Course Syllabus
Gyanmanjari Diploma Engineering College
Semester-2 (Diploma)

Subject: Environment and Sustainability – DETXX10109

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

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

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Prepare a chart** Faculty will assign the topics based on Food chain and Food web and students will prepare chart as per the criteria given by subject faculty. Prepared chart must be uploaded on GMIU web portal by student.	10
2	**Capture harmful events for the environment** Students have to capture photograph of any three events that are harmful to the environment and upload photographs on GMIU Web portal.	10
3	**Sympathy for Environment** Student has to do some work that preserves the environment, such work has to be photographed and upload it on GMIU Web portal.	10

4	**Poster Presentation** Based on theme assigned by faculty and students will prepare Poster and upload it on GMIU Web portal.	10
5	**Quiz:** Faculty will conduct the one MCQs test on GMIU web portal (30 MCQs).	10
Total		50

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	**Pollution** **Definition, causes, effects and control measures of:** a. Air pollution b. Water pollution c. Noise pollution d. E-West	8	25
3	**Renewable energy** Energy Resources: Renewable and Non-Renewable energy sources, Renewable energy: Solar energy, Wind energy, Tidal energy, **Global warming and climate change:** Ozone depletion and impact, Acid rain: Causes , effects and control measures, the greenhouse effect	8	25
4	**Biodiversity and its conservation:** Definition, concept, levels and values of biodiversity. Biodiversity of India, India as a mega diversity nation, Hotspots of biodiversity. Threats to Biodiversity (Habitat loss, poaching of wildlife and man wildlife conflict) Conservation of Biodiversity, Ecotourism.	8	25

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	35%	40%	25%	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 the environmental and ecosystem concept.
CO2	Identify the effect of pollution on the earth and its control.
CO3	Conceptualize the impact of a climate change and importance of renewable energy .
CO4	Comprehends the importance of biodiversity for life.

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 Curnningham. 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