

INSTITUTE	FACULTY OF PHARMACY
PROGRAM	BACHELOR OF PHARMACY
SEMESTER	2
COURSE TITLE	ENVIRONMENTAL SCIENCES
COURSE CODE	13EN0201
COURSE CREDITS	3

Objective:

- 1 Environmental Sciences is the scientific study of the environmental system and the status of its inherent or induced changes on organisms. It includes not only the study of physical and biological characters of the environment but also the social and cultural factors and the impact of man on environment.
- 2 Create the awareness about environmental problems among learners
- 3 Impart basic knowledge about the environment and its allied problems.Acquire skills to help the concerned individuals in identifying and solving environmental problems
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Course Outcomes: After completion of this course, student will be able to:

- 1 Create the awareness about environmental problems among learners
- 2 Impart basic knowledge about the environment and its allied problems.
- 3 Develop an attitude of concern for the environment
- 4 Motivate learner to participate in environment protection and environment improvement
- 5 Acquire skills to help the concerned individuals in identifying and solving environmental problems.
- 6 Strive to attain harmony with Nature

Pre-requisite of course:Environmental Sciences is the scientific study of the environmental system and the status of its inherent or induced changes on organisms. It includes not only the study of physical and biological characters of the environment but also the social and cultural factors and the impact of man on environment.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	75	15	10	0	0
Contents : Unit	Topics						Contact Hours
1	The Multidisciplinary nature of environmental studies Natural Resources, Renewable and non-renewable resources, Natural resources and associated problems, Forest resources; b) Water resources; c) Mineral resources; d) Food resources; e) Energy resources; f) Land resources, Role of an individual in conservation of natural resources						10
2	Ecosystems Concept of an ecosystem, Structure and function of an ecosystem., Introduction, types, characteristic features, structure and function of the ecosystems: Forest ecosystem; Grassland ecosystem; Desert ecosystem; Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries						10
3	Environmental Pollution Environmental pollution, Air pollution, Water pollution, Soil pollution						10
Total Hours							30

Textbook :

- 1 Environmental Encyclopaedia, Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T., Jaico Publ. House, Mumbai,, 2001
- 2 Environmental Studies, B.R.Shah, Snehal Popli, Mahajan Publication, 2013
- 3 Environmental Science- towards sustainable future, Richard T.Wright,DorothyF. Broose, PHI Learning, New Delhi, 2010

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
20.00	30.00	25.00	15.00	10.00	0.00

Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and the need of students. The teacher in addition to the conventional teaching method by the blackboard may also use any tools such as demonstration, role play, quiz, brainstorming, MOOCs etc.
- 2 The internal evaluation will be done based on continuous evaluation of students in the laboratory and classroom.
- 3 Students will use supplementary resources such as online videos, NPTEL videos, MOOCs/ e-courses, virtual laboratories.

Supplementary Resources:

- 1 <https://www.footprintnetwork.org/our-work/climate-change/>
- 2 <https://www.gaiam.com/blogs/discover/how-does-your-carbon-footprint-impact-climate-change>
- 3 <http://www.iimmmbai.org/index.php/knowledge-center/article/carbon-footprint-a-cause-of-global-warming>
- 4 <http://www.fao.org/3/a-bb144e.pdf>