

GANESH COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Subject Code : GE2021
 Subject Name : Environmental Science & Engineering
 Faculty Name : Mr. MURALI.S

Degree/ Branch : B.E/ Civil
 Year/Sem : II/III
 No. of Hrs given in syllabus
 Lecture : 45
 Tutorial : Nil
 Practical : Nil
 Grand Total : 45

Objective of the course: To enable students to understand about constitutes the environment, how to conserve these resources, how to maintain ecological balance and preserve bio-diversity

Sl. No.	Topics	No. of hours	Reference
UNIT I - ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY 14			
<u>Objective:</u> To understand the Concept of an ecosystem, its types and concepts of Bio-diversity			
1	Definition, Scope and importance of environment , Need for public awareness	1	R5
2	Concept of an ecosystem, Structure and function of an ecosystem	1	R5
3	Energy flow in the ecosystem, Ecological succession	1	R5
4	Forest ecosystem	1	R5
5	Grassland ecosystem	1	R5
6	Desert ecosystem	1	R5
7	Aquatic ecosystems	1	R5
8	Introduction to biodiversity	1	R5
9	Biogeographical Classification of India, Value of biodiversity	1	R5
10	Biodiversity at global, national and local levels,	1	R5
11	India as a mega-diversity nation,	1	R5
12	Hot-spots of biodiversity,	1	R5
13	Threats to biodiversity	1	R5
14	Conservation of biodiversity	1	R5
UNIT II - ENVIRONMENTAL POLLUTION 8			
<u>Objective:</u> To understand about the various types pollution and its impacts to the human society			
15	Pollution- Air, Water,	1	R5
16	Soil	1	R5
17	Pollution- Marine, Noise,	1	R5
18	Thermal, Nuclear hazards	1	R5
19	Solid waste management	1	R5
20	Role of an individual in prevention of pollution& case studies	1	R5
21	Disaster Management: floods, earthquake,.	1	R5
22	Cyclone & landslides	1	R5
UNIT III - NATURAL RESOURCES 10			
<u>Objective:</u> To understand about the various types of natural resources and the role to protect the natural resources.			
23	Forest resources,	1	R5
24	Water resources	1	R5
25	Mineral resources,	1	R5
26	Food resources	1	R5
27	Energy resources,	1	R5

28	Land resources	1	R5
26	Role of an individual in conservation of natural resources,	1	R5
30	Equitable use of resources for sustainable lifestyles.	1	R5
31	Field study of local area to document environmental assets – river / forest / grassland	1	R5
32	Field study of hill / mountain	1	R5
UNIT IV - SOCIAL ISSUES AND THE ENVIRONMENT		7	
<u>Objective:</u> To understand about the different types social issues of society and also to get an idea about the Environmental protection acts.			
33	From unsustainable to sustainable development, water conservation, rain water harvesting,	1	R5
34	Watershed management, Resettlement and rehabilitation of people	1	R5
35	Environmental ethics, climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust	1	R5
36	Wasteland reclamation – consumerism and waste products	1	R5
37	Environment protection act, Air (Prevention and Control of Pollution) act – Water (Prevention and control of Pollution) act	1	R5
38	Wildlife protection act , Forest conservation act , enforcement machinery involved in environmental legislation,	1	R5
39	Central and state pollution control boards, Public awareness	1	R5
UNIT V - HUMAN POPULATION AND THE ENVIRONMENT		6	
<u>Objective:</u> To understand about the growth of human population and society family programme			
40	Population growth,	1	R5
41	Population explosion	1	R5
42	Family welfare Programme – environment and human health	1	R5
43	Value education	1	R5
44	Role of information technology in environment and human health	1	R5
45	Case studies	1	R5
TOTAL		45	

TEXT BOOKS

1. Gilbert M. Masters, "Introduction to Environmental Engineering and Science", 2nd^{Edition}, Pearson Education, 2004.
2. Benny Joseph, "Environmental Science and Engineering", Tata McGraw-Hill, New Delhi, 2006.

REFERENCE BOOKS

1. R.K. Trivedi, "Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards", Vol. I and II, Enviro Media.
2. Cunningham, W.P. Cooper, T.H. Gorhani, "Environmental Encyclopedia", Jaico Publ.,House, Mumbai, 2001.
3. Dharmendra S. Sengar, "Environmental law", Prentice hall of India PVT LTD, New Delhi, 2007.
4. Rajagopalan, R, "Environmental Studies-From Crisis to Cure", Oxford University Press (2005)
5. A. Ravikrishnan, "Environmental Science and Engineering", Sri Krishna Publications, 2008
6. Kaushik, Anubha, "Environmental Science and Engineering", New age publications, 2008.