

ENVIRONMENTAL STUDIES

II Semester: AE CIVIL CSE ECE EEE IT ME								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
AHS009	Foundation	L	T	P	C	CIA	SEE	Total
		3	-	-	3	30	70	100
Contact Classes: 45		Tutorial Classes: Nil		Practical Classes: Nil			Total Classes: 45	
OBJECTIVES:								
The course should enable the students to:								
<ol style="list-style-type: none"> I. Analyze the interrelationship between living organism and environment. II. Understand the importance of environment by assessing its impact on the human world. III. Enrich the knowledge on themes of biodiversity, natural resources, pollution control and waste management IV. Understand the constitutional protection given for environment 								
COURSE LEARNING OUTCOMES (CLOs):								
<ol style="list-style-type: none"> 1. Understand and realize the importance of multi-disciplinary nature of the environment in day today life 2. Describe various types of ecosystems its components and inter-relationship between man and environment 3. Examine how pollutants move through various levels in an ecosystem in our daily life 4. Explain the pathways of relevant chemical elements through the components of the biosphere in real world applications 5. Understand the relevance and importance of the natural resources in the sustenance of life on earth and living standard 6. Develop an understanding of the natural resources problems and ethical issues facing humans and the environment. 7. Correlate the exploitation and utilization of conventional and non-conventional resources. 8. Demonstrate the level of chemical usage in agricultural development and its impact in our daily life. 9. Understand the concept of growing energy needs in the world in terms of consumption of energy. 10. Establish knowledge and existence of endemic, extinct, endangered and threatened species, types and values of biodiversity. 11. Describe our country as mega biodiversity nation in terms of hotspots. 12. Explain on threats and innovative methods for conservation of biodiversity. 13. Establish a foundation on different pollutants and pollutions in the environment. 14. Ability to use methods, and strategies to investigate and interpret the pollution problems. 15. Use innovative methods to control the level of water pollution in our day to day life. 16. Acquire Knowledge on global effects and how to interpret with global environmental problem in our daily life. 17. Acquire knowledge and skills about health and safety protocols when working with polluted environment in day to day life. 18. Describe the role of government and legal aspects in environmental protection. 								

<p>19. Knowledge of proper decontamination techniques for solid waste management.</p> <p>20. Understand the importance of EIA for developmental activities to have minimum negative impacts on people.</p> <p>21. Prepare entry level for future generations to meet sustainable development.</p>		
UNIT-I	ENVIRONMENT AND ECOSYSTEMS	Classes: 08
<p>Environment: Definition, scope and importance of environment, need for public awareness; Ecosystem: Definition, scope and importance of ecosystem, classification, structure and function of an ecosystem, food chains, food web and ecological pyramids, flow of energy; Biogeochemical cycles; Biomagnifications</p>		
UNIT-II	NATURAL RESOURCES	Classes: 08
<p>Natural resources: Classification of resources, living and nonliving resources; Water resources: Use and over utilization of surface and ground water, floods and droughts, dams, benefits and problems; Mineral resources: Use and exploitation; Land resources; Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy source, case studies.</p>		
UNIT-III	BIODIVERSITY AND BIOTIC RESOURCES	Classes: 10
<p>Biodiversity and biotic resources: Introduction, definition, genetic, species and ecosystem diversity; Value of biodiversity: Consumptive use, productive use, social, ethical, aesthetic and optional values; India as a mega diversity nation; Hot spots of biodiversity Threats to biodiversity: Habitat loss, poaching of wildlife, human-wildlife conflicts; Conservation of biodiversity: In situ and ex situ conservation; National biodiversity act.</p>		
UNIT-IV	ENVIRONMENTAL POLLUTION, POLLUTION CONTROL TECHNOLOGIES AND GLOBAL ENVIRONMENTAL PROBLEMS	Classes: 10
<p>Environmental pollution: Definition, causes and effects of air pollution, water pollution, soil pollution, noise pollution; Solid waste: Municipal solid waste management, composition and characteristics of e-waste and its management; Pollution control technologies: Waste water treatment methods, primary, secondary and tertiary; Concepts of bioremediation; Global environmental problems and global efforts: Climate change, ozone depletion, ozone depleting substances, deforestation and desertification; International conventions / protocols: Earth summit, Kyoto protocol and Montreal protocol.</p>		
UNIT-V	ENVIRONMENTAL LEGISLATIONS AND SUSTAINABLE DEVELOPMENT	Classes: 09
<p>Environmental legislations: Environmental protection act, air act1981, water act, forest act, wild life act, municipal solid waste management and handling rules, biomedical waste management and handling rules2016, hazardous waste management and handling rules, Environmental impact assessment(EIA); Towards sustainable future: Concept of sustainable development, population and its explosion, crazy consumerism, environmental education, urban sprawl, concept of green building.</p>		
Text Books:		
<ol style="list-style-type: none"> 1. Benny Joseph (2005)., Environmental Studies, New Delhi, Tata McGraw Hill Publishing co. Ltd 2. Erach Bharucha (2005)., Textbook of Environmental Studies for Undergraduate Courses, Hyderabad, Universities Press. 		

Reference Books:

1. Anji Reddy .M (2007), Textbook of Environmental Sciences and Technology, Hyderabad, BS Publications.
2. Anjaneyulu.(2004), Introduction to Environmental Sciences, BS Publications
3. Anubha Kaushik(2006).,Perspectives in Environmental Science, 3rd Edition, New Delhi, New age international.
4. Tyler Miller, Scott Spoolman, “Environmental Science”, Cengage Learning, 14th Edition, 2012

Web References:

1. www.elsevier.com
2. libguides.lib.msu.edu
3. www.fao.org
4. www.nrc.gov
5. www.istl.org
6. ww.ser.org
7. www.epd.gov
8. www.nptel.ac.in

E-Text Books:

1. www.ilocis.org
2. img.teebweb.org
3. ec.europa.eu
4. www.epa.ie
5. birdi.ctu.edu.vn