**SCHEME AND SYLLABUS FOR THE SUBJECT OF ENVIRONMENTAL STUDIES**

The “Six month module syllabus for Environmental Studies for U.G. Courses” supplied by the UGC for the subject was approved for adoption in the Universities of the State. The subject is to be taught in 1st year of the U.G. Course.

The subject of Environmental studies will be included as a qualifying paper in all UG Courses (including professional courses also) from the session 2004-05 and the students will be required to qualify the same otherwise the **final result** will not be declared and **degree** will not be awarded.

Since the module syllabus for Environmental Studies for U.G. Courses supplied by the UGC has been adopted in toto, the scheme of examination proposed by the UGC has been approved by the Vice-Chancellor alongwith the syllabus of the course under section 11(5) of KU Act, 1986 so that the same becomes operative from the session 2004-05.

**Credit System:** The core course will be awarded 4 credits.

**Exams. Pattern:** In case of awarding the marks, the question paper should carry 100 marks. The structure of the question paper being:

**Paper-I** PART-A : Short Answer Pattern 25 Marks

PART-B : Essay type with inbuilt choice 50 Marks

**Paper -II** PART-C : Field Work (Practical) 25 Marks

**Annual System:** The examination of this compulsory qualifying subject of Environmental Studies in case of the DCC candidates will also be conducted by the Examination Branch of the University alongwith the annual examinations of other theory papers of the DCC candidates of the respective UG streams. With regard to the Field Work (Practical), the DCC candidates will be required to submit a Report of Practical Assignment of around 20 pages neatly written/typed,

duly bound by 30 March of the session which will be got evaluated by the Examination Branch of the University as in case of Practical Assignments/Project Report submitted by the DCC candidates of other courses.

**Instructions for the Examiners**

**Part-A** Question 1 is **compulsory** and will contain ten short-answer type question of 2.5 marks each covering the entire syllabus.

**Part-B** Eight essay type questions (with inbuilt choice) will be set from the entire syllabus and the candidates will be required to answer any four of them. Each essay type question will be of the 12-1/2 marks.

**PCP/Contact Classes:** The subject of Environmental Studies will also be taken up in the PCPs/Contact classes to be arranged by the University/Service Providers at their Study Centres/Study Centres in the affiliated colleges of the University with number of lectures at par with other subjects/papers of the respective courses.

Each candidate will be required to score minimum of 35% marks each in theory and Practical separately. The marks obtained in this qualifying paper will not be included in determining the percentage of marks/division obtained by them for the award of **‘degree’**. However, these will be shown in the detailed marks certificate of the student.

The candidates, who will not be able to pass in the subject of Environmental Studies (Theory and/or Field Work (Practical) in 1st year will have to qualify the same by appearing in the examination of Environmental Studies in 2nd year or 3rd year or thereafter by submitting a separate examination form and examination fee of Rs. 50/- as an ex-student as in the case of ‘Reappear’/’Compartment’ candidates. There will, however, be no supplementary examination in the subject of Environmental Studies.

**CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES FOR UNDER GRADUATE COURSES OF ALL BRANCHES OF HIGHER EDUCATION (AS APPROVED BY THE U.G.C.)**

**UNIT-1**: The **Multidisciplinary** nature of environmental studies Definition; Scope and importance, Need for public awareness.

**UNIT-2: 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 forests 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.

**UNIT-3: 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).

**UNIT-4: Biodiversity and its Conservation**

 Introduction-Definition: genetic, species and ecosystem diversity.

 Biogeographical classification of India.

 Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.

 Biodiversity at global, National and local levels.

 India as a mega-diversity nation.

 Hot-spots of biodiversity.

 Threats to biodiversity: habital loss, poaching of wildlife, man-wildlife conflicts.

 Endangered and endemic species of India.

 Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

**UNIT-5: Environmental Pollution:**

**Definition**

- Causes, effects and control measures of: -

a. Air pollution

b. Water pollution

c. Soil pollution

d. Marine pollution

e. Noise pollution

f. Thermal pollution

g. Nuclear hazards

- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.

- Role of an individual in prevention of pollution.

- Pollution case studies.

- Disaster management: floods, earthquake, cyclone and landslides.

**UNIT-6: Social Issues and the Environment**

- From Unsustainable to Sustainable development.

- Urban problems related to energy.

- Water conservation, rain water harvesting, watershed management.

- Resettlement and rehabilitation of people; its problems and concerns. Case studies.

- Environmental ethics: Issues and possible solutions.

- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.

- 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.

**UNIT-7: 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.

**- Drugs and their effects; Useful and harmful drugs; Use and abuse of drugs; Stimulant and depressant**

 **drugs. Concept of drug de-addiction. Legal position on drugs and laws related to drugs.**

- Case Studies.

**UNIT-8: Field Work (Practical).**

- 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.

**SIX MONTHS COMPULSORY CORE MODULE COURSE IN ENVIRONMENTAL STUDIES: FOR UNDERGRADUATES**

**Teaching Methodologies**

The Core Module Syllabus for Environmental Studies includes class room teaching and Field Work. The syllabus is divided into eight units. The first seven unit will cover lectures to enhance knowledge skills and attitude to environment. Unit eight is based on field activities which will provide students first hand knowledge on various local environmental aspects. Field experience is one of the most effective learning tools for environmental concerns. This moves out of the scope of the next book mode of teaching into the realm of role learning in the field, where the teacher merely acts as a catalyst to interpret what the student observes or discovers in his/her own environment. Field studies are as essential as class work and form an irreplaceable synergistic tool in the entire learning process.

Course material provided by UGC for classroom teaching and field activities be utilized.

The Universities/colleges can also draw upon expertise of outside resource persons for teaching purposes.

**Environmental Core Module shall be integrated into the teaching programmes of all undergraduate courses.**

**REFERENCES:**

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5. Cunningham, W.P.Cooper, T.H. Gorhani, E & Hepworth, M.T.2001, Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p.

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