



SANSKRITHI SCHOOL OF ENGINEERING

Behind SSSS Hospital, Beedupalli knowledge park, Prasanthigram, Puttaparthi - 515134
Affiliated by JNTUA & Approved by All India Council for Technical Education (AICTE), www.sseptp.org

List of Courses related to Environment- part of Curriculum

S.No.	Subject Name	Subject code	Regulation	Year - Semester
1	Environmental Studies	15A01101	R15	I-II
2	Energy Resources & Technology	15A02805	R15	IV-II
3	Water Harvesting and Conservation	15A01507	R15	III-I
4	Water Resources Engineering – I	15A01605	R15	III-II
5	Disaster Management & Mitigation	15A01607	R15	III-II
6	Environmental Engineering	15A01703	R15	IV-I
7	Water Resources Engineering – II	15A01704	R15	IV-I
8	Ground Improvement Techniques	15A01706	R15	IV-I
9	Air Pollution and Quality Control	15A01707	R15	IV-I
10	Earth Quake Resistant Design of Structures	15A01709	R15	IV-I
11	Environmental Engineering Laboratory	15A01712	R15	IV-I
12	Environmental Impact Assessment and Management	15A01804	R15	IV-II
13	Environmental Science	19A99301	R19	II-I
14	Industrial waste and wastewater management	19A01604a	R19	III-II
15	Food Toxicology	19A27604a	R19	III-II
16	Food Plant Equipment Design	19A27604b	R19	III-II
17	Air pollution and control	19A01704a	R19	IV-I
18	Electric Vehicle Engineering	19A02704b	R19	IV-I
19	Disaster Management	19A01802a	R19	IV- II
20	Global Warming and climate changes	19A01802b	R19	IV- II
21	Energy conservation and management	19A03802b	R19	IV- II
22	Food Plants Utilities & Services	19A54802a	R19	IV- II
23	Nutraceuticals & Functional Foods Mathematical Modeling & Simulation Green Chemistry and Catalysis for Sustainable Environment	19A51802a	R19	IV- II
24	Environmental Engineering	19A01406	R19	II- II
25	Water Resources Engineering	19A01502	R19	III-I
26	Environmental Pollution and Control	19A01505c	R19	III-I
27	Environmental Engineering Lab	19A01508	R19	III-I
28	Environmental Air Pollution	19A01603c	R19	III- II
29	Water Resources Systems: Modeling Techniques and Analysis	19A01603e	R19	III- II
30	Industrial Waste & Wastewater Engineering	19A01703c1	R19	IV-I
31	Environmental Impact Assessment	19A01801c1	R19	IV- II
32	Environmental Economics	19A01801c2	R19	IV- II
33	Environmental Science	20A99201	R20	II- I
34	Environmental Engineering – I	20A01404T	R20	II- II
35	Environmental Engineering Lab	20A01404P	R20	II- II
36	Electric Vehicles	20A02505	R20	III- I
37	Environmental Economics	20A01605	R20	III- II
38	Health, Safety & Environmental Management	20A01705	R20	IV- I
39	Waste and Effluent Management	20A27705	R20	IV- I





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40	Green Chemistry and Catalysis for Sustainable Environment	20A51703	R20	IV-I
41	Environmental Impact Assessment	20A01604c	R20	III- II
42	Ground Improvement Techniques	20A01701c	R20	IV-I
43	Industrial Waste and Wastewater Management	20A01702c	R20	IV-I
44	Environmental Economics	20A01704	R20	III- II



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R 20 Regulations

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
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ANANTHAPURAMU – 515 002 (A.P) INDIA

Computer Science & Engineering

Course Code	ENVIRONMENTAL SCIENCE (Common to All Branches of Engineering)	L	T	P	C
20A99201		3	0	0	0
Pre-requisite	NIL	Semester		III	
Course Objectives: <ul style="list-style-type: none">To make the students to get awareness on environmentTo understand the importance of protecting natural resources, ecosystems for future generations and pollution causes due to the day to day activities of human lifeTo save earth from the inventions by the engineers.					
Course Outcomes (CO): <p>At the end of the course, the student will be able to</p> <ul style="list-style-type: none">Grasp multidisciplinary nature of environmental studies and various renewable and nonrenewable resources.Understand flow and bio-geo- chemical cycles and ecological pyramids.Understand various causes of pollution and solid waste management and related preventive measures.About the rainwater harvesting, watershed management, ozone layer depletion and waste land reclamation.Casus of population explosion, value education and welfare programmes.					
UNIT - I					8 Hrs
Multidisciplinary Nature Of Environmental Studies: – Definition, Scope and Importance – Need for Public Awareness.					
Natural Resources : Renewable and non-renewable resources – Natural resources and associated problems – Forest resources – Use and over – exploitation, deforestation, case studies – Timber extraction – Mining, dams and other effects on forest and tribal people – Water resources – Use and over utilization of surface and ground water – Floods, drought, conflicts over water, dams – benefits and problems – Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies – Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. – Energy resources:					
UNIT - II					12 Hrs
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: <ul style="list-style-type: none">a. Forest ecosystem.b. Grassland ecosystemc. Desert ecosystemd. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)					
Biodiversity And Its Conservation : Introduction 0 Definition: genetic, species and ecosystem diversity – Bio-geographical 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: 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.					
UNIT - III					8 Hrs



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Computer Science & Engineering

Environmental Pollution: Definition, Cause, 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 - IV

10 Hrs

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 - V

8 Hrs

Human Population And The Environment: Population growth, variation among nations. Population explosion – Family Welfare Programmes. – Environment and human health – Human Rights – Value Education – HIV/AIDS – Women and Child Welfare – Role of information Technology in Environment and human health – Case studies.

Field Work: 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, and birds – river, hill slopes, etc..

Textbooks:

1. Text book of Environmental Studies for Undergraduate Courses ErachBharucha for University Grants Commission, Universities Press.
2. Palaniswamy, "Environmental Studies", Pearson education
3. S.AzeemUnnisa, "Environmental Studies" Academic Publishing Company
4. K.Raghavan Nambiar, "Text book of Environmental Studies for Undergraduate Courses as per UGC model syllabus", Scitech Publications (India), Pvt. Ltd.

Reference Books:

1. Deeksha Dave and E.Sai Baba Reddy, "Textbook of Environmental Science", Cengage Publications.
2. M.Anji Reddy, "Text book of Environmental Sciences and Technology", BS Publication.
3. J.P.Sharma, Comprehensive Environmental studies, Laxmi publications.
4. J. Glynn Henry and Gary W. Heinke, "Environmental Sciences and Engineering", Prentice hall of India Private limited
5. G.R.Chatwal, "A Text Book of Environmental Studies" Himalaya Publishing House
6. Gilbert M. Masters and Wendell P. Ela, "Introduction to Environmental Engineering and Science, Prentice hall of India Private limited.



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