ECOLOGY AND ENVIRONMENT

(Open Elective - II)

Course Code	20CE2601A	**Year**	III	**Semester**	II
Course Category	OE - 2	**Branch**	Offered by CE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	-
Continuous Internal Evaluation:	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		**Blooms Taxonomy Level**
Upon Successful completion of 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 & Strength of correlations(3:Substantial,2:Moderate,1:Slight)

	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

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 BachaoAndolan, 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

1) Singh, J.S; Singh, S.P. and Gupta S.R. (2014) Ecology, Environmental Science and Conservation. S. Chand & Company Pvt. Ltd. New Delhi.
2) Sharma, P.D. (2011) Ecology and Environment (11th edition) Rastogi Publication, Meerut.
3) Bharucha, E. (2013) Text Book of Environmental Studies (2nd edition.). Universities Press, Hyderabad.

References

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

http://nptel.ac.in