NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE OUTLINE TEMPLATE			
Course Title	SOLAR AND ENVIRONMENTAL ENGINEERING LABORATORY		
Course Code	EN 607	**No. of Credits**	1
Department	DEE	**Faculty**	Dr.C.Naveen/Mr.Ramesh R/Mr.G.Suriyanarayanan
Pre-requisites Course Code			
Course Coordinator(s) (if, applicable)			
Other Course Teacher(s)/Tutor(s) E-mail		**Telephone No.**	
Course Type	☐ **Core course**	☐ **Elective course**	

COURSE OVERVIEW

This lab course aims to provide students with hands on training in handling the instruments related to solar systems and environmental engineering.

COURSE OBJECTIVES

The objectives of the course are

(i) To create experimental facilities for the theoretical concepts taught in class.
(ii) To familiarize students to analyze the data collected from expermintal setups thereby getting practical exposure and developing problem solving skills.
(iii) To enable the students to draw conclusion from the analysis of the data and validate it.

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
1. To analyze the quality of water and other parameters for given water sample. 2. Ability to understand control technology for particulate and gaseous pollutants. 3. Determination of characteristics of solid waste/bio-mass materials.	PO's 1,2,4,6,8,11

4. To understand the basic characteristic and operation of PV system 5. To analyze the performance of different solar thermal systems.	

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Topic	Mode of Delivery
1	Determination of chemical oxygen demand of waste water	Experiment
2	Comparison of luminous efficacy of different light sources using a lux meter	
3	Estimation of dissolved oxygen in given water sample using dissolved oxygen meter	
4	Analysis of noise levels using noise dose meter	
5	Determination of respirable dust in air sample at Trichy	
6	Determination of biochemical oxygen demand in the given water sample	
7	Performance test on simple cylinder four stroke variable compression ratio IC engine	
8	Demonstrate usage of data logger for solar data analysis.	
9	Perform experiment using solar flat plate collectors connected in series and parallel for performance evaluation.	
10	Perform experiment using solar flat plate collectors connected in series and parallel for performance evaluation.	
11	Conduct experiments using solar still, solar cooker and dryer to determine their efficiencies.	
12	Conduct experiments using PV panel to determine V-I characteristics for various shading and slope angles.	
13	Perform experiment using sunshade recorder to determine the maximum sunshine hours.	

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	**Observation and record submission on time**	-	**Within 3 days**	25
2	**New design – Group activity**	8	-	25
3	**Innovative poster**	8	-	10
4	**End semester**			40

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

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COURSE EXIT SURVEY
Feedback through google docs at regular intervals(4^{TH}, 8^{TH} and 12^{TH}weeks)
COURSE POLICY
Use of mobile phones is strictly prohibited inside the lab. All students must adhere to the instructions of the concerned lab (including dress code). Late coming for classes leads to "ABSENT" in attendance. 75% attendance is mandatory for appearing in end semester exam. Prior permission is required from HoD to avail ON-DUTY. All other disciplinary actions as per NITT rules& regulations.
ADDITIONAL COURSE INFORMATION
Faculty can be contacted at their staff rooms in DEE premises or through email address naveen@nitt.edu.
FOR SENATE'S CONSIDERATION
Course Faculty Ramesh.R **CC-Chairperson** _____ **HOD** _____