DEPARTMENT OF ENERGY AND ENVIRONMENT

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Name of the programme and specialization	M.Tech. – DEE		
Course Title	Environmental Engineering And Pollution Control		
Course Code	EN603	No. of Credits	3
Course Code of Pre-requisite subject(s)			
Session	July 2019	Section (if, applicable)	-
Name of Faculty	Dr. G. Swaminathan	Department	Civil Engineering
Email	gs@nitt.edu	Telephone No.	04312503159
Name of Course Coordinator(s) (if, applicable)			
E-mail		Telephone No.	
Course Type	☐ Core course	☑ Elective course	

Syllabus (approved in BoS)

Environmental Pollution- units of measurements, material balance and energy fundamentals, classification of pollution Air Pollution Control Methods & Equipment- sources and effects of air pollution –Sampling measurement and analysis of air pollutants- Control Solid Waste Management-Sources & Classification –Solid Waste Disposal Options - Toxic Waste Management Water Pollution - sources of water pollutants– Classification and effects of Water Pollutants – Water pollution Laws and Standard Environment For Comfort Living & Working - Comfort & Climate –Temperature, humidity and ventilation Control– AC load, Natural & Artificial Lighting, Noise Sources, control.

COURSE OBJECTIVES

1. To make the students conversant with various components of environment and pollutions in environment
2. To understand the concepts of characteristics parameters in water
3. To expose the students to understand concepts about impacts of pollution in environment
4. To provide adequate knowledge about the control processes and itssignificance
5. To provide adequate knowledge about the control processes in solid waste management and other pollution related issues

COURSE OUTCOMES (CO)

Course Outcomes	
CO_1	Students will gain knowledge in characteritics of waster and waste water.
CO_2	Students will be imparted knowledge about control strategies in water and wastewater treatment systems..
CO_3	Students will understand the impacts of various pollution in environment
CO_4	The students will know about dynamic nature of atmosphere and its effects on air pollution
CO_5	The students will learn about general environment hygiene and control strategies

Aligned Programme Outcomes (PO)

	1	2	3	4	5	6	7	8	9	10	11	12
CO_1	✓	✓	✓	✓	✓		✓	✓			✓	✓
CO_2	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓
CO_3	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
CO_4	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO_5	✓	✓		✓	✓		✓	✓			✓	✓

1. Application on Mathematical knowledge	7. Societal focus
2. Engineering principles applications.	8. Vision and Long term planning
3. Project Formulation	9. Material Handling.
4. Quality Assurance and Quality control.	10. Resource Management
5. Sustainability	11. environmental Ethics
6. Application on design principles in problem solving.	12. environmental hygiene

COURSE PLAN – PART II

COURSE OVERVIEW

The Students will be imparted awareness about the environment, availability of fresh water in the planet, dwindling of these natural resources, water quality, treatment ,wastewater characteristics, treatment, impact on environment due to waste discharge, air pollution and its impacts, solid waste management and control strategies to minimize pollution in the environment..

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	1/3	General concepts about environment, classification, Effects of pollution in environment, Global scenario	Lecture mode and Tutorials
2	2/3	Water resources, Physical , chemical Characteristics	Lecture mode and Tutorials
3	3/3	Biological Characteristics of wwater. MPN and MFT	Lecture mode and Tutorials

S.No.	Week/Contact Hours	Topic	Mode of Delivery
4	4/3	Settling theory, Stoke's law, Newton's law. Discrete and flocculent settling, Block diagram of Treatment plants.	Lecture Mode
5	5/3	BOD,COD, TOC, Relative stability, Thomas slope method, Method of least squares.	Lecture mode and Tutorials
6	6/3	Primary and secondary treatment, Biokinetics and its application, Chlorination.-Cycle test I	Test
7	7/3	Wastewater disposal-Streeter Phelps Equation-Quality control Strategies in river quality maintenance	Lecture mode
8	8/3	Effects of waste discharge on lands-Control strategies	Lecture Mode and Tutorials
9	9/3	Air pollution-Global warming-green house gases. Effects of air pollution on life forms, vegetation and properties	Lecture Mode and Field demonstrations.
10	10/3	Ambient and stack sampling-Atmospheric stability-	Lecture mode and Tutorials
11	11/3	Mixing height-gaussian plume model-Air pollution control equipment. Cycle test II	Test
12	12/3	Solid waste management	Lecture mode and Tutorials
13	13/3	Industrial waste management	Lecture mode
14	14/3	Final End semester Examination	Examination

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assignments/Tutorials/ Quizs (Preferably in the middle of the semester, with Weightage of 20% of total marks)	Before Cycle Test I And II	Then And There Evaluation	20
2	Mid Semester Cycle Tests I And II	Week 6 and Week 11	Sixty Minutes	50(Two Cycle Tests of 25 marks ,each)
CPA	Compensation Assessment*	One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.		
4	Final Assessment *	Week 14	3 h	30

The passing minimum shall be as per the regulations : 35% or class average/2 whichever is greater

COURSE EXIT SURVEY

Online Feedback in Institute MIS . The students should fill in the required details honestly, so as to improve the teaching learning process

COURSE POLICY

MODE OF CORRESPONDENCE

Mode Of Correspondence

The Faculty handling the course can be approached through Institute Intercom 3159 or +914312503159.

The Students are discouraged from contacting the faculty on his personal mobile No. and Social media like Whatsapp.

During Examination, Students are expected to be vigil and mange the time effectively. The answer scripts of Cycle Tests, End Semester Examination should be uploaded the same platform, in which the cycle test(s) or Examination are conducted.

Students should not adhere to unfair means of copying and if found in resorting to unfair means, stern action will be initiated conforming to Institute rules and regulations in Vogue.

The official E Mail of the Teacher is gs@nitt.edu

Compensation assessment will be given to the students, who miss the tests and such test will be given only for genuine cases.

For Online Tests/Examination, it is the responsibility of the Students to maintain a good internet connectivity. Decision on Force Mejure situation will be considered based on the material evidence submitted to the Teacher.

The Grievance redressing authority is the Head of the Department of Energy amd Environment

COMPENSATION ASSESSMENT POLICY

If any student misses the final assessment for genuine reason compensation assessment will be done as per the institute policy in vogue.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- **At least 75% attendance in each course is mandatory.**
- **A maximum of 10% shall be allowed under On Duty (OD) category.**
- Students with **less than 65% of attendance** shall be prevented from writing the final assessment and **shall be awarded 'V' grade.**

ACADEMIC DISHONESTY & PLAGIARISM

- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

The above policy against academic dishonesty shall be applicable for all the programmes.

FOR APPROVAL

Dr.G.Swaminathan		**Dr. M. Premalatha**
Course Faculty	**CC-Chairperson**	**HOD**
	(M. Malheswaran)	