

ECOLOGY AND ENVIRONMENT

Course Code	20CE2601A	Year	III	Semester	II
Course Category	Open Elective-II	Branch	CE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Pre-requisites	Environmental Science
Continuous Internal Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	Integrate information related to structure and functions of ecological units.	L3
CO2	Analyze and communicate the concepts of environment.	L4
CO3	Analyze various environmental components and demonstrate using technology.	L4
CO4	Analyze and evaluate policies and frame works for welfare of environment & social sustainability.	L4
CO5	Apply system concepts for bio-monitoring environmental issues.	L3

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2						2					2		2
CO2	2					3	3							3
CO3	3						3	3						3
CO4	2						3							3
CO5	2					2	2					2		2
Avg.	2						3					2		3
	1- Low				2-Medium				3-High					

SYLLABUS		
Unit no.	Contents	Mapped CO
I	ECOLOGY: Introduction – Biosphere, scope, organization and significance. Ecosystem concept- structure & function, Factors affecting ecosystem. Evolution: Natural Selection and its ecological significance. Population parameters- growth regulation, relationships between organisms.	CO1 CO2
II	NATURAL RESOURCES & MANAGEMENT: Resource- Definition, category, concept and scarcity of resource. Forests & wild life- Global productivity & human activities (Exploitation). Land Resource- use pattern in India, soil & soil Conservation. Water resource- potentials and use with special reference to India, Concept of Integrated Water Resources Management (IWRM). Remote Sensing and GIS: Applications in conserving resources.	CO1 CO2
III	ENVIRONMENTAL GEOSCIENCES & COMPUTER APPLICATIONS: Structure and composition of atmosphere, hydrosphere, lithosphere and biosphere. Scale of meteorology, pressure, temperature, atmospheric stability. Graphical representation of Data, creating Database tables.	CO3
IV	ENVIRONMENTAL POLICY, EDUCATION AND ETHICS: Important National policies: National environmental policy, 2006 & National agricultural policy etc. Legislation: Environment Protection Act, 1986. Environmental education: Goals and objectives of environmental education. Environment awareness and action: Role of NGOs in environmental awareness. Environmental movements in India- silent valley movement, Chipko movement, Narmada Bachao Andolan, Environmental movements in the West- Green Peace.	CO4
V	ENVIRONMENTAL MONITORING AND MANAGEMENT: Environmental impact analysis and EMP; Analytical approaches and instrumentation in environmental monitoring; Bio-monitoring of air pollution - plants as bio monitors; Bio monitoring of running water pollution. (Software's) Organic Farming and its ecological significance.	CO4 CO5

Learning Resources	
Text Books	
<ol style="list-style-type: none"> 1. Singh, J.S; Singh, S.P. and Gupta S.R. Ecology, Environmental Science and Conservation. S. Chand & Company Pvt. Ltd. New Delhi. (2014) 2. Sharma, P.D. Ecology and Environment (11th edition) Rastogi Publication, Meerut. (2011) 3. Bharucha, E. Text Book of Environmental Studies (2nd edition.). Universities Press, Hyderabad. (2013) 	
Reference Books	
<ol style="list-style-type: none"> 1. Nobel, B.J. and Wright, R.T. (1995) Environmental Science. Prentice Hall. 2. Agarwal, S.K. (1991) Pollution Ecology. Himanshu Publication, Udaipur. 3. S.V.S.Rana, Essentials of Ecology and Environmental Science, Prentice Hall India, New Delhi, 2011. 	
E-Resources & other digital material	
<ol style="list-style-type: none"> 1. http://nptel.ac.in 	