

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING  
NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI**

COURSE OUTLINE TEMPLATE			
Course Title	BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING		
Course Code	EEIR11 <small>(For 1<sup>st</sup> year MME Dept.)</small>	No. of Credits	02
Department	EEE	Faculty	Ms. D. Glory Rebekah Selvamani
Pre-requisites Course Code	---		
Course Coordinator(s) (if, applicable)	Dr. Sishaj P Simon		
Other Course Teacher(s)/Tutor(s) E-mail	---	Telephone No.	9487256723
Course Type	<input checked="" type="checkbox"/> Core course		<input type="checkbox"/> Elective course
COURSE OVERVIEW			
<p>Students get exposure to the fundamental of electrical devices and circuits. Students will be taught about the principle of operation and applications of several electrical machines. Students will understand the house wiring and electrical safety techniques and have an opportunity to make a practical attempt on house wiring. Further they will be exposed to basics of analog and digital electronic devices, circuits and simple applications.</p>			
COURSE OBJECTIVES			
<p>This course aims to equip the students with a basic understanding of Electrical circuits and machines for specific types of applications. The course gives a comprehensive exposure to house wiring. This course also equips students with an ability to understand basics of analog and digital electronics.</p>			
COURSE OUTCOMES (CO)		Aligned Programme Outcomes (PO)	
<p>The students shall develop an intuitive understanding of the circuit analysis, basic concepts of electrical machines, house wiring and basics of electronics and be able to apply them in practical situation.</p>		-	

<b>COURSE TEACHING AND LEARNING ACTIVITIES</b>			
<b>S.No.</b>	<b>Week</b>	<b>Topic</b>	<b>Mode of Delivery</b>
1	Weeks 1 to 3 (5 contact hours)	Basics of dc and ac circuits - Concepts	Lecture C&T/ PPT or any suitable mode
2	Week 3 (1 contact hours)	numerical examples/ problem solving	Group work (exercise)
3	Weeks 4 to 6 (5 contact hours)	DC & AC Machine- construction, principle of operation, types and applications.	Lecture C&T/ PPT or any suitable mode
4	Week 6 (1 contact hours)	numerical examples/ problem solving	Group work (exercise)
5	Weeks 7 to 8 (4 contact hours)	House Wiring - Tools and Components, types & safety Measures	Lecture C&T/ PPT or any suitable mode
6	Weeks 9 to 11 (6 contact hours)	Analog Electronics - Semiconductor Devices, Operational Amplifier and Introduction to UPS	
7	Weeks 12 to 14 (5 contact hours)	Digital Electronics : Number Systems, Boolean Laws, Implementation with Logic Gates	
8	Week 14 (1 contact hours)	numerical examples/ problem solving	Group work (exercise)

#### **COURSE ASSESSMENT METHODS**

<b>S.No.</b>	<b>Mode of Assessment</b>	<b>Week/Date</b>	<b>Duration</b>	<b>% Weightage</b>
1	1 <sup>st</sup> Cycle Test Examination (Written test) (1 <sup>st</sup> and 2 <sup>nd</sup> Units)	6 <sup>th</sup> Week	60 Minutes	20
2	2 <sup>nd</sup> Cycle Test Examination (Written test) (3 <sup>rd</sup> and 4 <sup>th</sup> Units)	11 <sup>th</sup> Week	60 Minutes	20
3	Take Home / Team Task	3 <sup>rd</sup> to 12 <sup>th</sup> week	Work will be carried out along with the course	10
4	Retest (Written Test) (1 <sup>st</sup> to 4 <sup>th</sup> Unit)	13 <sup>th</sup> week	60 Minutes	20
5	End Semester Examination (Written test)	15 <sup>th</sup> week	180 Minutes	50

**Note:**

1. Attending all the assessments (Assessment 1-3 and 5) are MANDATORY for every student.
2. If any student is not able to attend Assessment-1 (1<sup>st</sup> Cycle Test) / Assessment-2 (2<sup>nd</sup> Cycle Test) due to genuine reason, student is permitted to attend the Assessment- 4 (retest) with 20% weightage (20 marks).
3. In any case, retest will not be considered as an improvement test.

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

**Text Books:**

*Hughes revised by Mckenzie Smith with John Hilcy and Keith Brown, 'Electrical and Electronics Technology', 8th Edition, Pearson, 2012.*

**Reference Books:**

*R.J. Smith, R.C. Dorf, 'Circuits Devices and Systems', 5th Edition, John Wiley and sons, 2001.  
P. S. Dhogal, ' Basic Electrical Engineering – Vol. I & II', 42nd Reprint, Mc Graw Hill, 2012.  
Malvino, A. P., Leach D. P. and Gowtham Sha, 'Digital Principles and Applications', 6th Edition, Tata Mc Graw Hill, 2007.  
Vincent Del Toro, 'Electrical Engineering Fundamental', Prentice Hall India, 2002.*

**COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)**

Shall be obtained at the end of the course

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

**ATTENDANCE**

1. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum 75 % physical attendance in these contact hours to attend the end semester examination.
2. Any student, who fails to maintain 75% attendance need to appear for the retest. Student who scores more than 50 % marks in the retest 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 retest (scoring less than 50%) will have to RE-DO the course.

**ACADEMIC HONESTY & PLAGIARISM**

1. Copying in any form during assessments is considered as academic dishonesty and will attract suitable penalty.

**FOR APPROVAL**

Course Faculty  CC-Chairperson  5/2/2016 HOD 