Estd. 1962
"A++" Accredited by NAAC(2021) With CGPA 3.52

SHIVAJI UNIVERSITY, KOLHAPUR - 416004, MAHARASHTRA
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शिवाजी विद्यापीठ, कोल्हापूर - ४१६००४,महाराष्ट्र
दूरध्वनी - ईपीएबीएक्स - २६०९०००, अभ्यासमंडळे विभाग दुरध्वनी विभाग २३१—२६०९०९३/९४

SU/BOS/688 **Date:- 18 /09 /2023**

To,

The Principal,
All Affiliated Colleges/Institutes,
Shivaji University,
Kolhapur

Subject: Regarding syllabi of **Environmental Studies for all under graduate degree Programme Part – II** of all faculties.

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the University authorities have accepted and granted approval to the syllabi of **Environmental Studies for all under graduate degree programme Part – II** of all faculties.

The concerned syllabi shall be implemented from the academic year 2023-2024 onwards. All these syllabi are also made available on University website www.unishivaji.ac.in.

You are therefore requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,

Dy Registrar
(Dr. S. M. Kubal)

Copy to:

1	The Dean, Faculty of Science & Technology	7	Appointment Section
2	Director, Board of Examinations and Evaluation	8	P.G.Seminar Section
3	The Chairman, Respective Board of Studies	9	Computer Centre (I.T.)
4	B.Sc. Exam	10	Affiliation Section (U.G.)
5	Eligibility Section	11	Affiliation Section (P.G.)
6	O.E. I Section	12	P.G.Admission Section

SHIVAJI UNIVERSITY, KOLHAPUR

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With CGPA 3.52

Revised syllabus of

Environmental Studies
Part - II

As a Compulsory Paper for all Undergraduate Programme

As a compulsory paper for all Undergraduate Courses for Second year in accordance with National Education Policy - 2020

Year
2023-24

Shivaji University, Kolhapur

Syllabus of Environmental Studies
for 2023-24
as a Compulsory Paper for all Undergraduate Courses

Course Learning Objectives: The objectives of the course are to

1. Understand the scope and multidisciplinary nature of Environmental Studies.
2. Recognize the structure and function of Ecosystems with their importance.
3. Get acquainted with the problems associated with natural resources and their conservation.
4. Familiarise the environmental and social problems with global concern.

Course Outcomes:

Upon completion of the course, students will be able to:

CO1: Get acquainted with the scope and multidisciplinary nature of environmental science with the overall aim of sustainable development.
CO2: Understand the importance of ecosystems in the view of its conservation.
CO3: Know the values of natural resources with associated problems for sustainable lifestyles.
CO4: Familiarize the basics of Biodiversity and concerned issues in the context of Western Ghats.

CO5: Make aware of the pollution issues with its mitigation measures.
CO6: Understand the social issues accompanied by environmental issues in the light of role of Indian culture and movements in conservation of the environment.
CO7: Recognize the significance of policies and legislation in environmental protection.
CO8: Acquire problem solving attitude through actual experiential learning in the form of field work and projects

Shivaji University, Kolhapur
Syllabus of Environmental Studies
as a Compulsory Paper for all Undergraduate Courses
2023-24

Unit 1. Nature of Environmental Studies : (3 lectures)

Definition, scope and importance.
Multidisciplinary nature of environmental studies
Need for public awareness.
Concept of sustainability. Sustainable development and it's goals with Indian context.

Unit 2. Ecosystems : (9 lectures)

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, characteristics 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)
Degradation of the ecosystems and it's impacts.

Unit 3. Natural Resources and Associated Problems : (8 lectures)

a) Forest resources: Use and over-exploitation, deforestation, 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: Usage and exploitation. Environmental effects of extracting and using mineral resources.
d) Food resources: World food problem, changes caused by agriculture, effect of modern agriculture, fertilizer-pesticide problems.
e) Energy resources: Growing energy needs, renewable and non- renewable energy resources, use of alternate energy sources. Solar energy, Biomass energy, Nuclear energy,
f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Consumerism, ecological foot prints, carbon foot prints, carbon credits.

Role of individuals in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit 4. Biodiversity and its conservation: (8 lectures)

Introduction- Definition: genetic, species and ecosystem diversity.
Bio-geographical classification of India.
Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
India as a mega- diversity nation.
Western Ghat as a biodiversity region. Hot-spots 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. Convention on Biological Diversity.

Unit 5. Environmental Pollution : (8 lectures)

Definition: Causes, effects and control measures of: Air pollution,

Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards.

Global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust.

Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Solid waste management control rules, Role of an individual in prevention of pollution.

Unit 6. Social Issues and the Environment : (9 lectures)

Human population growth, impact on environment. Human Health and welfare.

Environmental ethics: Role of Indian religious traditions and culture in conservation of the environment.

Environmental movements- Chipko Movement, Appiko Movement, Silent Valley.

Resettlement and rehabilitation of people; its problems and concerns.

Water conservation, rain water harvesting, watershed management.water conservation by Dr.Rajendra Singh, Shri. Anna Hazare .

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

Wasteland reclamation, Environmental communication and public awareness, case studies.

Unit 7. Environmental Protection- Policies and practices: (5 lectures)

Environmental Protection Act.
Air (Prevention and Control of Pollution) Act.
Water (Prevention and control of Pollution) Act
Wildlife Protection Act
Forest Conservation Act
National and International conventions and agreements on environment.

Unit 8. Field Work : (10 lectures)

Visit to a local area to document environmental assets-
River/forest/grassland/hill/mountain.

or

Visit to a local polluted site – Urban/Rural/Industrial/Agricultural

or

Study of common plants, insects, birds.

or

Study of simple ecosystems - ponds, river, hill slopes, etc.
(Field work is equal to 10 lecture hours)

References :

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3) Brunner R.C.,1989, Hazardous Waste Incineration, McGraw Hill Inc., 480p

4) Clank R.S. Marine Pollution, Clanderson Press Oxford (TB)
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6) Environmental Encyclopedia, Jaico Publ. Hpise, Mumbai, 1196p
7) De A.K., Environmental Chemistry, Wiley Wastern Ltd.
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10) Gleick, H.,1993, Water in crisis, Pacific Institute for studies in Dev.,Environment & Security. Stockholm Env. Institute. Oxford Univ. Press 473p
11) Hawkins R.e., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
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14) Mickinney, M.L.& School. R.M.1196, Environmental Science Systems & Solutions, Web enhanced edition, 639p.
15) Mhaskar A.K., Mastter Hazardous, Techno-Science Publications (TB)
16) Miller T.G.Jr., Environmental Science. Wadsworth Publications Co. (TB)
17) Odum, E.P.1971, Fundamentals of Ecology, W.B.Saunders Co. USA, 574p.
18) Rao M.N.& Datta, A.K.1987, Waste Water Treatment, Oxford & IBH Publ. Co. Pvt. Ltd., 345p
19) Sharma B.K., 2001, Environmental Chemistry, Gokel Publ. Hkouse, Meerut
20) Survey of the Environment, The Hindu (M)
21) Townsend C., Harper, J. and Michael Begon, Essentials of Ecology, Blackwell Science (TB)
22) Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, vol. I anfd II, Environmental Media (R)
23) Trivedi R.K. and P.K. Gokel, Intriduction to air pollution, Tecgbi-Science Publications (TB)
24) Wagner K.D.,1998, Environmental management, W.B. Saunders Co.Philadelphia, USA 499p.
25) Paryavaran shastra – Gholap T.N.
26) Paryavaran Sahastra – Gharapure

M) Magazine (R) Reference (TB) Textbook

Shivaji University, Kolhapur.

Format skeleton of question paper
of undergraduate Environmental Studies

The examination to be conducted during second term of academic year. The total marks allotted

Notice :

1. All question to be set from theory syllabus.
2. All questions are compulsory.
3. Time : 3 Hrs.
4. Total marks : 70

Q. 1.	Objective type (10 objective type questions)	10 marks
Q. 2.	Short answer (Answer any three out of five. 5 marks each)	15 marks
Q. 3.	Short notes (Answer any three out of five. 5 marks each)	15 marks
Q.4.	Long answer question OR Long answer question	10 marks 10 marks
Q.5.	Long answer question OR Long answer question	10 marks 10 marks
Q.6.	Long answer question OR Long answer question	10 marks 10 marks