DEPARTMENT OF MECHANICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN			
Course Title	**BASICS OF MECHANICAL ENGINEERING**		
Course Code	MEIR11	No. of Credits	**02**
Department	Electronics & Communication Engineering (Batch-A)	Faculty	YR KISHORE
Pre-requisites Course Code	NIL		
Course Coordinator(s) (if, applicable)	NOT APPLICALBE		
Course Teacher(s) E-mail	kishore@nitt.edu	Telephone No.	+91 9963298129
Course Type	General Institute Requirements		

COURSE OVERVIEW

Basic Mechanical Engineering covers the creation, design, and analysis of many types of systems, technologies, and materials. This course will introduce students to the fundamentals of Mechanical Engineering, It is evident from the diverse needs of mankind shows the importance of interdisciplinary knowledge, furthermore with that knowledge engineers develop new technologies. The student will be familiarised with laws of thermodynamics, IC engines, Automobiles, Refrigeration and Air conditioning, Turbines, Machine Elements, Engineering Materials and various manufacturing processes.

COURSE OBJECTIVES

1. To understand the various concepts in laws of thermodynamics and its application.
2. To impart knowledge on the basic concepts of Internal and external combustion engines, automobiles, steam and gas turbines, turbo machines and Refrigeration and Air-conditioning.
3. To provide knowledge on the various manufacturing process.
4. To impart knowledge of engineering materials, its properties and applications.

COURSE OUTCOMES (CO)

Course Outcomes	***Aligned Programme Outcomes (PO)***
Upon the completion of the course, the students will be able to **1.** Apply thermodynamic concepts related to their field of application. **2.** Understand the working principles of internal and external combustion engines, automobiles, steam and gas turbines, turbo machines and Refrigeration and Air-Conditioning. **3.** To select the suitable material based on its properties for the specific applications. **4.** To identify the suitable machining and joining process for specific applications.	

Cos/POs		Course Outcomes			
Programme Outcomes (POs)		CO1	CO2	CO3	CO4
	PO1	M	L	M	M
	PO2	L	L	M	M
	PO3	L	L	M	M
	PO4	L	L	L	L
	PO5	L	L	L	L
	PO6	M	M	M	M
	PO7	L	M	L	L
	PO8	L	L	L	L
	PO9	L	L	L	L
	PO10	L	L	L	L
	PO11	L	L	L	L
	PO12	M	M	M	M

COURSE TEACHING AND LEARNING ACTIVITIES

Sl.no	Week	Topic	Mode of delivery
1.	1-2	Introduction to Mechanical Engineering- Laws of Thermodynamics- Working of steam power plant	Lecture C&T/ PPT or any suitable mode
2.	3-4	Boilers - Steam and Gas Turbines	
3.	5-6	Fluid Machines - Basics of IC Engines – Engine terminologies	
4.	7-8	Concepts of Refrigeration and Air conditioning	
5.	9-10	Introduction to Production Technology - Metal Casting - Metal Forming - Machining – Lathe	
6.	11-12	Machining – Drilling machine – Milling machine - Metal Joining	Lecture C&T/ PPT or any suitable mode
7.	13-14	Powder metallurgy - Automobile Engineering - Machine Elements - Types and selection of materials, material	

		properties.		

COURSE ASSESSMENT METHODS

Sl.no	Mode of Assessment	Week/ Date	Duration	% Weightage
1.	Assessment – 1	6th Week	60 Minutes	20%
2.	Assessment – 2	11th Week	60 Minutes	20%
3.	Assessment – 3	Once in four weeks	--------	10%
4.	Assessment – 4	End Semester	180 Minutes	50%

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

Text Books:

1. *Lecture notes prepared by Department of Mechanical Engineering, NITT.*
2. *K. Venugopal, 'Basic Mechanical Engineering'.*

COURSE EXIT SURVEY

- Feedback from the students during class committee meetings.
- Anonymous feedback through questionnaire and unknown formats.

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

CORRESPONDENCE

All the students are advised to come to the class regularly. All the correspondence (schedule of classes/ schedule of assessment/ course material/any other information regarding this course) will be intimated in the Class only.

ATTENDANCE

1. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum of 75 % physical attendance in these contact hours along with assessment criteria to attend the end semester examination.
2. Any student, who fails to maintain 75% attendance need to appear for the compensation assessment (CPA). Student who scores more than 60 % marks in the CPA along with assessment criteria will be eligible for attending the end semester examination.
3. Students not having 75% minimum attendance at the end of the semester and also fail in CPA (scoring less than 60%) will have to RE DO the course.
4. The passing minimum shall be the class mean by two or maximum by three, whichever is lower.

ASSESSMENT

5. Attending all the assessments are MANDATORY for every student.
6. If any student is not able to attend any of the continuous assessments (CAs: 1 -2) due to genuine reason, student is permitted to attend the compensation assessment (CPA) with % weightage equal to maximum of the CAs. However, the maximum of % weightage among the assessments for which the student was absent will be considered for computing marks for CA. (This is not valid for students who have attendance lag.).

ACADEMIC HONESTY & PLAGIARISM

1. All the students are expected to be genuine during the course work. Taking of information by means of copying simulations, assignments, looking or attempting to look at another student's paper or bringing and using study material in any form for copying during any assessments is considered as dishonest.
2. Tendering of information such as giving one's program, assignments to another student to use or copy is also considered as dishonest.
3. Preventing or hampering other students from pursuing their academic activities is also considered as academic dishonesty.
4. Any evidence of such academic dishonesty will result in the loss of marks on that assessment. Additionally, the names of those students so penalized will be reported to the class committee chairperson and HoD of the concerned department.
5. Students who honestly producing ORIGINAL and OUTSTANDING WORK will be REWARDED.

ADDITIONAL COURSE INFORMATION

1. The faculty is available for consultation at times as per the intimation given by the faculty.
2. Queries (if required) to the course teacher shall only be emailed to the email id specified by the teacher(kishore@nitt.edu)

FOR SENATE'S CONSIDERATION

YR Kishore TF/MECH **Course Faculty**	Dr.B.Malarkodi Associate Professor /ECE **CC-Chairperson**	Dr.S.P.Sivapirakasam Associate Professor **HoD/MECH**