Khwaja Moinuddin Chishti Language University, Lucknow

Courses Teaching Climate Change and Environmental Sustainability

Khwaja Moinuddin Chishti Language University integrates Climate Change and Environmental Sustainability across multiple undergraduate and postgraduate programmes. Environmental education is embedded in science, management, law, humanities, and technical disciplines, demonstrating a strong commitment toward the Sustainable Development Goals (SDGs) of the United Nations.

Inclusion of Climate Change & Sustainability in Curriculum

KMCLU offers structured courses that directly address:

- Climate Change
- Sustainable Development
- Environmental Protection
- Biodiversity Conservation
- Pollution Control
- Environmental Legislation
- Disaster Management
- Ecological Economics

These themes are covered across more than 45 courses in programmes such as BBA, B.Tech, B.Sc., BA, LLB, MBA, MA Education, and MA Geography etc.

S.No.	Programme	Paper Code	Paper Name	Credit
1	B.COM I	BOM2511446	VALUE ADDED COURSE : A). ANCIENT TRADE AND PRINCIPLES OF CHANAKYA'S MANAGEMENT B). WORKPLACE HEALTH AND SAFETY C). SUSTAINABLE WORK PRACTICES	5
2	B.PHARM II	BP206T	ENVIRONMENTAL SCIENCES-THEORY	3
3	B.SC BIOTECH II	BBT220103T	ENVIRONMENTAL SCIENCES	4
4	B.TECH BIOTECH III	TBT03171	ENVIRONMENTAL BIOTECHNOLOGY	4
5	B.TECH BIOTECH III	TBT03173	ENVIRONMENTAL BIOTECHNOLOGY LAB	1
6	B.TECH BIOTECH III	TBT03169	ENVIRONMENTAL SCIENCE	4
7	B.TECH BIOTECH III	TBT03170	ENVIRONMENTAL SCIENCE LAB	1
8	B.TECH CIVIL I	TCE01126	ENVIRONMENTAL SCIENCE	2
9	B.TECH CIVIL II	TCE02126	ENVIRONMENTAL SCIENCE	2
10	B.TECH CIVIL VI	TCE06126	ENVIRONMENTAL ENGINEERING-I	4
11	B.TECH CIVIL VII	TCE07132	ENVIRONMENTAL ENGINEERING LAB-II	1
12	B.TECH CIVIL VII	TCE07126	ENVIRONMENTAL ENGINEERING-II	4
13	B.TECH CIVIL VII	TCE07131	ENVIRONMENTAL POLLUTION CONTROL	2
14	B.TECH I	ASC2413805	ENVIRONMENTAL SCIENCE	0
15	B.TECH II	ASC2423805	ENVIRONMENTAL SCIENCE	0
16	BA EDUCATION VI	AED2461203	VISIT TO AN ANGANWADI CENTRE AND REPORT PREPARATION. WRITE AND SUBMIT AN ARTICLE ON ANY TRENDING SOCIAL-CULTURAL ENVIRONMENTAL ISSUE	2
17	BA GEOGRAPHY IV	AGO04597	SUSTAINABLE DEVELOPMENT	6
18	BA LLB IV	BLL2504003	ENVIRONMENTAL STUDIES	4
19	BA LLB VI	BALL623781	ENVIRONMENTAL LAW	4
20	BBA I	BBA2411507	ENVIRONMENTAL SCIENCE AND SUSTAINABILITY	2
21	BSC BIOTECH VI	BSB2462001	INDUSTRIAL AND ENVIRONMENTAL BIOTECHNOLOGY	4
22	BSC BIOTECH VI	BSB2462003	INDUSTRIAL AND ENVIRONMENTAL BIOTECHNOLOGY LAB	2
23	BSC BOTANY VI	BOT2562403	ECOLOGY & ENVIRONMENT	4
24	BSC BOTANY VI	BOT2562402	LAB ON CYTOGENETICS, CONSERVATION & ENVIRONMENT MANAGEMENT	2
25	BSC MICRO II	BMB2422101	AGRICULTURE AND ENVIRONMENTAL MICROBIOLOGY	4

26	BSC MICRO II	BMB2422102	EXPERIMENTS IN AGRICULTURE AND ENVIRONMENTAL MICROBIOLOGY	2
27	UG ZOOLOGY IV	NBZG422454	CLIMATE AND ENVIRONMENTAL PROTECTION (ZOOLOGY)	3
28	BSC ZOOLOGY VI	BZG2462502	ECOLOGY, ETHOLOGY, ENVIRONMENTAL SCIENCE AND WILDLIFE	4
29	BSC ZOOLOGY VI	BZG2462503	LAB ON ECOLOGY, ENVIRONMENTAL SCIENCE, BEHAVIORAL ECOLOGY & WILDLIFE	2
30	LLB IV	LLB2543401	ENVIRONMENTAL LAWS,FOREST LAWS & ANIMALS PROTECTION LAWS	4
31	UG BIOTECH I	NOR2412003	ENVIRONMENTAL SCIENCES (BIOTECHNOLOGY)	6
32	UG BIOTECH II	NOR2522004	ENVIRONMENTAL SCIENCES (BIOTECHNOLOGY)	6
33	UG GEOGRAPHY III	SEC2530904	ENVIRONMENT AND DEVELOPMENT (GEOGRAPHY)	3
34	UG GEOGRAPHY III	NAGO322243	SUSTAINABLE DEVELOPMENT (GEOGRAPHY)	4
35	UG GEOGRAPHY IV	NAGO422244	RESOURCES AND ENVIRONMENT (GEOGRAPHY)	4
36	UG GEOGRAPHY IV	NOR2540904	SUSTAINABLE DEVELOPMENT (GEOGRAPHY)	6
37	UG HISTORY I	A050102T	ENVIRONMENTAL ISSUES IN INDIA	4
38	UG HISTORY I	NOR2410602	ENVIRONMENTAL ISSUES IN INDIA (HISTORY)	6
39	UG HISTORY II	NOR2520603	ENVIRONMENTAL ISSUES IN INDIA (HISTORY)	6
40	UG I	EVS0107	ENVIRONMENTAL STUDIES	2
41	UG II	ECC2420009	HUMAN VALUES AND ENVIRONMENTAL STUDIES	2
42	UG III	Z030301	HUMAN VALUES AND ENVIRONMENTAL STUDIES	
43	UG ZOOLOGY III	NBZG322453	ENVIRONMENT AND PUBLIC HEALTH (ZOOLOGY)	4
44	UG ZOOLOGY IV	NOR2542504	ENVIRONMENT AND PUBLIC HEALTH (ZOOLOGY)	6
45	LLM II	LLM2423507	ENVIRONMENTAL LAW	
46	MA EDUCATION III	MED2431256	ENVIRONMENT EDUCATION	5
47	MA GEOGRAPHY II	MGO2420951	GEOGRAPHY AND ENVIRONMENTAL STUDIES (T)	4
48	MBA I	MBA2411554	MANAGERIAL ECONOMICS AND ENVIRONMENT	4
49	PG EDUCTION III	NMED36256	ENVIRONMENT EDUCATION	5

ADVANCED ENVIRONMENTAL ECONOMICS-I

Course Code: MAECC-103 **Credit:05**

Course Objective: Students will come to know about the relevance of environmental economics and how market allocate goods & how sometimes market fail to allocate environmental resources optimally and they will come to know how sustainable development of the economy can be attained.

Course Content

Unit - I

Introduction, Nature Scope and Methodological Issues in Environmental Economics, Institutions and Environmental Governance, Relation between development and environmental stress; Environmental Kuznet's Curve, Impact of Human Activity on Environment.

Unit – II

Environmental Kuznet's Curve, Ecology, Environment and Eco-system, Ecology and Economics, Economy- Ecology-Environment Interaction; Conflicting Paradigms, The Material Balance Principle: Ecological Concern in the evolution of Economic thought. Entropy Law

Unit-III

Economics of Exhaustible Resources: Hotelling's rule; Solow-Harwick's Rule; Market structure and optimal extraction policy; Uncertainty and the rate of resources extraction; Resource scarcity. Economics of Renewable Resources; Economic Models of forestry and fisheries; Extinction of species.

Unit – IV

Concept of Sustainable Development, Sustainable Economic Growth and Development: An Economists perspective. Rules of Sustainable Development, Indicators of Sustainable Development, Measuring Sustainable Development,

Unit – V

Energy & Environment, Infrastructure and Environment, Trade and Environment, Agriculture and Environment, Industry and Environment, Services Sector and Environment, Economics of Pollution

Subject- Geography	
Course Code: **GRB CC 801 T**	Course Title: **Geography and Environmental Studies**

Course outcomes:Students will be able to understand
CO 1.Understand structure composition of Environment.
CO 2. Study about nutrient cycling.
CO 3.Understand the value of resources.
CO 4.Make awareness about conservation of resources.
CO 5.Understand environmental problem their cause, effects and remedies.
CO 6.Get the knowledge about environmental hazardous and management.
CO 7.Understand the various environmental protection acts.
CO 8.The students will learn various issues related to environmental impact assessment and its importance.

Credit: 4	Course Type - Core Course
Max. Marks: 100(25+75)	Total No. of Lectures-60

Unit	Topics	No. of Lectures =60
I	**Bases.** Meaning and scope of environmental geography; Approaches to study of environment; Types of environments, Environment and society, Environment and development, Environmental perception and cognitive maps.	**15**
II	**Ecology and Ecosystem.** Definition, scope and significance of ecology; Basic ecological principles; Geo-biochemical cycles: carbon, nitrogen, oxygen and phosphorus cycles; Ecosystems, Biomes and biomass; Biodiversity: depletion and conservation.	**15**
III	**Hazards and Changes.** Environmental hazards; Natural hazards: landslides, soil erosion, droughts and floods, earthquakes; Man-made hazards: technological hazards, global climatic changes, global warming, green house effects, ozone depletion, sedimentation in rivers and reservoirs.	**15**
IV	**Pollution and Management.** Environmental pollution: pollutants, sources and types of pollution; Water, soil, air, and noise pollution; Solid waste disposal; Environmental pollution and health.**Environmental education**; Environmental impact analysis; Environmental monitoring and standards; Environmental policy and legislation; Environmental management.	**15**

Suggested Readings:

1. Anjuneyulu, Y. (2002): Environmental Impact Assessment Methodologies. B. S. Publications, Hyderabad.
2. Anjuneyulu, Y. (2004): Introduction to Environmental Science. B. S. Publications, Hyderabad.
3. Athavale, R. N. (2003): Water Harvesting and Sustainable Supply in India. Rawat Publications., Jaipur.
4. Bilas, R. (1988): Rural Water Resource Utilization and Planning. Concept Publishing. Company, New Delhi.
5. Blaikie, P., Cannon, T. and Davis, I. (eds.) (2004): At Risk: Natural Hazards, Peoples Vulnerability and Disasters. Routledge, London.
6. Clarke, J. I., Curson, P., Kayastha S. L. and Nag P. (eds.) (1991): Population and Disaster. Basil Blackwell

Suggested Continuous Evaluation Methods:

Test with multiple choice questions/short and long answer questions

Programme/Class: Bachelor (Research in Faculty)/ or M.A./M.Sc.	Year: IV	Semester: VIII M.A./M.Sc. (II Semester)

II Year (Semester IV) Zoology GE 2/Minor Elective
Environment and Public Health

Programme/Class: Diploma	Year: 2	Semester: 4
Subject: Zoology		
Course Code: **B050404T**	Course Title: **Environment and Public Health**	

Course outcomes:

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

- The concept of environmental toxicology; sources of pollution, their bioindicators, and how to minimize and overcome the problem
- The characteristics of different types of pollutions; air, water and noise pollution and their control.
- The effects of persistence of toxic substances in the environment and its consequence on living organisms.
- The students will acquire knowledge about the biology and disease relationship of various animals of veterinary and medical importance.

Credits: 6 Theory	GE 2/Minor Elective
Max. Marks: 25+75	

Total No. of Lectures-60

Units	Topic	No of Lectures 60
I	**Introduction** Sources of Environmental hazards, hazard identification and accounting, fate of toxic and persistent substances in the environment, dose Response Evaluation, exposure Assessment.	15
II	**Climate Change** Greenhouse gases and global warming, Acid rain, Ozone layer destruction, Effect of climate change on public health **Pollution** Air, water, noise pollution sources and effects, Pollution control	15
III	**Waste Management Technologies** Sources of waste, types and characteristics, Sewage disposal and its management, Solid waste disposal, Biomedical waste handling and disposal, Nuclear waste handling and disposal, Waste from thermal power plants, Case histories on Bhopal gas tragedy, Chernobyl disaster, Seveso disaster and Three Mile Island accident and their aftermath.	15
IV	**Diseases** Causes, symptoms and control of tuberculosis, Asthma, Cholera, Minamata disease, typhoid	15

ख़्वाजा मुईनुद्दीन चिश्ती भाषा विश्वविद्यालय, लखनऊ, उत्तर प्रदेश (भारत)
Khwaja Moinuddin Chishti Language University, Lucknow, U.P. (India)
U.P. STATE GOVERNMENT UNIVERSITY,
(Recognised Under Section 2(f) & 12(B) of the UGC Act, 1956 & B.Tech. Approved by (AICTE)

B.Sc. 3 Year (Semester 6) Zoology Paper 2

Ecology, Ethology, Environmental Science and Wildlife

Programme/Class: Degree	Year: 3	Semester: 6
Subject: Zoology		
Course Code: **B050602T**	Course Title: **Ecology, Ethology, Environmental Science and Wildlife**	

Course outcomes:

The student at the completion of the course will learn:

- Complexities and interconnectedness of various environmental levels and their functioning.
- Global environmental issues, their causes, consequences and amelioration.
- To understand and identify behaviours in a variety of taxa.
- The proximate and ultimate causes of various behaviours.
- About the molecules, cells, and systems of biological timing systems.
- Conceptualizing how species profitably inhabit in the temporal environment and space out their activities at different times of the day and seasons.
- To interpret the cause and effect of lifestyle disorders contributing to public understanding of biological timing.
- To understand the importance of wildlife conservation.

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks:33

Total No. of Lectures-Tutorials- 60

Unit	Topic	No of Lectures
I	**Introduction to Ecology** • History of ecology, Autecology and synecology, Levels of organization, Laws of limiting factors, Study of physical factors	04
II	**Organization of Ecosystem** • Levels of organization, Laws of limiting factors, Study of physical factors, • Population: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion, Exponential and logistic growth, • Types of ecosystems with one example in detail, Food chain: Detritus and grazing food chains, Food web, Energy flow through the ecosystem, • Ecological pyramids and Ecological efficiencies, Nutrient and biogeochemical cycle with one example of Carbon cycle	12
III	**Community Ecology** Community characteristics: species richness, dominance, diversity, abundance, Ecological succession with one example	07
IV	**Environmental Hazards** • Sources of Environmental hazards • Climate changes • Greenhouse gases and global warming	07

	• Acid rain, Ozone layer destruction	
V	**Effects of Climate Change** • Effect of climate change on public health • Sources of waste, types and characteristics, Sewage disposal and its management, Solid waste disposal, Biomedical waste handling and disposal, • Nuclear waste handling and disposal, Waste from thermal power plants, • Case histories on Bhopal gas tragedy, Chernobyl disaster, Seveso disaster and Three Mile Island accident and their aftermath	06
VI	**Behavioural Ecology and Chronobiology** • Origin and history of Ethology, • Instinct vs. Learnt Behaviour • Associative learning, classical and operant conditioning, Habituation, Imprinting, • Circadian rhythms; Tidal rhythms and Lunar rhythms • Chronomedicine	08
VII	**Introduction to Wild Life** • Values of wild life - positive and negative; Conservation ethics; Importance of conservation; Causes of depletion; World conservation strategies.	08
VIII	**Protected areas** • National parks & sanctuaries, Community reserve; Important features of protected areas in India; Tiger conservation - Tiger reserves in India; Management challenges in Tiger reserve	08

B.Sc. 3 Year (Semester 6) Botany Paper 2
Ecology & Environment

Programme/Class: Degree	Year: 3	Semester: 6
Subject: Botany		
Course Code: B040602T	Course Title: **Ecology & Environment**	

Course outcomes:	**Bloom's Taxonomy**
CO1-Acquaint the students with complex interrelationship between organisms and environment;	K1, K3
CO2-Make them understand methods for studying vegetation, community patterns and processes, ecosystem functions, and principles of phytogeography.	K2, K4
CO3-This knowledge is critical in evolving strategies for sustainable natural resource management and biodiversity conservation.	K3, K4

Credits: 4	Core Compulsory
Max. Marks: 25+75	Min. Passing Marks:33
Total No. of Lectures-Tutorials- 60	

Unit	Topic	No of Lectures
I	**Natural resources & Sustainable utilization:** Land Utilization, Soil degradation and management strategies; Restoration of degraded lands. Water , Wetlands; Threats and management strategies, Ramsar sites ,Forests: Major and minor forest products; Depletion, Biological Invasion, Energy: Renewable and non-renewable sources of energy , Contemporary practices in resource management : EIA, GIS, Participatory Resource Appraisal, Ecological Footprint with emphasis on carbon footprint, Resource Accounting.	07
II	**Ecology & Ecosystem** Definition of Ecology, Ecological Factors, Positive and negative interactions. Ecosystem – Concept of an ecosystem-structure and function of an ecosystem. Abiotic and biotic com-Energy flow in an ecosystem Ecological Succession-Definition &types. Processes and types (autogenic, allogenic, autotrophic, heterotrophic, primary & secondary), Hydrosere and Xerosere. Food chains and food webs , Ecological pyramids, production and productivity; And components. Types of ecosystems: Forest Ecosystem, Grass land ,Crop land, aquatic Ecosystems Ecological Adaptations – Hydrophytes, Xerophytes, Halophytes, Epiphytes and Parasites.	08
III	**Soil Formation, Properties & Conservation** Soil: Origin, Formation, composition, Soil types, Soil Profile, Soil Microorganisms, soil processes, Soil Erosion, Biogeochemical cycles, Soil Conservation: Biological– Contour farming, Mulching, Strip cropping, Terracing and	07

	Crop rotation. Mechanical–Basin Listing, Construction of dams, Water Shed Management, Soil reclamation	
IV	**Biodiversity and its conservation:** Definition -genetic, species, and ecosystem diversity. Value of biodiversity: : social, ethical, aesthetic and option values hot spots of Biodiversity &threats to biodiversity, Biotic communities and populations, their characteristics and dynamics. Endemic and endangered species of plants in India. Ecological niche, ecotypes, ecological indicators. ***Conservation of Biodiversity:*** Ex-situ and in-situ conservation, Red data book, botanical gardens, National park, Sanctuaries, hot & hottest spots and Bioreserves. Role of Seed Bank and Gene Bank Valuing plant resources,ecotourism, Role of NBPGR, FAO, BSI.	07
V	**Phytogeography:** Biogeographic regions of India & world, Agroecological & Floristic zones of India. Natural vegetation of India, static and dynamic plant geography, basic principles governing geographical distribution of plants, Phytogeographical regions of India, Vegetational types in Uttar Pradesh.	07
VI	**Environmental audit & Sustainability** Concept of environmental audit; Guidelines of environmental audit; Methodologies adopted along with some industrial case studies; Environmental standards: ISO 14000 series; Scheme of labelling of environment friendly products (Ecomark); Life cycle analysis; Concept of energy and green audit, Sustainability indices; Strategies and debates on sustainable development; Concept of Sustainable Agriculture; India's environment action programme: issues, approaches and initiatives towards Sustainability; Sustainable development in practice; Urbanization; Concept and characteristics of smart city; Urban resources and environmental problems; Carrying capacity analysis; Concept of ecological footprints.	08
VII	**Pollution ,Waste management & Circular Economy** Environmental pollution, Environmental protection laws, Bioremediation, Activated Sludge Process (ASP) – Trickling Filters – oxidation ponds, fluidized bed reactors, membrane bioreactor, neutralization, ETP sludge management; digesters, up flow anaerobic sludge blanket reactor, fixed film reactors, sequencing batch reactors, hybrid reactors, bioscrubbers, biotrickling filters; regulatory framework for pollution monitoring and control; case study: Ganga Action Plan; Yamuna Action Plan; implementation of CNG ;Waste- Types , collection and disposal, Recycling of solid wastes (hazardous & non-hazardous) classification, collection and segregation, Incineration, Pyrolysis and gasification , Sanitary landfilling ; composting, Biogas production, Circular Economy & sustainability.	08
VIII	**Environmental ethics, Carbon Credits &Role of GIS** Carbon credit: concept, exchange of carbon credits. Carbon sequestration, importance, meaning and ways. Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.	08

Programme/Class: Certificate	**Year:** First	**Semester:** Second
Subject: MICROBIOLOGY		
Course Code: B080201T	**Course Title:** Agriculture and Environmental Microbiology	

Course Outcomes:	**Bloom's Taxonomy**
CO1- Get acquainted with natural habitats of diverse protection.	K1, K2
CO2- Understand how microbes interact among themselves and with higher plants and animals with the helpof various examples.	K2, K4
CO3- Become aware of the important role microbes play in bio-geochemical cycling of essential elements occurring within an ecosystem and its significance.	K3, K5
CO4- Gain in depth knowledge of different types of solid waste, liquid waste and their management.	K2, K4
CO5- Get familiar with problems of pollution and applications of clear up technologies for the pollutants.	K3, K6
CO6- Know about the diverse microbial populations in various natural habitats like soil, air, water.	K4, K6
CO7- Gain knowledge of the bio-fertilizer and their types.	K3,K5

Credits: 4	**Core:** Compulsory
Max. Marks: 25+75	**Min. Passing marks:** as per rules

Total No. of Lectures-Tutorials-Practical(in hours per week): **L-T-P:** 4-0-0

Unit	Topics	Total No. of Lectures/ Hours (60)
I	**Microorganisms and their habitats** Structure and function of ecosystem; Terrestrial environment: soil profile and soil microflora; Aquatic Environment: microflora of fresh water and marine habitats; Atmosphere: Aeromicroflora and dispersion of microbes; Animal Environment: Microbes in/on human body (microbiomes) & animal (Ruminants) body; Extreme habitats: Extremophiles: Microbes thriving at high & low temperature, pH. High hydrostatic & osmotic pressures, salinity and low nutrient level; Microbial succession in decomposition of plant organic matter.	8
II	**Microbial Interactions** Microbe interactions: Mutualism, synergism, commensalism, competition, amensalism, parasitism, predation; Microbe-Plant interaction: positive-negative interaction; Microbe-Animal interaction: positive-negative interaction; Microorganism of rhizosphere, rhizoplane and phylloplane, mycorrhiza (types and its applications).	8

III	**Biogeochemical cycling** Carbon cycle: Microbial degradation of cellulose, hemicellulase, lignin and chitin; Nitrogen cycle: Nitrogen fixation, ammonification, nitrification, denitrification and nitrate reduction; Phosphorous cycle: Phosphate Immobilisation and solubilisation; Sulphur cycle: Microbes involved in sulphur cycle.	**8**
IV	**Waste management** Solid waste management: Source and type of solid waste, method of solid waste disposal (composting and sanitary landfill), Liquid waste management: composition and strength of sewage (BOD & COD), primary, secondary, (oxidation pond, trickling filter, activated sludge process and septic tank) and tertiary sewage treatment.	**8**
V	**Microbial Bioremediation** Principle and degradation of common pesticides, organic (hydrocarbon, oil spills) and inorganic matter, biosurfactants.	**6**
VI	**Water potablity** Treatment and safety of drinking water; Methods to detect potability of water sample: Standard qualitative procedure- MPN test/Presumptive test, confirmed and completed test for faecal-coliforms Membrane filter technique, Presence/Absence test fecal coliform.	**6**
VII	**Biofertilizer** Definition, Types- Bacterial, Fungal, Phosphate solubilizer, BGA & associative; Mode of application; Advantages and Disadvantages.	**8**
VIII	**Biopesticides** Introduction and definition; Types of biopesticides; Integrated pest management (IPM); Mode of action; Factor influencing; Applications, advantages& disadvantages.	**8**

Department of Higher Education
U.P. Government, Lucknow

National Education Policy-2020

Common Minimum Syllabus for all U.P. State Universities

Co-curricular course: Semester-3

Course Title: Human Values and Environment studies

Name	Designation	Affiliation
Steering Committee		
Mrs. Monika S. Garg, (I.A.S.), Chairperson Steering Committee	Additional Chief Secretary	Dept. of Higher Education U.P., Lucknow
Prof. Poonam Tandan	Professor, Dept. of Physics	Lucknow University, U.P.
Prof. Hare Krishna	Professor, Dept. of Statistics	CCS University Meerut, U.P.
Dr. Dinesh C. Sharma	Associate Professor	K.M. Govt. Girls P.G. College Badalpur, G.B. Nagar, U.P.

Syllabus Developed by:

S.No.	Name	Designation	Department	College University
1.	Dr. Ajai Prakash	Astt. Professor	Business Administration	University of Lucknow
2.	Dr. Manuka Khanna	Professor	Political Science	University of Lucknow
3.	Dr. Amita Kannuajia	Professor	Zoology	University of Lucknow
4.	Dr. Rashi Kesh	Sr. Astt. Professor	HRD, FMS	VBS Purvanchal University, Jaunpur
5.	Dr. Jyoti Prakash	Sr. Astt. Professor	Amity Inst. of Biotechnology	Amity University, Lucknow
6.	Prof. Nishant Kumar	Astt. Professor	Business Administration	Lucknow University, Lucknow

Syllabus: Human Values and Environment studies

Programme/Class: Certificate	Year: Second	Semester: Third
Co-Curricular Course		
Course Code: Z030301	Course Title: Human Values and Environment studies	

Course outcomes:

The mission of the course on Human Values and Environmental Studies is to create morally articulate solutions to be truthful and just and to become responsible towards humanity. The course seeks to establish a continuous interest in the learners to improve their thought process with intent to develop a new generation of responsible citizens capable of addressing complex challenges faced by the society due to disruptions in human interactions effecting human values. This course works towards

- Building fundamental knowledge of the interplay of markets, ethics, and law,
- Look at various challenges faced by individual to counter unethical issues
- Look at core concepts for business ethics
- Look at core concepts of anti-corruption
- Look at core concepts for a morally articulate solution evolver to management issues in general,
- Issues of sustainable development for a better environment.
- To know how environmental degradation has taken place.
- Be aware of negotiations and international efforts to save environment.
- How to develop sustainably?
- Efforts taken up by UN in Sustainable Development.
- Efforts taken by India in Sustainable Development.

Credits: 2	
Max. Marks: 100	Min. Passing Marks:40

Total No. of Lectures-Tutorials-Practical (in hours per week): L-T-P: 2-0-0
As the course requires two areas of Human Values and Environment Studies institutions can even opt for a parallel delivery

Unit	Topics	No. of Lectures Total=30
I	**Human Values**- Introduction- Values, Characteristics, Types ,Developing Value system in Indian Organisation , Values in Business Management , value based Organisation , Trans –cultural Human values in Management. Swami Vivekananda's philosophy of Character Building, Gandhi's concept of Seven Sins, APJ Abdul Kalam view on role of parents and Teachers. **Human Values and Present Practices –** Issues : Corruption and Bribe , Privacy Policy in Web and Social Media, Cyber threats ,Online Shopping etc. Remedies **UK Bribery Act, Introduction to sustainable policies and practices in Indian Economy.** **Principles of Ethics** **Secular and Spiritual Values in Management**- **Introduction**- Secular and Spiritual values, features , Levels of value Implementation. Features of spiritual Values , **Corporate Social Responsibility**- Nature, Levels ,Phases and Models of CSR, Corporate Governance. CSR and Modern Business Tycoons Ratan Tata, Azim Premji and Bill Gates.	02 02 03
II	**Holistic Approach in Decision making**- Decision making**,** the decision making process , The Bhagavad Gita: Techniques in Management , Dharma and Holistic Management. **Discussion through Dilemmas** – Dilemmas in Marketing and Pharma Organisations, moving from Public to Private – monopoly context , Dilemma of privatisation, Dilemma on liberalization, Dilemma on social media and cyber security , Dilemma on Organic food , Dilemma on standardization ,Dilemma on Quality standards. **Case Studies**	03 03 02
III	Ecosystem: Concept, structure & functions of ecosystem : producer, consumer, decomposer, foodweb, food chain, energy flow, Ecological pyramids Conservation of Biodiversity- In-situ & Ex- situ conservation of biodiversity Role of individual in Pollution control Human Population & Environment Sustainable Development India and UN Sustainable Development Goals Concept of circular economy and entrepreneurship	7
IV	Environmental Laws? International Advancements in Environmental Conservation Role of National Green Tribunal Air Quality Index Importance of Indian Traditional knowledge on environment	8

	Bio assessment of Environmental Quality Environmental Management System Environmental Impact Assessment and Environmental Audit	

Environmental Science and Sustainability

BBA IST SEM

Unit 1: Understanding Environment, Natural Resources, and Sustainability:

Fundamental environmental concepts and their relevance to business operations; Components 20 and segments of the environment, the man-environment relationship, and historical environmental movements. Concept of sustainability; Classification of natural resources, issues related to their overutilization, and strategies for their conservation. Sustainable practices in managing resources, including deforestation, water conservation, energy security, and food security issues. The conservation and equitable use of resources, considering both intergenerational and intergenerational equity, and the importance of public awareness and education

Unit 2: Ecosystems, Biodiversity, and Sustainable Practices:

Various natural Ecosystems, learning about their structure, functions, and ecological characteristics. The importance of biodiversity, the threats it faces, and the methods used for its conservation. Ecosystem resilience, homeostasis, and carrying capacity, emphasizing the need for sustainable ecosystem management. Strategies for in situ and ex situ conservation, nature reserves, and the significance of India as a mega diverse nation.

Unit 3: Environmental Pollution, Waste Management, and Sustainable Development:

Various types of environmental pollution, including air ,water, noise, soil, and marine pollution, and their impacts on businesses and communities. Causes of pollution, such as global climate change, ozone layer depletion, the green house effect, and acid rain, with a particular focus on pollution episodes in India. Importance of adopting cleaner technologies; Solid waste management; Natural and man-made disasters, their management, and the role of businesses in mitigating disaster impacts.

Unit4: Social Issues, Legislation, and Practical Applications: Dynamic interactions between society and the environment, with a focus on sustainable development and environmental ethics. Role of businesses in achieving sustainable development goals and promoting responsible consumption. Overview of key environmental legislation and the judiciary's role in environmental protection, including the Water (Prevention and Control of Pollution) Act of 1974,the Environment (Protection) Act of 1986, and the Air (Prevention and Control of Pollution) Act of 1981. Environmental justice, environmental refugees, and there settlement and rehabilitation of affected populations; Ecological economics, human population growth, and demographic changes in India.

LINK: BBA-SEM-I-SYLLABUS.pdf

Programme/Class: Diploma/B.A./B.Sc.	Year: II	Semester: IV
Subject- Geography		
Course Code: **GRB GE303T**	Course Title: **Sustainable Development**	

Course outcomes:

- Understand the impact of the acquired knowledge in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.
- Gain knowledge about Sustainable Development Policies and Programmes

Credit: 4	Course Type - General Elective 1
Max. Marks: 100 (25+75)	Min. Passing Marks:40

Total No. of Lectures-Tutorials-Practical (in hours per week): L- 4 /w

Unit	Topics	No. of Lectures Total=60
I	Sustainable Development: Definition, Components, Limitations and Historical Background, The Millennium Development Goals: National Strategies and International Experiences,	**15**
II	Sustainable Regional Development: Need and Examples from different Ecosystem	**15**
III	Inclusive Development: Education, Health; Climate Change: Human Rights to Health: Poverty, Diseases; the challenges of Universal Health Coverage; Policies and Global Cooperation for Climate Change	**15**
IV	Sustainable Development Policies and Programmes: The Proposal for SDGs at Rio+20; Illustrative SDGs; National Environmental Policy, CDM	**15**

Link: Syllabus | Khwaja Moinuddin Chishti Language University, Lucknow