



Subject: Environmental Science – MSCIT12302

Type of course: Value Added Courses (VAC)

Prerequisite: Basic knowledge of environment and ecology.

Rationale: To inculcate the environmental values translating into pro-conservation actions. Honorable Supreme Court of India has made it 'mandatory' to introduce a basic course on environment at the undergraduate level.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks					Total Marks		
CI	T	P		Theory Marks		Practical Marks		CA			
				ESE	MSE	V	P				
2	0	0	2	60	30	10	00	50	150		

Legends: CI-ClassRoom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Course Content:

Unit No.	Course content	Hrs	% Weightage
1	Environment and Ecosystem: Environment and Environmental studies: Definition, concept, components and importance. Ecosystem and Ecology: Structure and Function of ecosystem, Food chain, food web and ecological pyramids.	8	25



2	Solid waste management: Introduction and definition, Classification of solid waste, sources of solid waste management, characteristic of solid waste management Collection methods, separation of material from waste and transport of solid waste. Disposal and recycling of solid waste.	8	25
3	Introduction of Biodiversity: Definition and concept, types of biodiversity , India as a mega biodiversity region .Values , threats and conservation of biodiversity, Biodiversity Hotspots.	8	25
4	Global warming and climate change Courses and Effect of Climate change Global warming: Greenhouse effect, Greenhouse gases, effect and control of global warming Ozone depletion: Formation and destruction of Ozone layer, ozone hole, effect of ozone depletion. Acid rain: Causes, effects and control.	8	25

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	Case Study Case study on India's environmental issues given by faculty. Analysis and outcome will be submitted by students on GMIU web portal.	10
2	Took a photo Submit Three photos on GMIU web portal with appropriate quotes of environment pollution.	10
3	To protect the Earth Student should participate in social activity related to the environment protection and submit selfie/photographs on GMIU web portal.	10
4	Poster Presentation Make a report showing the impact of industrial revolution on India's Biodiversity and upload it on GMIU web portal.	10
5	Quiz: Faculty will conduct the MCQs test on GMIU web portal. (30MCQs)	10
Total		50

Suggested Specification table with Marks (Theory):60



Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	50%	30%	20%	0	0	0

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course the students should be able to:

CO1	Understand of key environmental concepts and ecosystem.
CO2	Learn about solid waste and its management.
CO3	Know about the importance of biodiversity
CO4	Identify the impact of climate change and environmental degradation

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:



- [1] Environmental studies by Benny Joseph, Tata MCgraw-Hill-2005
- [2] Environmental studies by Dr. D.L. Manjunath, Pearson Education-2006
- [3] Environmental studies by R. Rajagopalan, Oxford Publication-2005
- [4] Principles of Environmental Science by Cunningham. W.P. & Cunningham M.A., TataMcGraw Hill Publishing Co. Ltd., New Delhi.
- [5] Textbook of Environment & Ecology by Deeksha Dave and S.S. Katewa,Cengage Learning India Pvt. Ltd., Patparganj, Delhi, 2009

