



**Swami Ramanand Teerth  
Marathwada University, Nanded.**

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***Revised Curriculum of  
Six monthly Core module Course in  
Environmental Studies***

(For Final Year of First Degree Course of All Faculties)

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**W.e.f. : June, 2009.**

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## INTRODUCTION

The importance of Environmental Science and Environmental Studies can not be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, loss of forests, solid waste disposal, degradation of environment, issues like economic productivity and national security, global warming, the depletion of ozone layer and loss of biodiversity have made every one aware of environmental issues. The United Nations Conference of Environment and development held in *Rio De Janeiro* in 1992 and world summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our Environment. It is clear that no citizen of the Earth can afford to be ignorant of environmental issues. Environmental Management has captured the attention of Health Care Managers. Managing environmental hazards has become important.

Human beings have been interested in ecology since the beginning of civilization. Even our ancient scriptures have emphasized about practices and values of environmental conservation. It is now critical that mankind as a whole should have a clear understanding of environmental concerns and to follow sustainable development practice.

India is rich in biodiversity, which provides various resources for people. It is also basis for biotechnology.

Only about 1.7 million living organisms have been described and named globally. Still many more remain to be identified and described. Attempts are made to conserve them in their natural and in-situ situations, intellectual property rights have become important in a biodiversity rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over use of conventional energy resources and environmental pollution have been found to be responsible for destruction of large number of life forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic Programmes. Recognizing this, the Honorable Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a compulsory core module course in environmental studies should be prepared and compulsorily implemented in all the University / Colleges of India.

The expert committee appointed by the UGC has looked in to all the pertinent questions, issues and other relevant matters. This was followed by framing of the core module syllabus for environmental studies for under graduate courses of all branches of Higher Education. We are deeply conscious that there are bound to be gaps between the ideal and real. Genuine endeavor is required to minimize the gaps by intellectual and material inputs. The success of this course will depend on the initiative and drive of the teachers and the respective students.

**COMPULSORY SIX MONTHLY CORE MODULE COURSE IN  
ENVIRONMENTAL STUDIES**  
( For Under graduates )

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***Course Structure***

<b>Title of the Paper</b>	<b>No. of Theory Periods</b>	<b>No. of Periods for field work</b>	<b>Total Periods</b>	<b>Maximum Marks For Theory Paper</b>	<b>Maximum Marks For Field Work</b>	<b>Total Marks</b>
<b>Environmental Studies</b>	40	10	50	40	10	50

***Teaching Methodologies***

The six monthly core module courses of Environmental Studies include class room teaching and field work. The syllabus is divided in to five units covering 50 lectures. The first four units will cover 40 lectures, which are classroom based to enhance knowledge skills and attitude towards environment. Unit five is based on field activities, which will be covered in ten lectures and would provide students first hand knowledge on various local environmental aspects. Field experience is one of the most effective learning tools for environmental concerns. This takes the students out of the text book mode of real 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 from an irreplaceable synergistic tool in the entire learning process.

The six monthly core module course in environmental studies shall be integrated in to the teaching Programme of all under graduate courses. The course should be run in the first term of all the final year under graduate courses.

***Examinations***

The examination of the environmental studies will be conducted along with the annual examination. The 40 marks annual examination will be conducted by Swami Ramanand Teerth Marathwada University.

The Report of field work should be submitted to Teacher or Course Coordinator of respective college on or before 01<sup>st</sup> March. The report of field work must be assessed by the teacher at college and the internal marks list of Ten marks should be submitted through the Principal of the respective college to the Controller of Examinations, Swami Ramanand Teerth Marathwada University, Nanded on or before 20<sup>th</sup> March.

# Six Monthly Core Module Course in *Environmental Studies*

(For Undergraduate Courses of all Branches of Higher Education)

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## **Unit I : Introduction & Natural Resources :**

Environment : Definition, Scope, Importance, Need for public awareness.

**Natural Resources** : Renewable and Non Renewable resources, Natural resources and associated problems.

**a) Forest Resources** : Utility and natural renewal balance, Uses and over exploitation of forest resources, Deforestation case studies, Mining, Dams and their effects on forests.

**b) Water Resources** : Uses of water, Over utilization of surface and ground water, Floods, Draughts, Dams : Benefits and problems.

**C) Mineral Resources** : Environmental effects of extracting and using mineral resources.

**D) Agricultural Resources** : Changes caused by agriculture and overgrazing, Effects of modern agriculture, Fertilizer and pesticide problems, Water logging, Salinity.

**E) Land Resources** : Land as a resource, Effects on productivity, Man induced landslides, Soil erosion, Desertification

**F) Energy Resources** : Needs, Types of energy and quantities available, Growing energy needs, renewable and non renewable energy resources, Use of alternate energy sources.

## **Unit II : Ecosystems :**

Concepts of an ecosystems, Structure and function of an ecosystem, Producers, Consumers, and Decomposers, Energy flow in an ecosystem, Ecological succession, Food chain, Food webs, Ecological pyramids,

Introduction, Types, Characteristic features & Structure of following ecosystems (01) Forest ecosystem, (02) Grassland ecosystem, (03) Desert ecosystem (04) Aquatic ecosystem ( Ponds, Streams, Lakes, Rivers, Oceans, Estuaries ).

## **Unit III : Biodiversity and its conservation :**

Introduction, Definition, Biogeographical classification of India, Value of Biodiversity : Productive use, Social, Ethical, Aesthetic, and option values, India as a mega diversity nation, Endangered and endemic species of India, Conservation of biodiversity.

## **Unit IV : Environmental pollution and its mitigation :**

Definition of Pollution; Causes, effects and control measures of (A) Air pollution, (B) Water pollution, (C) Soil pollution, (D) Noise pollution

Solid waste management : causes, effects and control measures of urban and industrial wastes, nuclear hazards, Environmental hazards and their mitigation, Role of an individual in pollution and abatement.

## **Unit V : Field Work :**

01. Visit to local area to document environmental assets – River, Forest, Grass land, Hill, Mountain etc.
02. Visit to local polluted site : Urban, Industrial, Agricultural
03. Study of common plants, Insects, birds etc,
04. Study of simple ecosystems : Pond, River, Hill, Slopes etc.



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### Reference Books

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|-----|-----------------------------|---|---|
| 01. | Introduction to Environment | - | M. N. Sastri, Himalaya Publishing House, New Delhi.   |
| 02. | Environmental Studies       | - | H. Kaur, Pragati Prakashan, Meerut                    |
| 03. | Environmental Studies       | - | Erach Bharucha, University press Pvt. Ltd., Hyderabad |
| 04. | Environmental Studies       | - | S. V. S. Rana, Rastogi Publication, Meerut            |
| 05. | Environmental Studies       | - | C. P. Kaushik, New age international Ltd. New Delhi   |
| 06. | Environmental Studies       | - | Arumugam, Saras Publication Kanyakumari               |
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**Swami Ramanand Teerth Marathwada University, Nanded**  
**COMPULSORY SIX MONTHLY CORE MODULE COURSE IN**  
**ENVIRONMENTAL STUDIES**  
( For Under graduate courses of all branches )

**Question Paper Pattern**

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**Time : 2.30 hours**

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**40**

**Maximum marks : 40**

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Q. 01 :	Long Question ( fn?k'Økjh ç'u ) OR ( fdok ) a) Short Question ( y?kØkjh ç'u ) b) Short Question ( y?kØkjh ç'u )	10 marks (ngk xqk)  05 marks (i kp xqk) 05 marks (i kp xqk)
Q. 02 :	Long Question ( fn?k'Økjh ç'u ) OR ( fdok ) Short Question ( y?kØkjh ç'u ) Short Question ( y?kØkjh ç'u )	10 marks (ngk xqk)  05 marks (i kp xqk) 05 marks (i kp xqk)
Q. 03 :	Long Question ( fn?k'Økjh ç'u ) OR ( fdok ) Long Question ( fn?k'Økjh ç'u )	10 marks (ngk xqk)  10 marks (ngk xqk)
Q. 04 :	Attempt any Two from provided four questions [kkyhy pkj iØh n'u oj fvik fygk	10 marks (ngk xqk)

