





### 1.3.1 - Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

SUBJECT	COURSE	CROSS CUTTING ISSUES	TOPICS	PRACTICAL
<b>Political Science</b>	(MA) IV Semester CBCS Course (OPEN ELECTIVE) 3 CREDITS PAPER I: <b>ETHICS AND POLITICS IN INDIA 1-</b>	<b>Ethics</b>	<p>Ethics:</p> <p>1-Meaning and Relevance in Social and Political System, Ethical Reasoning in Politics.</p> <p>2- Issues of Poverty, Hunger, and Measures to address these issues.</p> <p>3- Ethics and Environment, Morality and Uses of Nature.</p> <p>4- Development v/s Environment- Cultural Perspective of Environmental Protection.</p> <p>5- Corruption in Public Life and Its Impact on Democratic Order, Corruption in Private life and Its implications for Political Culture.</p> <p>6- Freedom of Speech, Hate Speech, Implication for Gender, Justice, and Communal Harmony.</p> <p>7- Minority Rights in India.</p> <p>8- Secularism, Politics of Polarization, Mob Lynching.</p> <p>9- Tolerance and Indian Culture, Its Relevance in Political Life.</p> <p>10- Ethics in Professions – Teaching, Legal, Media, and Business.</p>	
<b>Bachelor of Education</b>	B.Ed. III Sem. <b>Gender, School and Society</b>	<b>Gender and Human Values</b>	<p>Unit- I Gender Issues: Key Concepts</p> <p>Unit-II Gender Issues: Paradigm Shift</p> <p>Unit-III Gender and Education</p> <p>Unit-IV Gender and Social Development</p>	

<p><b>English</b></p>	<p>M.A. I Sem. <b>(Gender studies-An introduction)</b></p>	<p><b>Gender and Human Values</b></p>	<p>Unit-I General introduction Unit-II Mary Wollstonecraft Unit-III Virginia Woolf Unit-IV Simone de Beauvoir Unit-V Betty Friedan Unit-VI Chandra Talpade Mohanty</p>	
<p><b>Sociology</b></p>	<p>M.A. IV Sem. <b>(Gender and Society (SOC-EC-403)</b></p>	<p><b>Gender and Human values</b></p>	<p>*Social construction of gender *Health status of women in India *Women and economy *Women in polity</p>	
<p><b>Economics</b></p>	<p>M.A. III Semester <b>Demography (Paper code: 1288)</b></p>	<p><b>Gender</b></p>	<p>*Theories of Population: Malthusian Theory. Post Malthusian Theories. Optimum Theory. Theory of Demographic Transition. Easterlin and New Home Hypothesis. Population Cycles. *Methodology of Demographic Research: Vital Statistics. Measures of Fertility and Reproduction. Measures of Mortality. *Concept and Use of Life Table. Reproductive and Child Health in India. Temporal and Spatial Variation in Sex Ratios. Methods of Population Projection. Stable, Stationary and Quasi-stationary Population Model. *Aging of Population in India – Age Structure of Population. Changes in Family Structure and Old Age Security. Population Growth and Economic Development. Population, Health, Poverty and Environment Linkage in India. Effect of Population Growth on Savings and Capital Formation. *Population Unemployment and Food Supply. Qualitative Control of Population. Human</p>	

			Development Index. Human Resource Development. Concept of Demographic Dividend.	
<b>Environment Studies</b>	B.A.-II, B.Sc.-II, B.Com.- II year <b>Environmental Studies</b>	<b>Environment and Sustainability</b>	Unit-I Ecosystem Unit-II Biodiversity and its conservation Unit-III Causes, effect and control measures of pollutions Unit-IV Disaster management Unit-V Environmental management	
<b>Botany</b>	B.Sc. III year Paper II <b>Ecology</b>	<b>Environment and sustainability</b>	Unit-I General concept of ecology and environment Unit-II Population Unit-III Definition, structure and attributes of community Unit-IV Ecosystem concept, energy flow, food chain, food web and ecological pyramids Unit-V Biogeochemical cycles Unit-VI Preliminary idea of environmental pollution	
<b>Zoology</b>	B.Sc. II year <b>Ecology and environmental biology</b>	<b>Environment and sustainability</b>	Unit-I Definition of ecology Unit-II The environment concept of ecosystem Unit-III Biosphere Unit-IV Population Unit-V Biodiversity Unit-VI Pollution and its control Unit-VII India's wild life habitat	

<b>Environmental Science</b>	B.B.A. IV semester <b>Environmental science</b>	<b>Environment and Sustainability</b>	Unit-I The Multidisciplinary Nature of Environmental Studies Unit-II Natural Resources: Renewable and non-renewable Unit-III Ecosystems Unit-IV Biodiversity and its Conservation Unit-V Environmental Pollution Unit-VI Social Issues and the Environment Unit-VII Human Population and the Environment
<b>Bachelor of Education</b>	B.Ed. III Sem. <b>Teacher and Environmental Education</b> (B-302-B.1)	<b>Environment and Sustainability</b>	Unit-I Teacher as an educator and conservator of Environment. Unit-II Climate Change: Causes, Consequences and Remedies.
<b>Geography</b>	(MA) II semester CBCS, <b>Natural Resource Management Paper II</b>	<b>Environment and sustainability</b>	<b>Unit-I</b> Basic Framework: Concept; Definition; Classification of Natural Resources; Process of Natural Resource Development <b>Unit-II</b> Application Remote Sensing and Geographic Information System (GIS) in Natural Resources Studies: Resource Analysis; Resource Mapping; Natural Resources Information System <b>Unit-III</b> Ecology and Ecosystem: Meaning, Scope, Types and Classification of Ecology and Ecosystem; Functioning of Ecosystem; Productivity of Ecosystem; Tropic Levels, Food Chain and Food Web <b>Unit-IV</b> Natural Resource Management and Sustainable Development in Himalaya: Concept and Approaches of Natural Resource Management, Community Based Natural Resource

			Management; Participatory Natural Resource Management; Natural Resources Management and Sustainable Mountain Development	
<b>Geography,</b>	(MA) II Semester CBCS Course <b>Climate change impacts and adaptations Paper – III</b>	<b>Environment and sustainability</b>	<p><b>Unit –I</b> Fundamentals of Climatology: Meaning, Nature and Scope; relationships with meteorology and with other sciences; types of climatology; Elements of climate, Solar radiation and terrestrial heat balance; humidity and precipitation.</p> <p><b>Unit – II</b> Climate Types: Climatic Classification: Thronthwaite’s, Koeppen and Geiger’s; Regional Climatology: Tropical climates, mid latitude climates, polar and highland climates, monsoon, Mediterranean and desert climate.</p> <p><b>Unit – III</b> Climate Change: Responses &amp; Adaptation: Climatic Changes: Theories and Evidences of Paleo-Climates, global warming; ozone depletion; Variation in Precipitation Pattern; Impacts of Climate Change and Adaptation Strategies.</p> <p><b>Unit –IV</b> Climate change impacts (Case Studies) Impact of climate change on: Glaciers of Himalaya, Water discharge of rivers and springs, Agroecosystem, Forest &amp; grasslands, Disasters in Uttarakhand</p>	
<b>Geography</b>	(MA) III Semester CBCS Course , <b>Environmental management and sustainable development</b>	<b>Environment and sustainability</b>	<b>Unit – I</b> Environmental Problems: Types of environmental problems; causes and consequences of environmental problems at global regional and local levels; Global environmental change; Natural disasters;	

	<b>Paper – I</b>		<p>Environmental Impact Assessment (EIA).</p> <p><b>Unit – II</b> Sustainable Development: Concepts of Sustainable Development; Need of Sustainable Development; Sustainable Mountain Agriculture and Livelihood.</p> <p><b>Unit –III</b> Environmental Management: Concept of Environmental Management; Approaches to Environmental Management; Integrated Watershed Management; Disaster Management</p> <p><b>Unit – IV</b> Environmental Management in Uttarakhand Himalaya: Environmental Changes – Causes &amp; Consequences; Environmental Planning &amp; Sustainable Development; Disaster Management; Climate Change and Adaptation</p>	
<b>Geography</b>	(MA)Semester III CBCS Course <b>Agriculture Geography and Agro-ecosystem management</b>	<b>Environment and sustainability</b>	<p><b>Unit – I</b> Agricultural Types: Definition, Nature, scope, Significance of Agricultural Geography Approaches to the study of Agricultural Geography, Agricultural Land Use and Location Theories Agricultural types and their world distribution, Spatial patterns of major commodities in each type.</p> <p><b>Unit – II</b> Techniques of Agricultural Regionalization: Quantitative Techniques and methods in Agricultural Geography for measuring Agricultural Intensity, Agricultural Efficiency, Concentration and Diversification of Crops, Methods of delimitation of crop Combination and Agricultural regions. Whittlesey’s classification of Agricultural regions of the world.</p>	

			<p><b>Unit – III</b> Agricultural Ecology and Ecosystem: Agro-ecosystem – connotation, components , types and functioning, agroecosystem degradation with special reference to Himalaya, Agroecosystem and agro- energy environment Management.</p> <p><b>Unit – IV</b> Planning and Management: Regional Perspective: Problems of agriculture and agricultural planning in India, salient features of agricultural development of Uttarakhand Himalaya and their management and planning.</p>	
<b>Geography</b>	(MA) III Semester CBCS Course <b>Glacial Geomorphology Paper –IV(a)</b>	<b>Environment and sustainability</b>	<p><b>Unit – I</b> Theoretical Base: Definition of Glacial Geomorphology; Ice Age; Causes of ice ages; Pleistocene Glaciation; onset and retreat.</p> <p><b>Unit – II</b> Erosional Processes and Associated Landforms: Erosional process; glacial erosion, development of erosional landforms; superglacial, englacial and basal .</p> <p><b>Unit – III</b> Depositional Processes and Associated Landforms: Depositional processes: processes-stratified and non stratified; forms of moraines-glaciofluvial and glacio-lacustrine environment.</p> <p><b>Unit – IV</b> Periglacial Processes and Landforms: Periglacial process: frozen ground phenomenon – identical ,depth variations, classification and distribution; mechanism of frost action. Periglacial landforms;frost action and landforms-mass</p>	

			wasting and landforms, adaptation of human beings to periglacial environment.	
<b>GEOGRAPHY</b>	(MA) IV Semester CBCS Course <b>Integrated watershed development</b>	<b>Environment and sustainability</b>	<p><b>Unit I</b> Conceptual Base: Concept, Scope and Significance: Approaches of Watershed Management, Drainage of Watershed Management, Functioning of Ecosystem and Environmental Impact Assessment (EIA).</p> <p><b>Unit II</b> Ecosystem and Energy Environment: Land Use Pattern, Natural Resource appraisal and Development, Ecological Processes and Ecosystem: Agro-Ecosystem, forest Ecosystem, River Ecosystem and Hydrological Cycle; Energy Analysis and Energy Budget of the Watershed.</p> <p><b>Unit III</b> Environmental Status and Hazards: Environmental Health Status: Physical properties (Viz, Temperature, Rainfall, Soil etc.) and Human Habitat of the Watershed; Impact of Environmental and Anthropogenic Interferences on the Status and Quality of the Watershed; Major Natural Hazards: Landslides, Erosion, Floods, Droughts, Sedimentation, Disruption of Hydrological Cycle etc.</p> <p><b>Unit IV</b> Watershed Management: Watershed Management: Techniques and Methods, Land and Soil Conservation, Run-off Control, Sustainable Environment Management Plan for Local Resources</p>	
<b>Geography</b>	(MA) IV Semester CBCS Course	<b>Environment and</b>	<b>Unit – I</b> Fundamentals of Population Geography: Meaning, Nature, Scope and	



	<p><b>Population Geography &amp; Human resource development Paper – II (a)</b></p>	<p><b>sustainability</b></p>	<p>Significance of Population Geography, Methods, Techniques and Approaches of Population Geography. Population Geography and Demography; Human Resource Development and Population Explosion, Population Theories: Malthusian, Neo-classical &amp; Marxist, Population Data and Methods and Techniques of Mapping Population Data</p> <p><b>Unit – II</b> Demographic Traits: Measures and methods of estimating fertility and mortality; Population composition: age, sex, literacy, occupation, caste and tribe; Population Growth and Distribution: World patterns and Indian Growth Trends. Determinants of population distribution, The great human agglomerations, population cycle, population growth and its consequences; Population densities; population pressure; concepts of under, optimum and over- population.</p> <p><b>Unit – III</b> Human Migration: Types of migration, causes and consequences of migration; Growth and migration theories, Rural and urban population, population movements: International and internal causes and consequences of migration,</p> <p><b>Unit – IV</b> Population Projection and Planning: Typology of population regions with special reference to India, The balance of people and resources; population resource regions; population projection; population potential and</p>	
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			dispersion, population education and Human Resource Development planning	
<b>Geography</b>	(MA)Semester IV CBCS Course) (EC-ib) <b>Integrated mountain development with special reference to Uttarakhand</b>	<b>Environment and sustainability</b>	<p><b>Unit – I</b> Mountain Systems of the World Location, Extent, Origin and Physiography of the major mountain systems (i.e., Alps, Andes, Rockies) of the world. The Himalaya: Land Resource, Water Resource (Rivers, Glaciers and Lakes), Forests (Natural Vegetation) and Biodiversity, Degradation of natural resources.</p> <p><b>Unit – II</b> Major Environmental Challenges of the Himalaya Erosional Hazards, Deforestation, Loss of Biodiversity, and wild life, Natural Disasters: Earthquakes, Landslides, Forest Fires, Climate Change.</p> <p><b>Unit – III</b> Demographic Traits, Society and Culture Population: Growth and Distribution, Population Migration, Major Tribes (Gaddies, Bhotias, Gujars and Nagas), Local Indigenous Knowledge of different societies/groups,</p> <p><b>Unit – IV</b> Economic Perspective Agriculture, Livestock, Livelihood and Food Security, Tourism, Future prospects of development in the Himalaya.</p>	
<b>Geography</b>	(MA)Semester IV CBCS Course) (EC-iib) ) Biogeography Paper – III (b)	<b>Environment and sustainability</b>	<p><b>Unit-I</b> Fundamental Concepts: Concept, Scope, Significance and Development of Biogeography; Environment, Habitats and Plant-animal Association</p> <p><b>Unit-II</b> Plant Geography and</p>	

			<p>Zoo-geography: Elements of Plant Geography, Distribution of Forests and Major Plant Communities; Zoogeography and its environmental relationship; Classification and distribution of animals; faunal regions; biomes and their types; Biodiversity and its depletion</p> <p><b>Unit-III</b> Climate Change: Temporal Perspectives: Impact of Climate Change on Flora and Fauna with special reference to Uttarakhand Himalaya</p> <p><b>Unit-IV</b> Biotic Resource Management: National Forest and Wildlife Policy of India; Protected Areas and their management with special reference to National Parks, Wildlife Sanctuaries and Biosphere Reserves of Uttarakhand .</p>	
<b>Chemistry (Inorganic)</b>	M.Sc. III and IV semester	<b>Environmental chemistry</b>	<p>Unit-I Introduction of environmental chemistry</p> <p>Unit-II Atmosphere</p> <p>Unit-III Hydrosphere</p> <p>Unit-IV Lithosphere</p> <p>Unit-V Chemical toxicology</p> <p>Unit-VI Air pollution and water pollution</p>	
<b>Botany BOT/IV/EC/16 (vii)</b>	M.sc. IV semester	<b>Environmental Biology</b>	<p><b>I.</b> Environment</p> <p><b>II.</b> Resource and Energy Conservations</p> <p><b>III.</b> Environmental monitoring</p> <p><b>IV.</b> Ecotoxicology</p> <p><b>V.</b> Environmental Pollutions</p> <p><b>VI.</b> Environmental Impact Assessment</p> <p><b>VII.</b> Environmental Management</p>	
<b>Botany</b>	M.sc. IV	<b>Global Climate</b>	<b>General concept of Global</b>	

<p>BOT/IV/SCC/03</p>	<p>semester</p>	<p>Change</p>	<p>climate change; Greenhouse effect; Greenhouse gasses; Carbon foot print; Impact of global warming and climate change especially on elevated temperature, weather extremes, ecosystem disruption, human health, sea level rise and impact on forests; International initiative for mitigating global changes; Inter governmental panel on climate change (IPCC); United Nation Frame work convention on Climate change; Kyoto protocol; Montreal protocol; Paris Pact; India's initiatives for mitigating climate change.</p>	
<p><b>Botany</b> BOT/IV/EC/16(v)</p>	<p>M.sc. IV semester</p>	<p>Ethnobotany, Traditional knowledge and Intellectual Property Rights</p>	<p><b>Unit 1</b> Ethnobotany: Its Concept, Scope and Relevance. Interdisciplinary approaches in Ethnobotany. Ethnobotany in India: Retrospect and prospects. Methods of research in Ethnobotany. <b>Unit 2</b> Indigenous systems of medicines in India. Traditional Agriculture Practices in Ancient India. Some aspects of Biodiversity and Indian Traditions. <b>Unit 3</b> Role of ethnobotany in primary health care programmes and development of new drugs. Ethnobotany on development and conservation on bioresources. Plant exploration Crop and Germplasm collection of land races: Methods and</p>	

			<p>strategies.</p> <p><b>Unit 4</b>          Traditional knowledge of Uttarakhand: With species reference to food and medicine.          Ethnobotany of major tribal communities (Raji, Bhotia, Tharu and Boxa) of Uttarakhand.          Changing values in traditional societies and ecological implications.</p> <p><b>Unit 5</b>          Basic concepts of Intellectual Property Rights (IPRs).          The implications of the Intellectual Property Rights on the Convention on Biological Diversity (CBD).          Intellectual Property Rights with particular reference to Traditional knowledge and Biowealth.</p>	
<p><b>Zoology</b>          ZOO/IV/EC/B03          ,          ZOO/IV/EC/E03</p>	<p>M.Sc. IV semester</p>	<p>Wildlife Conservation</p>	<p><b>Unit I</b> :Indian Wildlife: Introduction, distribution of wildlife in ecological subdivision of India, IUCN categories Protected area network: national parks, wildlife sanctuaries, biosphere reserves and zoos in India, gene pool, habit, habitat and breeding biology of few mammals (viz., elephant, tiger).</p> <p><b>Unit II:</b> Reasons for wildlife depletion: Habitat fragmentation, habitat destruction, commercial wildlife exploitation, overgrazing etc., Wildlife conservation (policies and programmes), special projects for endangered species (Project Tiger, Gir</p>	

			<p>Lion Sanctuary Project, Crocodile Breeding Project).</p> <p><b>Unit III:</b> Principle and practice of wildlife management: Management of special habitats; riparian zones, grasslands</p> <p>Introduction to conservation biology, conservation values and ethics of conservation of natural resources. Conservation of biodiversity, patterns and processes, concepts of biodiversity, levels of biodiversity, genetic diversity, intra specific diversity, species richness, richness of higher taxa, ecosystem and biome diversity.</p> <p><b>Unit IV</b> International conventions on conservation (Ex-situ and in-situ conservation, conservation breeding (e.g., Vulture, Pygmy hog, Gharial, etc.), institutions and their role in conservation (Zoos, Natural History Museums and Collections, Zoological Survey of India and its regional centres. National and international zoological institutes, societies and academic bodies Brief account of Wildlife Acts and their amendments in India and World. Convention on International Trade in Endangered Species of Wild Fauna and Flora</p>	
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