Publishers
- Environmental Studies from crisis to cure by R. Rajagopalan Oxford University

BBALLB 603-ENVIRONMENTAL LAW

OBJECTIVE: Environmental law is a collective term describing international treaties (conventions), statutes, regulations, and common law or national legislation (where applicable) that operates to regulate the interaction of humanity and the natural environment, toward the purpose of reducing the impacts of human activity. The topic may be divided into two major subjects: pollution control and remediation, and resource conservation, individual exhaustion. The limitations and expenses that such laws may impose on commerce, and the often unquantifiable (non-monetized) benefit of environmental protection, have generated and continue to generate significant controversy. Given the broad scope of environmental law, no fully definitive list of environmental laws is possible. The following discussion and resources give an indication of the breadth of law that falls within the "environmental" metric.

Unit I	Introduction The meaning and definition of environment Ecology-Ecosystems; Biosphere; Biomes - Ozone depletion ;GlobalWarming,Climatic changes ; Need for the preservation, conservation and protection of environment; Ancient Indian approach to environment; Environmental degradation and pollution; Kinds, causes and effects of pollution.
Unit II	Common Law remedies Remedies against pollution; Trespass, negligence, and theories of Strict Liability & Absolute Liability ; Relevant provisions of I.P.C. and Cr.P.C. and C.P.C., for the abatement of public nuisance in pollution cases; Remedies under Specific Relief Act; Reliefs against smoke and noise;Noise Pollution
Unit III	The law relating to the preservation Conservation and protection of forests, wild life and endangered species, marine life, coastal ecosystems and lakes etc. Prevention of cruelty towards animals The law relating to prevention and control of water pollution Air Pollution Environment pollution control mechanism Law relating to environment protection National Environmental Tribunal and National Environmental Appellate Authority.

Unit IV	Constitution of India Art. 48A and Art. 51A(g) of the Constitution of India Right to wholesome environment Right to development Restriction on freedom of trade, profession, occupation for the protection of environment Immunity of Environment legislation from judicial scrutiny(Art.31C) Legislative powers of the Centre and State Government Writ jurisdiction Role of Indian Judiciary in the evolution of environmental jurisprudence.
Unit V	International Environmental Regime Transactional Pollution State Liability Customary International Law Liability of Multinational Corporations/Companies Stockholm Declaration on Human Environment, 1972 The role of UNEP for the protection of environment Ramsar Convention 1971 Bonn Convention (Migratory Birds) 1992 Nairobi Convention, 1982 (CFCC) Biodiversity Convention (Earth Summit), 1992 Kyoto Protocol 1997, Johannesburg Convention 2002.

Suggested Readings:

- Paras Diwan: Studies on Environmental Cases.
- S.N. Jain (ed.): Pollution Control and the Law.
- Armin Rosencranz and Shyam Divan: Environmental Law and Policy in India.
- A. Agarwal (ed.): Legal Control of Environmental Pollution
- Chetan Singh Mehta: Environmental Protection and Law

BALLB106- ENVIRONMENTAL STUDIES (HALF CREDIT)

Objectives:

Unit I	Definition, Principles and scope of Environmental Science, Earth, man and Environment ,Eco system, Physico chemical and Biological factors in the environment, Geographical classification and Zones, Structure and composition of Atmosphere, hydrosphere, lithosphere and biosphere. Natural resources, conservation and sustainable development.
UNIT II	Definition principles and scope of Ecology, Human ecology and human settlement. Evolution, origin of life and speciation. **Ecosystem**- Structure and Functions, Abiotic and Biotic components, energy flows and Food Chains **Species**- Definition, Hotspot's of Bio diversity, Strategies for Bio Diversity Conservation, National Parks and Sanctuaries, Gene pool
UNIT III	Sun and Source of Energy, solar radiation and its spectral characteristics; fossil fuel classification, composition physico - chemical characteristics and energy. Content of coal petroleum and natural gas, Hydro-electric power, Wind, geothermal energy, nuclear energy
UNIT IV	**Air**- Natural and Anthropogenic sources of pollution. Primary and secondary pollutants. Transport and diffusion of pollutants, methods of monitoring and control of Air Pollution. Effects of Pollution on human beings, plants, animals, materials and climate, Acid Rain. **Water**- Types, sources, impact and methods of controlling Water Pollution consequences of Water pollution, Waste water treatment. **Soil**- Meaning, industrial waste and heavy metals and interactions with soil components, soil microorganisms and their functions. **Noise** - Sources of Noise pollution, measurement of noise and indices, impact of noise on human health, noise control and abatement measures **Marine** - Sources of Marine pollution and control, criteria employed for disposal of pollutants in marine system- coastal management

Suggested Readings:

- A Text book of Environmental Studies by Erach Bharuch. University Press(I) Hyderabad
- Introduction to Environmental Science by Y Anjeneyulu and Prof.Narmishima Rao. BS Publication, Hyderabad
- Perspective in Environmental Studies by Anuska Kaushik and CP Kaushik.New Age International Publishers
- Environmental Studies from crisis to cure by R. Rajagopalan Oxford University Press,New Delhi

ENVS-121 Environmental Studies and Disaster Management Credit hours 3(2+1)

Theory

Multidisciplinary nature of environmental studies Definition, scope and importance.

Natural Resources: Renewable and non-renewable resources, Natural resources and associated problems. a) Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources. Case studies. f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles.

Ecosystems: Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem. Ecological succession, Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Biodiversity and its conservation: - Introduction, definition, genetic, species & ecosystem diversity and biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, National and local levels, India as a mega-diversity nation. Hot-sports of biodiversity. Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Environmental Pollution: definition, cause, effects and control measures of: a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards. Solid Waste Management: causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution.

Social Issues and the Environment: From Unsustainable to Sustainable development, Urban problems related to energy, Water conservation, rain water harvesting, watershed management. Environmental ethics: Issues and possible solutions, climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. dies. Wasteland reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act. Issues involved in enforcement of environmental legislation. Public awareness.

Human Population and the Environment: population growth, variation among nations, population explosion, Family Welfare Programme. Environment and human health: Human Rights, Value Education, HIV/AIDS, Women and Child Welfare, Role of Information Technology in Environment and human health.

Disaster Management: Natural Disasters- Meaning and nature of natural disasters, their types and effects. Floods, drought, cyclone, earthquakes, landslides, avalanches, volcanic eruptions, Heat and cold waves, Climatic change: global warming, Sea level rise, ozone depletion.

Man Made Disasters- Nuclear disasters, chemical disasters, biological disasters, building fire, coal fire, forest fire, oil fire, air pollution, water pollution, deforestation, industrial waste water pollution, road accidents, rail accidents, air accidents, sea accidents.

Disaster Management- Effect to migrate natural disaster at national and global levels. International strategy for disaster reduction. Concept of disaster management, national disaster management framework; financial arrangements; role of NGOs, community –based organizations and media. Central, state, district and local administration; Armed forces in disaster response; Disaster response; Police and other organizations.

Practical

Pollution case studies. Case Studies- Field work: Visit to a local area to document environmental assets river/ forest/ grassland/ hill/ mountain, visit to a local polluted site-Urban/Rural/Industrial/Agricultural, study of common plants, insects, birds and study of simple ecosystems-pond, river, hill slopes, etc.

Suggested Readings

1. Choudhary, B.L. and Pandey, J. 2004. Environmental Studies, Apex Publishing House, Udaipur.
2. Satyanarayan, Shanta, Zade, Suresh, Sitre, Shashikant and Pravin Meshram. A Text Book of Environmental Studies. 2009. Allied Publishers Pvt. Ltd., New Delhi.
3. Bamaniya, B.R., Verma, L. N. and Verma A. 2005. Fundamentals of Environmental Studies, Yash Publishing House, Bikaner.
4. Rathore, N. S. and Singh, Pratap 2004. Environmental Studies. Himanshu Publishing House, New Delhi.
5. pkS/kjh] ch- ,y- ,oa ikaMs] ftrsUnz- 2004- i;kZoj.k v/;;u] ,isDl ifCyf'kax gkml] mn;iqjA
6. dkSf'kd] vuqHkk ,oa dkSf'kd] lh- ih- 2005- i;kZoj.k v/;;u] U;w ,t bUVjus'kuy ¼izk½ fyfeVsM] ubZ fnYyhA
7. tkxsfV;k] ch- ,y- vkSj iqjksfgr] iadt 2005- i;kZoj.k v/;;u] ,xzksVsd ifCyf'kax ,dsMeh] mn;iqjA

[BCA402] ENVIRONMENTAL STUDIES

Course Objective:
The objectives of environmental studies are to develop a world in which persons are aware of and concerned about environment and the problems associated with it, and committed to work individually as well as collectively towards solutions of current problems and prevention of future problems.

UNIT-I	**Basics of Environment:** Environmental Pollution, Environmental Acts and Regulations, Environmental Impact Assessment (EIA), Necessity and methodology of EIA
UNIT-II	**Principles of ecosystem concept**: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem.
UNIT-III	**Biogeochemical Cycling**: Oxygen cycle, Carbon cycle, Nitrogen cycle, Phosphorus cycle, Sulphur cycle and water cycle
UNIT-IV	**Pollution:** Brief idea about Air Pollution, Water Pollution and Noise Pollution. Global Environmental problems, (Global warming, ozone depletion and acid rain)
UNIT-V	**Field Work:** Visit to a local area to document environmental assets river/forest/grassland/hill/mountain, Visit to a local polluted site – Urban / Rural / Industrial / Agricultural, Study of common plants, insects, birds, Study of simple ecosystems-pond, river, hill slopes, etc (Field work equal to 5lecture hours).

Course Outcomes:

CO1: Students are able to understand the importance of environment and its protection and knowledge about all the environment protection laws and necessity of EIA for any proposal or projects.

CO2: Able to correlate themselves with surrounding for food and all their needs.

CO3: Practically treat the impure water and make the people aware about the effect of Polluted water.

CO4: Understand meaning and causes of disaster. Also understand how to reduce the effect of Disaster and its management.

Program Specific Objectives:

PSO-1:	The ability to understand, analyse and develop computer programs in the areas of computer science and application for efficient design of computer-based systems of varying complexity.
PSO-2:	The ability to understand the evolutionary changes in computing, apply standard practices and strategies in software project development to deliver a quality product for business solution, real world problems and meet the challenges of the future.
PSO-3:	The ability to employ modern computer languages platforms in creating innovative career paths to be an entrepreneur, lifelong learner with moral values & ethics.
PSO-4:	Analyzing the impact of Computer Science and Engineering solutions in the societal and human context.

Mapping Table

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	-	1	-	-	2	2	3	-	1	-	2	3	-	1	-	2
CO2	2	1	-	2	-	3	-	2	-	2	-	1	-	2	-	-
CO3	3	-	3	-	3	-	3	-	3	-	3	-	3	-	3	-
CO4	3	3	-	1	-	3	-	1	-	3	-	3	3	3	2	1
AVG	2	1.25	0.75	0.75	1.25	2	1.5	0.75	0.75	1.25	1.25	1.75	1.5	1.5	1.25	0.75

Recommended Readings:

- Environmental Chemistry By A.K.De
- Environmental Chemistry By M.S. Sethi
- Environmental Chemistry & Disaster Management By Suresh C Ameta

BA109A	Environmental Studies	2L: 0T: 0P	2 credits

COURSE OBJECTIVE:
The Environmental Studies major prepares students for careers as leaders in understanding and addressing complex environmental issues from a problem-oriented, interdisciplinary perspective. Students:

Unit -1	**Basics of Environment:** Types of Pollution, Effect of pollution, Environmental Impact Assessment (EIA), Necessity and methodology of EIA.
Unit-2	**Ecology:** Principles of ecology, ecosystem concept: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem, Non Renewable energy resources and Renewable energy resources
Unit-3	**Social Issues and the Environment:** Water Pollution, Treatment of Water, Water conservation, Waste Water management, Climate change, global warming, acid rain, ozone layer depletion, ozone layer protection, nuclear accidents
Unit -4	**Environmental Protection Act** : Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness
Unit-5	**Disaster Management:** Types of disaster: natural and manmade (Earthquake, Tsunami, Cyclone, Flood, Drought, Landslides, Nuclear, Chemical, Fire and Environmental Hazards Disaster Management Cycle and its components. Vulnerability of Indian Continent to different types of disasters and safety during disasters.

Suggested Readings

1. S.C.AmetaEnvironmental science and disaster management
2. A.K. De : Environmental Pollution,
3. B.K. Sharma &H.Kaur : Environmental Chemistry,

Environment Geography
Paper Code: BAGE207A

Unit -1	Environmental Geography: Concepts and Approaches; Ecosystem – Concept and Structure; Ecosystem Functions.
Unit -2	Human-Environment Relationship in Equatorial, Desert, Mountain and Coastal Regions
Unit -3	Environmental Problems and Management: Air Pollution; Biodiversity Loss; Solid and Liquid Waste.
Unit-4-	Environmental Programmes and Policies: Developed Countries; Developing Countries
Unit-5	New Environmental Policy of India; Government Initiatives.

Books :

Hari Mohan Saxena: Environmental Geography

Savindra Singh : Environmental Geography

BAGE DSE3BA	Disaster Management	5L: 1T: 0P	6 credits

COURSE OBJECTIVE:
To Understand basic concepts in Disaster Management and Terminologies used in Disaster Management. To Understand Types and Categories of Disasters and how to face the Challenges posed by Disasters

Unit 1	Hazards, Risk, Vulnerability and Disasters: Definition and Concepts.
Unit 2	Disasters in India: (a) Causes, Impact, Distribution and Mapping: Flood, Landslide, Drought
Unit 3	Disasters in India: (b) Causes, Impact, Distribution and Mapping: Earthquake, Tsunami and Cyclone.
Unit 4	Human induced disasters: Causes, Impact, Distribution and Mapping.
Unit 5	Response and Mitigation to Disasters: Mitigation and Preparedness, NDMA and NIDM; Indigenous Knowledge and Community-Based Disaster Management; Do's and Don'ts During Disasters

Suggested Readings

1. A Kapur : Vulnerable India: A Geographical Study of Disasters
2. S. Modh : Managing Natural Disaster: Hydrological, Marine and Geological Disasters
3. R.B. Singh : Risk Assessment and Vulnerability Analysis

[BT304]: LIFE SCIENCES & ENVIRONMENT

COURSE OBJECTIVE:

The principal object of this course is to give fundamental conceptual knowledge of life scienceand environment. The course is designed for B.Tech keeping in mind student must be familiar with basics of Knowledge of life science and environment.

UNIT –I

Genetics and Evolution:GregorMendal, Mendelian inheritance; Chromosome theory of inheritance; Gene interaction; blood groups in humans, Rh Factor. Properties of DNA and RNA, DNA as genetic material, DNA –its organization and replication; Transcription and Translation; Gene expression and regulation; DNA fingerprinting.

UNIT –II

Basics of Environment: Types of Pollution, Effect of pollution, Environmental Impact Assessment (EIA), Necessity and methodology of EIA.

Social Issues and the Environment: Water Pollution, Treatment of Water, Water conservation, Waste Water management, Climate change, global warming, acid rain, ozone layer depletion, ozone layer protection, nuclear accidents

UNIT–III

Environmental Protection Act : Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness

UNIT -IV

Ecology:Principles of ecology, ecosystem concept: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem, Non Renewable energy resources and Renewable energy resources.

Recommended Reading:

- Environmental science and disaster management by Prof. S.C.Ameta
- Environmental science by CBH publication.
- Environmental Pollution, A.K. De
- EnvironmentalChemistry, B.K. Sharma &H.Kaur
- Environmental Pollution Engineering and Control, C.S. Rao

CH201 LIFE SCIENCE & ENVIORNMENT

COURSE OBJECTIVE:
The principal object of this course is to give fundamental conceptual knowledge of life science and environment. The course is designed for B.Tech keeping in mind student must be familiar with basics of Knowledge of life science and environment.

UNIT –I	**Genetics and Evolution:**GregorMendal, Mendelian inheritance; Chromosome theory of inheritance; Gene interaction; blood groups in humans, Rh Factor. Properties of DNA and RNA, DNA as genetic material, DNA –its organization and replication; Transcription and Translation; Gene expression and regulation; DNA fingerprinting.
UNIT –II	**Basics of Environment:** Types of Pollution, Effect of pollution, Environmental Impact Assessment (EIA), Necessity and methodology of EIA. **Social Issues and the Environment:** Water Pollution, Treatment of Water, Water conservation, Waste Water management, Climate change, global warming, acid rain, ozone layer depletion, ozone layer protection, nuclear accidents
UNIT–III	**Environmental Protection Act :** Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness
UNIT -IV	**Ecology:**Principles of ecology, ecosystem concept: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem, Non Renewable energy resources and Renewable energy resources.

Recommended Reading:

- Environmental science and disaster management by Prof. S.C.Ameta
- Environmental science by CBH publication.
- Environmental Pollution, A.K. De
- EnvironmentalChemistry, B.K. Sharma &H.Kaur
- Environmental Pollution Engineering and Control, C.S. Rao

BBA110 ENVIRONMENTAL STUDIES

Course Objective:

This course provides basic knowledge about the environment and its allied problems. Developing an attitude of concern for the environment. Motivating to participate in environment protection and environment improvement. Acquiring skills to help the concerned individuals in identifying and solving environmental problems.

UNIT-I	Basics of Environment: Need of environment education, Environmental Pollution, Classification, Types, source & Effects, Environmental Acts and Regulations, Environmental Impact Assessment (EIA), Necessity and methodology of EIA.
UNIT-II	Principles of ecology, ecosystem concept: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem , Biogeochemical Cycling: Oxygen cycle, Carbon cycle, Nitrogen cycle, Phosphorus cycle, Sulphur cycle and water cycle, Biodiversity: Types, Benefits, Threats, conservation Energy:- Renewable & Now renewable sources of energy.
UNIT-III	Water : Quality of potable water, Treatment of water for supply, Waste Water Treatment Technology & Control of Water pollution
UNIT-IV	Brief idea about Air Pollution, Water Pollution and Noise Pollution. Global Environmental problems, (Global warming, ozone depletion and acid rain).
UNIT-V	Disaster Management: Various type of disaster Natural & Man made, Component of disaster, Disaster management cycle.

Recommended Readings:

- Environmental Chemistry by A.K. De
- Environmental Engineering and Management by Dr. Suresh K. Dhameja

(BB205A) ENVIRONMENTAL SCIENCE

Course Objective:
This course provides basic knowledge about the environment and its allied problems. Developing an attitude of concern for the environment. Motivating to participate in environment protection and environment improvement. Acquiring skills to help the concerned individuals in identifying and solving environmental problems.

UNIT-I	Introduction to environmental studies -Multidisciplinary nature of environmental studies; Scope and importance; the need for environmental education. Concept of sustainability and sustainable development. Ecosystems - What is an ecosystem? Structure: food chains, food webs and function of ecosystem: Energy flow in an ecosystem, nutrient cycle and ecological succession. Ecological Interactions. Case studies of the following ecosystems: a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems(ponds, streams, lakes, rivers, oceans, estuaries)
UNIT-II	**Biodiversity and Conservation** –Levels of biological diversity: genetic, species and ecosystem diversity; Bio geographic zones of India; Biodiversity patterns and global biodiversity hotspots, India as a mega---biodiversity nation; Endangered and endemic species of India Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In--situ and Ex-situ conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.
UNIT-III	Natural Resources: Renewable and Non-renewable Resources Land resources and land use change; Land degradation, soil erosion and desertification. Deforestation : Causes and impacts due to mining, dam building on environment, forests. Biodiversity and tribal populations. Water: Use and over-exploitation of surface and groundwater, floods, droughts, conflicts over water (international & inter-state). Energy resources: Renewable and non renewable energy sources, use of alternate

	energy sources, growing energy needs, case studies. Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution, Nuclear hazards and human health risks, Solid waste management: Control measures of urban and industrial waste. Pollution case studies.
UNIT-IV	Environmental Policies & Practices Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution)Act; Water (Prevention and control of Pollution)Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.
UNIT-V	Human Communities and the Environment Human population growth: Impacts on environment, human health and welfare Resettlement and rehabilitation of project affected persons; case studies. Disaster management: floods, earthquake, cyclones and landslides. Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan. Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. Environmental communication and public awareness, case studies (e.g., NG vehicles in Delhi). Fieldwork Visit to an area to document environmental assets: river/forest/flora/fauna, etc. Visit to a local polluted site-- Urban/Rural/Industrial/Agricultural. Study of common plants, insects, birds and basic principles of identification. Study of simple ecosystems-pond, river, Delhi Ridge, etc.

Recommended Readings:

- Carson,R.2002. Silent Spring. Hought on Mifflin Harcourt.
- Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.

- Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security, Stockholm Env. Institute, Oxford Univ. Press.
- Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology Sunderland: Sinauer Associates, 2006.
- Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37. McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29---64). Zed Books.
- McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
- Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
- Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011.Environmental and Pollution Science. Academic Press.

[MBA 253]ENVIRONMENT& SAFETY MANAGEMENT

Course Objective:

The objective of this course is to enable the participants to appreciate the role of occupational safety and health at the corporate level and at work place. The course particularly focuses on importance of human factors of engineering, environment management system (EMS) and its standards, environmental auditing and use of green technologies for global competitiveness.

UNIT-I	Introduction of Ergonomics and Human Factors of Engineering in Industries.
UNIT-II	Review and comparison of Global and Indian legal provisions related to Occupational Safety and Health including OSHA and Factories Act.
UNIT-III	Introduction to HAZOP and HCCA Studies; The Total Quality Environment Management; Environmental Management System Standards: ISO 14000.
UNIT-IV	Environmental Auditing; Environmental Performance Metrics.
UNIT-V	Introduction to Total Productive Maintenance (TPM); Pillars of TPM, Elements of a Total Safety System; Elements of ISO-18001,Safety Audits.

Recommended Readings:

- American Society for Quality. (2002). *The Quality auditor's HACCP handbook.* USA: ASQ Press.
- Barrow, C. J. (1999). *Environmental management: Principles and practice.* London: Routledge.
- Bhat, V. N. (1996). *The green corporation. The next competitive advantage.* Quorum Books: Connecticut.
- Confederation of Indian Industry. (2003). *JishuHozenManual*.Bangalore.
- Farmer, A. (1997). *Managing environmental pollution.* Routledge.London..

B.Com (H)204 ENVIRONMENTAL STUDIES

Course Objective:

This course provides basic knowledge about the environment and its allied problems. Developing an attitude of concern for the environment. Motivating to participate in environment protection and environment improvement. Acquiring skills to help the concerned individuals in identifying and solving environmental problems.

UNIT-I	Basics of Environment: Need of environment education, Environmental Pollution, Classification, Types, source & Effects, Environmental Acts and Regulations, Environmental Impact Assessment (EIA), Necessity and methodology of EIA.
UNIT-II	Principles of ecology, ecosystem concept: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem , Biogeochemical Cycling: Oxygen cycle, Carbon cycle, Nitrogen cycle, Phosphorus cycle, Sulphur cycle and water cycle, Biodiversity: Types, Benefits, Threats, conservation Energy:- Renewable & Now renewable sources of energy.
UNIT-III	Water : Quality of potable water, Treatment of water for supply, Waste Water Treatment Technology & Control of Water pollution
UNIT-IV	Brief idea aboutAir Pollution, Water Pollution and Noise Pollution. Global Environmental problems, (Global warming, ozone depletion and acid rain).
UNIT-V	Disaster Management: Various type of disaster Natural & Man made, Component of disaster, Disaster management cycle.

Recommended Readings:

- Environmental Chemistry by A.K. De
- Environmental Engineering and Management by Dr. Suresh K. Dhameja

UNIT-IV	**Proofs Methods** Types of Methods , The Division Algorithm, Divisibility properties, Principle of Mathematical induction. **Graph Theory** Directed, Undirected, Simple , Adjacency, degree of vertex, sub graph complete cycle & wheel graph, bipartite, weighted graph , Euclerian & Hamiltonian graphs Planar graph and Euler's formula's.

Recommended Readings:

- Dr.Hari S.Parihar,Dr.Ritu Agarwal, Ashirwad Publication
- Genius Publication
- Schaum series

[BSC205] : LIFE SCIENCE &ENVIROMENT

Course Objective:	
This course provides Students Creating the awareness about environmental problems among people. imparting basic knowledge about the environment and its allied problems. Developing an attitude of concern for the environment. Motivating public to participate in environment protection and environment improvement. Acquiring skills to help the concerned individuals in identifying and solving environmental problems.	
UNIT-I	**Genetics and Evolution:** Gregor Mendal,Mendelian inheritance; Chromosome theory of inheritance; Gene interaction; blood groups in humans, Rh Factor. Properties of DNA and RNA, DNA as genetic material, DNA –its organization and replication; Transcription and Translation; Gene expression and regulation; DNA fingerprinting.
UNIT-II	**Basics of Environment:** Types of Pollution, Effect of pollution, Environmental Impact Assessment (EIA), Necessity and methodology of EIA.
UNIT-III	**Social Issues and the Environment:** Water Pollution, Treatment of Water, Water conservation, Waste Water management, Climate change, global warming, acid rain, ozone layer depletion, ozone layer protection, nuclear accidents
UNIT-IV	**Environmental Protection Act** : Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness **Ecology:** Principles of ecology, ecosystem concept: Biotic and abiotic

	components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem, Non Renewable energy resources and Renewable energy resources

Recommended Readings:

- Environmental science and disaster management by Prof. S.C.Ameta
- Environmental science by CBH publication.
- Environmental Pollution, A.K. De
- Environmental Chemistry, B.K. Sharma & H.Kaur

[BSC206] : OBJECT- ORIENTED PROGRAMMING

Course Objective:
The objective of this course is to make students familiar with the basics of programming in the C++ programming language & presents the fundamental notions & techniques used in object-oriented programming. It starts with universal basics, not relying on objects concepts and gradually extends to advanced issues observed in the objective approach.

UNIT-I	**Introduction to OOP** - Paradigms of Programming Languages — Basic concepts of Object Oriented Programming , Objects and Classes, Data abstraction and Encapsulation, inheritance. Polymorphism, Dynamic binding, Message communication. Benefits of OOP's, Application of OOP's. **Introduction to Java History**- Java features, Java Environment- JDK, API. Types of Java program, Creating and Executing a Java program. Java tokens: Keywords, Character set, Identifiers, Literals, Separators. Java Virtual Machine (JVM). Elements: Constants Variables, Data types. **Operators**-Arithmetic, Logical, Bit wise operator, Increment and Decrement, Relational, Assignment , Conditional and Special operators.
UNIT-II	**Decision Making and Branching**: If statement and its types, switch statement, **Decision making and looping** -while loop, do- While, for loop, break labeled loop, continue statement. **Arrays**: One Dimensional Array, Multidimensional Array, Vectors, Wrapper classes; String Array, String Methods, String Buffer Class. **Class and Objects** : Defining a class, Methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of Methods, this keyword.
UNIT-III	**Inheritance** : Define a subclass, deriving a sub class, Single Inheritance, Multilevel Inheritance, Hierarchical Inheritance. Overriding methods, Final variables and methods, final classes, Finalizer methods, Abstract methods and

Development Biology

1. Frog - Study of developmental stages - whole mounts and sections through permanent slides – cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.
2. Study of the different types of placenta- histological sections through permanent slides or photomicrographs.
3. Study of placental development in humans by ultrasound scans.
4. Examination of gametes - frog/rat - sperm and ova through permanent slides or photomicrographs.

Referred book:

1 Ayyar, E.K.and T.N. Ananthakrishnan, Manual of Zoology, vol.II(Chordata), S. Viswanathan (Printers and Publishers) Pvt. Ltd. Madras.

2 Jordan, E.L. and P.S. Verma,Chordate Zoology and Elements of Animal Physiology, S.Chand & Co.Ltd.,Ram Nagar, New Delhi (English and Hindi Editions).

3 Parker and Haswell, Text Book of Zoology ,Vol-II (Chordata),A.Z.T.B.S. Poblishers and Distributors, New Delhi-110051.

4 Waterman, Allyn J,et.al., Chordate Structure and Function, Mac Millan and Co., New York.

5 Kotpal, RL., Modern Text Book of Zoology-Vertebrates, Rastogi Publications, Meerut (English and Hindi Editions).

6 Ganguly ,BB, Sinha ,AK and Adhikari, S :Biology of Animals ,Vol.II,

BSC204A: Environmental Studies

CO-1: Recognize the history, structure, function, interactions and trends of key socio-environmental systems on personal, organizational and intellectual level regarding our surroundings through different media.

CO-2: Examine the generation of scientific knowledge and how that knowledge is presented, evaluated, framed and applied for environmental protection by conservation of Natural resources.

CO-3: Articulate a coherent philosophy of the environment and consider ethical bases for responding to environmental questions.

CO-4: Understand the role of conservation of resources and public awareness in prevention of pollution and ultimately for the sustainable development of society.

CO-5: Understand the social responsibility towards protection of environment and society

UNIT I	**Basics of Environment:** Types of Pollution, Effect of pollution, Environmental Impact Assessment (EIA), Necessity and methodology of EIA. **Ecology:** Principles of ecology, ecosystem concept: Biotic and abiotic components of ecosystem, ecological pyramids, food chain, food web, and flow of energy in an ecosystem, Non Renewable energy resources and Renewable energy resources
UNIT II	**Social Issues and the Environment:** Water Pollution, Treatment of Water, Water conservation, Waste Water management, Climate change, global warming, acid rain, ozone layer depletion, ozone layer protection, nuclear accidents
UNIT III	**Environmental Protection Act** :Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness
UNIT IV	**Disaster Management:** Types of disaster: natural and manmade (Earthquake, Tsunami, Cyclone, Flood, Drought, Landslides, Nuclear, Chemical, Fire and Environmental Hazards Disaster Management Cycle and its components. Vulnerability of Indian Continent to different types of disasters and safety during disasters.

Recommended Readings:

- Environmental science and disaster management by Prof. S.C.Ameta
- Environmental science by CBH publication.
- Environmental Pollution, A.K. De
- Environmental Chemistry, B.K. Sharma & H.Kaur

BSC205A: Computational Techniques II

	Bragg's Law, Ionic crystals, band theory, metals and semiconductors, Different structures of AX, AX_2, ABX_3 compounds, spinels.
UNIT-III	**Kinetics:** Rates of chemical reactions, temperature dependence of chemical reactions; elementary, consecutive, and parallel reactions; steady state approximation; theories of reaction rates collision and transition state theory, relaxation kinetics, kinetics of photochemical reactions and free radical polymerization, homogeneous catalysis, adsorption isotherms and heterogeneous catalysis.
UNIT-IV	**Adsorption:** Pressure difference across curved surface (Laplace equation), vapour Pressure of droplets (kelvin equation), Gibbs adsorption isotherm, estimation of surface area (BET equation without derivation), catalytic activity at surfaces. **Micelles:** Surface active agents, classification of surface active agents, micellization, hydrophobic interaction, critical micellar concentration (CMC), factors affecting the CMC of surfactants.

Recommended Readings:

- Physical Chemistry, **K.J. Laidler**
- Physical Chemistry:, **Gurdeep Raj,**
- Physical Chemistry, **P.W. Atkins, J.D. Paula**

[MSCH104] ENVIRONMENTAL CHEMISTRY

Course Objective:

The aim of the course is to understand the basics of environment, various pollutants and their effect on in the environment. It also gives the idea about the solid waste management and green chemistry.

UNIT-I	**Basics of Environment.** : Adverse effects of environmental pollution and control strategies. Environmental Acts and Regulations. Functional concepts of Ecology. Basics of species. Ecosystem. Hydrological and chemical cycles. Energy flow in ecosystems. Biodiversity, population dynamics. Renewable sources of energy. Potential & present status of renewable sources of energy in India. Environmental Impact Assessment (EIA). Necessity and methodology of EIA.
UNIT-II	**Air Pollution** Classification of air pollutants- sources, effects and control of CO, SO_2, NO,

	Hydrocarbons as gaseous pollutants, suspended particulate matter aerosols, photochemical air pollution.Green house effect and Global Warming, chemistry involved smog formation, acid rains.Control measurements of air pollutant accidents: TCDD Accident (Seveso, Italy), Bhopal gas tragedy, Chernobyl disaster.
UNIT-III	**Water Pollution** Sources of water pollution- solid waste, industrial, agricultural, oil, radio active waste, thermal pollution classification of water pollutants- basis, effects and controls. Sampling of water : determination of Total dissolved solid, conductivity, acidity, alkalinity, hardness, chloride, sulphate, florides, DO, BOD, COD. Water pollution laws and standards. **Solid Waste Management.** Classification of solid waste. Collection, transportation, treatment, and disposal of solid waste. Energy recovery. Sanitary landfill.
UNIT-IV	**Disaster Management:** Types of disaster: natural and manmade (Earthquake, Tsunami, Cyclone, Flood, Drought, Landslides, Nuclear, Chemical, Fire and Environmental Hazards), Disaster Management Cycle and its components. Vulnerability of Indian Continent to different types of disasters and safety during disasters.

Recommended Readings:

- Environmental Pollution, **A.K. De**
- Environmental Chemistry, **B.K. Sharma & H.Kaur**
- Environmental Pollution Engineering and Control, **C.S. Rao**

[MSCH105] COMPUTER APPLICATIONS IN CHEMISTRY

Introduction

Overview of computer, operating system and programming languages. Introduction to chemometric and cheminformatic methods and applications in solving chemical problems.

Representation of chemical structures

Fragment code, linear notation, SMILES and connection table

LB 605 (C) Human Rights Law and Practice

The objectives of the course are to prepare for responsible citizenship with awareness of the relationship between Human Rights, democracy and development; to foster respect for international obligations for peace and development; to impart education on national and international regime of Human Rights; to sensitize students to human suffering and promotion of human life with dignity; to develop skills on human rights advocacy and to appreciate the relationship between rights and duties and to foster respect for tolerance and compassion for all living creatures.

UNIT-I	Jurisprudence of Human Rights Nature, definition, origin and theories of human rights.
UNIT-II	Universal protection of human rights -United Nations and human rights - Universal Declaration of Human Rights, 1948; International Covenant on Civil and Political Rights, 1966; International Covenant Economic, Social and Cultural Rights, 1966.
Unit- III	Regional Protection of Human rights - European system - Inter American System - African System.
Unit- IV	Protection of human rights at national level Human rights and the constitution The Protection of Human rights Act, 1993.
Unit- V	Human Rights and Vulnerable Groups: Rights of Women, Children, Disabled, Tribals, Aged and Minorities - National and International Legal Developments.

Recommended Readings:

- Singh Nagendra, Enforcement of Human Rights in Peace and War and the future of humanity, Calcutta: Eastern Law House, 1986
- S.K- Kappor , Intemational law Along With Human Rights
- H.O.Agarwal , Intemational law And Human Rights
- Upender Baxi – Human Rights
- Thomas Buergenthal – Human Rights
- Henry Steiner & Philip Alston – International Human Rights Law.

Recommended Readings:

- Indu Prakash Singh, Women, Law and Social Change in India, 1989, Radiant Publishers, New Delhi
- Paras Dewan, Dowry and Protection to MalTied Women, 1995, Deep and Deep Publication, New Delhi
- SPSathe, Towards Gender Justice, 1993, RCWS, SNDT WV Bombay
- DwarkaNath Mitter, Position of Women in Hindu Law, 1989, Inter-India Publications, New Delhi
- Shaukat Nasir, Muslim Women and their Rights, 1992, Ashoka Law House, New Delhi.

BALLB804-LAW OF HUMAN RIGHTS

OBJECTIVE:- Human rights are an important focal point in international affairs in the 21st century. Decisions about many crucial issues – how aid funding is distributed, how refugee and migration movements are regulated, when and why states may engage in armed conflict with each other, and the control and distribution of material goods – are guided by human rights theory, and governed by human rights treaties and international human rights law. Human rights influence domestic politics, in the justice system, healthcare, education, and welfare. Human rights also figure in many people's ethical judgements and personal values. Numerous advocacy groups and well-known charitable organisations build their activities around issues relating to the realisation of basic human rights.

SR.NO	TOPIC- SUB TOPIC	NO.OF HRS.	MODE OF TEACHING	MODE OF EVALUATION
Unit I	**Introduction** • Origin and Historical Development of Human Rights • Theories and Prespectives of United Nation and Human Rights • Law, Mechanism and Instruments of Human Rights • Right to Development and Human Right • International Conventions on Human Rights: UDHR, Regional Convention, European Convention, American Convention, African Convention.	08	Lecture Demonstration and Case Study	Written
Unit II	**International Human Rights Instruments** • International Bill of Human Rights • Universal Declaration of Human Rights, 1948- its influence and legal significance • International Covenant on Civil and Political Rights, 1966 • International Covenant on Economic, Social and Cultural Rights, 1966 • Optional Protocols of ICESCR..	07	Lecture Demonstration and Case Study	Written

Unit III	**Human Rights Protetion in India.** • Human Rights in India with reference to Constitution • National and State Human Rights Commission- composition, powers and functions • Human Rights and Disadvantaged People- women, children, displaced person and ethnic minorities • Human Rights and Terrorisn- present scenario • Societal Problems of Human Rights in India- poverty, illiteracy, unemployment, corruption.	08	Lecture Demonstration and Case Study	Written
Unit IV	**Law Relating to Women and Children** • Status of women and children • Statutory Provision Relating to Women and Children a) Offences Against Women and Children b) Women Employment and Legal Control of Child Labour c) Social Legislation d) Rights of Children In Contract and Property e) Testimony & Suits	09	Lecture Demonstration and Case Study	Written
Unit V	**Law relating to Refugees** • Introduction to International Refugee Law • International Refugee Protection Dimensions • Understanding refugee Definition and Its Paradigms • Refugee Protection under International Human Rights Law • Law related to Refugees in India	12	Lecture Demonstration and Case Study	Written

Suggested Readings:

- S.K.Avesti and R.P.Kataria, Law Relating to Human Rights, Orient
- Publications, New Delhi (2000)

Prof. A.K. Singh

Dr. Kawerji

- 6. SK Kapoor, Human Rights under International and Indian Law, Central Law
- Agency, Allahabad, (1999)
- 7. HO Agarwal, Human Rights, Central Law Publications, Allahabad, (12th Edn.- 2012)
- Mamata Rao, Law Relating to Woman and Children, Eastern Book Co.,Lucknow (2008)
- Justice Palok Basu, Law Relating to Protection of Human Rights, Modern Law Publications, Allahabad (2002).
- Indian Perspective on International Refugee Law; Akhilesh Pandey

HVE-111 **Human Values and Ethics** **1(1+0)**

Theory

Values and Ethics-An Introduction. Goal and Mission of Life. Vision of Life. Principles and Philosophy. Self Exploration. Self Awareness. Self Satisfaction. Decision Making. Motivation. Sensitivity. Success. Selfless Service. Case Study of Ethical Lives. Positive Spirit. Body, Mind and Soul. Attachment and Detachment. Spirituality Quotient. Examination.

Suggested Readings

Gaur, R.R., Sangal, R. & Bagaria, G.P. 2011. A Foundation Course in Human Values and Professional Ethics. Excel Books.

Mathur, S.S. 2010. Education for Values, Environment and Human Rights. RSA International.

Sharma, R.A. 2011. Human Values and Education -Axiology, Inculcation and Research. R. Lall Book Depot.p

Sharma, R.P. & Sharma, M. 2011. Value Education and Professional Ethics. Kanishka Publishers.

Srivastava, S. 2011. Human Values and Professional Ethics. S K Kataria & Sons.

Srivastava, S. 2011. Environmental Science. S K Kataria & Sons.

Tripathi, A.N. 2009. Human Values. New Age International (P) Ltd. Publishers.

[MBA107] BUSINESS ETHICS & CORPORATE SOCIAL RESPONSIBILITY

Course Objective:

The objective of the course is to help the students understand the nature of business ethics and issues in corporate governance and its application to the Indian corporate scene.

UNIT-I	**Business Ethics:** Introduction to Business Ethics, Ethics, Morals & Values, Concepts of Utilitarianism and Universalism –Theory of rights, theory of Justice – Virtue ethics – ethics of care – Law and Ethics - The Nature of Ethics in Management- Business Standards and Values- Value Orientation of the Firm. **Complexity of Ethical Issues:**Conflicts indecision making from ethical and economic point of view- Ethical Dilemma - Solving ethical dilemma Managerial integrity and decision making.
UNIT-II	**Functional Areas in Business Ethics:**Marketing Ethics (in Products, Pricing, Promotion and Place) and Consumer protection, Ethics in Human Resources management (Recruitment and promotion policies, Working Conditions, Down Sizing Workforce), Ethical issues at the top management, Ethics in financial markets and investor protection, Ethical responsibility towards competitors and business partners.
UNIT-III	**Corporate Social Responsibility:**Meaning and Definition of CSR, Models for implementation of CSR, Advantages and Scope of CSR, External standards on CSR, Prestigious awards for CSR, CSR as a business strategy for sustainable development, The Indian perspective, India on Ethical CSR Matrix, Future of Indian CSR, Social responsibility and Indian Corporations- A Score Card; Current CSR practices of the firms in India and abroad.
UNIT-IV	**Ethical Leadership:**Personal Integrity and self development – wisdom based leadership.Ethical Decision Making in Business, Globalization and Business Ethics, Creating an Ethical organization
UNIT-V	**Corporate Governance:** Definition, Desiderata of Corporate Governance, Historical perspective of Corporate Governance, Issues in CG, Benefits of CG. **Internal Corporate Governance Mechanism:** Board of Directors— Functional Committees of Board; Code of conduct, whistle blowers. **External Corporate Governance Mechanism:**Regulators, Gate keepers, Institutional Investors, Corporate raiders **Corporate Governance in India:**Corporate form in India 50s to 90s – developments in Corporate Governance in India in nineties and2000s – CII, Kumaramangalam, Narayanamoorthy, Naresh Chandra, JJ Irani Committee reports – Legal and Regulatory Changes – introduction and modification of Clause 49, - Corporate governance in practice in India, cases.

Recommended Readings:

- Business Ethics and Corporate Social Responsibility, A.C. Fernando, Pearson Education
- Business Ethics :Concepts and Cases, Velasquez, M.G., Prentice Hall of India

BBA-LLB 804 Law of Human Rights

Course Objective: The objective of this course is to lay the foundation of the Human Rights law and acquaint the students with basic human rights institutions.

UNIT-I	Introduction Nature Origin and Evolution Development of Human Right Regime
UNIT-II	International Human Rights Law UN Charter UDHR Covenants of 1966 Optional Protocols
UNIT-III	National Human Rights Law Constitutional Provisions Fundamental Rights Directive Principles of State Policy Human Rights Act, 1993 NHRC: Composition, Powers and Functions Role of State HRC, NCW, NCM, SC/ST Commission Role of Civil Societies and Media
UNIT-IV	Group Rights Prisoners Women and Children Indigenous People Disabled Senior Citizens Refugees

Recommended Readings:

D.D. Basu, *Human Rights in Constitutional Law*, Lexis Nexis, 2008 (3rd Edn)
UpendraBaxi, *The Future of Human Rights*, Oxford University Press, 2012 (3rd Edn)

[HSM102A]: HUMAN RIGHTS AND PROFESSIONAL ETHICS

COURSE OUTCOME:
The objective of this paper is to acquaint the students with the basics of Human Rights and Professional Ethics

UNIT-I	Human Rights: Introduction: History, Evolution, Growth, UN Charter and Human Rights, UDHR, Covenants of 1966, Optional Protocols
UNIT-II	Human Rights: Human Rights under the Indian Constitution and their Enforcement, Fundamental Rights, Directive Principles of State Policy , Human Rights Act, 1993 NHRC: Composition, Powers and Functions
UNIT-III	Group Rights: Prisoners, Women and Children, Refugees, Indigenous People, Disabled, Senior Citizens
UNIT-IV	Meaning and Necessity of Professional Ethics, Standards of Professional Conduct and Etiquette

Text/Reference Books:

1. D.D. Basu, Human Rights in Constitutional Law, Lexis Nexis
2. UpendraBaxi, The Future of Human Rights, Oxford University Press
3. Thomas Buergenthal – Human Rights
4. H. O. Agrawal, Human Rights