

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

Department of Electrical and Electronics Engineering

COURSE OUTLINE TEMPLATE			
Course Title	Applied Electrical and Electronics Engineering Lab		
Course Code	CLLR10	No. of Credits	2
Department	Chemical Engineering	Faculty	Mr. K. Dileep
Pre-requisites Course Code	CLPC12		
Course Coordinator(s) (if, applicable)	-----		
Other Course Teacher(s)/Tutor(s) E-mail	dileep@nitt.edu	Telephone No.	9790636510
Course Type	<input checked="" type="checkbox"/> Core course	<input type="checkbox"/> Elective course	

COURSE OVERVIEW

This course syllabus has been framed such that the initial topics deal with the practical concepts about Transformers, DC and AC motors and thereby able to choose the appropriate drives for various applications. This course equips students to understand and apply the practical concepts of Combinational logic circuits and INTEL 8085 Microprocessor.

Hence on completion of this lab course a B.Tech. Student upon graduating as engineer would have a basic knowledge on choice of appropriate machine drive for various industrial applications with appropriate control strategy.

COURSE OBJECTIVES

This course provides the practical key concepts about Transformers, DC and AC motors and thereby able to choose the appropriate drives for various applications. This course equips students to understand and apply the practical concepts of Combinational logic circuits and INTEL 8085 Microprocessor.

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
On completion of the course the students will be able to	
1. Understand the usage of ammeter, voltmeter and other calibrations techniques would be enhanced.	PO ₁ , PO ₂ , PO ₃
2. Understand the performance of DC Motors and Transformers under various operating conditions using their various characteristics models	PO ₁ , PO ₂ , PO ₃ , PO ₅ , PO ₈ , PO ₁₁ , PO ₁₂
2. Describe different types AC motors and their characteristics.	PO ₁ – PO ₃ , PO ₅ , PO ₈ , PO ₉ , PO ₁₁ , PO ₁₂
3. Design and analyze combinational logic circuits	PO ₁ – PO ₃ , PO ₅ , PO ₈ , PO ₁₁ , PO ₁₂
4. Understand the architecture and instruction set of 8085.	PO ₁ – PO ₃ , PO ₅ , PO ₆ , PO ₈ , PO ₁₀ - PO ₁₂

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of Delivery
1	Week 1 10-7-17 to 14-7-17	Lab Introduction session	Lecture Chalk & Talk
2	Week 2 17-7-17 to 21-7-17	Load Test on DC Shunt Motor	Practical Experimentation
3	Week 3 24-7-17 to 28-7-17	Speed Control of DC Shunt Motor	Practical Experimentation
4	Week 4 31-7-17 to 4-8-17	Load Test on DC Series Motor	Practical Experimentation
5	Week 5 7-8-17 to 11-8-17	Open Circuit and Short Circuit Test on Single-Phase Transformer	Practical Experimentation
6	Week 6 14-8-17 to 18-8-17	Load Test on three phase induction motor	Practical Experimentation
7	Week 7 21-8-17 to 25-8-17	Combinational Logic circuit I	Practical Experimentation
8	Week 8 28-8-17 to 1-9-17	Combinational Logic circuit II	Practical Experimentation
9.	Week 9 4-9-17 to 8-9-17	Arithmetic operation using 8085	Practical Experimentation
10	Week 10 11-9-17 to 15-9-17	Compensation Lab	Practical Experimentation
11.	Week 11 18-9-17 to 22-9-17	Comprehensive test	Written Test
12.	2 nd Week of November	Final Assessment – Lab Practical Exam	

COURSE ASSESSMENT METHODS

S.No	Mode of Assessment	Week/Date	Duration	% Weightage
1.	Experimentation , Calculations, Viva, Graph and Result	During regular lab sessions	During regular lab sessions	40

2.	Comprehensive test	Week 11 18-9-17 to 22-9-17	60 minutes	20
3.	Final Assessment- Lab Practical Exam	2 nd Week of November	180 minutes	40

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

1. Mehta V K and Rohit Mehta, 'Principles of Electrical Machines', S Chand and company Ltd., 2006.
2. Dubey G K, 'Fundamentals of Electric drives', Narosa book distributors pvt. ltd , 2nd edition, 2012.
3. Ramesh S. Gaonkar, 'Microprocessor Architecture Programming and Applications with 8085', Penram Intl. Publishing, 6th edition, 2013.
4. Morris Mano, Michael D Ciletti, 'Digital Design', Pearson Education, 4th edition, 2008.
5. Theraja B L, 'A Text Book of Electrical Technology', vol 2, S Chand, 23rd edition, 2007.
6. Vincent Del Toro, 'Electrical Engineering Fundamentals', PHI, 2nd edition, 2009
7. Subrahmanyam V, 'Thyristor control of Electric Drives', Tata McGraw Hill, 1st edition.

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

1. Student's feedback through Class – Committee Meetings
2. Anonymous feedback from students using questionnaire

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

ATTENDANCE

1. Every student should maintain 75% attendance, if not they have to redo the course.
2. Students who have missed the regular lab class due to genuine/emergency reasons should get the prior permission for attending compensation lab class

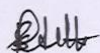
ACADEMIC HONESTY & PLAGIARISM


1. All the students are expected to be genuine during the course work. Taking information by copying another student's paper or using study material of any form during any assessments is considered dishonest.
2. Any evidence of such academic dishonesty will result in loss of marks in that assessment. Additionally names of such students will be reported to Class Committee Chairperson and HOD for necessary actions.


ADDITIONAL COURSE INFORMATION

1. The Course Coordinator is available for consultation during the time intimated to the students then and there.
2. All correspondence will be sent to webmail id of the students alone. Hence all students are advised to check their webmail regularly.

FOR SENATE'S CONSIDERATION


K. Dileep, TF/EEE)
Course Faculty


[Dr. S. Saravanan]
CC-Chairperson


HoD/Dept. of Chemical Engineering