

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING AND TECHNOLOGY (DIPLOMA PROGRAMMES)									
Programme	Diploma Engineering				Branch/Spec.	All Branch			
Semester	I / II				Version	1.0.0.0			
Effective from Academic Year			2018-19		Effective for the batch Admitted in			June 2018	
Subject code	1ES101		Subject Name		Environmental Studies and Disaster Management				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture (DT)		Practical (Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	2	0	0	0	2	Theory	40	60	100
Hours	2	0	0	0	2	Practical	0	0	0
Pre-requisites:									

LEARNING OUTCOME:

We study about environment engineering is very essential for engineers as it guide for use of water, air and other resources must be available as required for human kind and polluted component must be disposed off in nature by giving proper treatment.

We also attention solid waste, Noise, Air pollution, land pollution also wants etc. This course focuses on students' acquisition of knowledge, skills & practices in environmental engineering and pollution control .Knowledge about Environment Impact Assessment,

The knowledge and application of such aspects is essential in developing a good technician who should be conversant with environmental problems and their solutions.

1. Appreciate components of Environment. and Elaborate Ecology and Ecosystem
2. Explain Green House effect
3. Describe Acid Rain, and Ozone layer depletion
4. Pollutants – sampling, Physical characteristics, chemical characteristics ,biological characteristics
5. Explain control measures to prevent land pollution and quality of environmental impact assessment
6. Assess the problems of various kinds of pollution in the environment and Prepare proper EIA report for impact of pollution
7. Explain the principles of seismic, engineering in design of structure.
8. State the appropriate actions to be taken during disasters.

COURSE CONTENT:								HRS
UNIT I	Ecology and Environment							06
	<ul style="list-style-type: none"> • Importance of environment and scope • Engineering and environment issues • The natural system, Biotic and a-Biotic components and processes of natural system. • Eco system, food chain and webs and other biological Systems, • Causes of environmental pollution • Pollution due to solid waste • water pollution, air pollution, the Noise as pollution • Pollution of land due to industrial and chemical waste 							
UNIT II	Wind Power							06
	<ul style="list-style-type: none"> • Growth of wind power in India • Types of wind turbines – Vertical axis wind turbines (VAWT) and horizontal axis wind turbines (HAWT) 							

	<ul style="list-style-type: none"> Types of HAWTs – drag and lift types 	
	<ul style="list-style-type: none"> Working of large wind turbines 	
	<ul style="list-style-type: none"> Aerodynamic control of large and small wind turbines 	
	<ul style="list-style-type: none"> Types of electrical generators used in small and large wind turbines 	
UNIT III	Solar Power	06
	<ul style="list-style-type: none"> Features of solar thermal and PV systems 	
	<ul style="list-style-type: none"> Types of solar cookers and solar water heaters 	
	<ul style="list-style-type: none"> Solar PV systems and its components and their working 	
	<ul style="list-style-type: none"> Types of solar PV cells 	
	<ul style="list-style-type: none"> Solar PV and solar water heaters, rating and costing 	
UNIT IV	Biomass Energy	06
	<ul style="list-style-type: none"> Types of Biomass Energy Sources 	
	<ul style="list-style-type: none"> Energy content in biomass of different types 	
	<ul style="list-style-type: none"> Types of Biomass conversion processes 	
	<ul style="list-style-type: none"> Biogas production 	
UNIT V	Seismic Engineering and Disaster Management	06
	<ul style="list-style-type: none"> Introduction of seismic engineering and its application civil engineering designs 	
	<ul style="list-style-type: none"> Features of disasters such as Floods, Earthquakes, Fires, Epidemics, Gas/radioactive leaks etc. 	
	<ul style="list-style-type: none"> Management and mitigation of above disasters 	

Home Assignment : Based on above syllabus

REFERENCE BOOKS:		
Sr. No.	Title of Books	Author
1	Renewable Energy Technologies	Solanki, Chetan Singh
2	Ecology and Control of the Natural Environment	Izrael, Y.A.
3	Environment Engineering and Disaster Management	Sharma, Sanjay K.
4	Environmental Noise Pollution and Its Control	Chhatwal, G.R.; Katyal, T. Katyal,
5	Wind Power Plants and Project Development	Earnest, Joshua & Wizelius, Tore
6	Renewable Energy Sources and Emerging Technologies	Kothari, D.P. Singal, K.C., Ranjan, Rakesh
7	Environmental Studies	Anandita Basak
8	Environmental Science and Engineering	Alka Debi
9	Coping With Natural Hazards, Indian Context	K. S. Valadia
10	Engineering and Environment	Edward S. Rubin