Course Code	Course Name	Credits
MEL401	**Industrial Electronics**	**01**

Objectives:

1. To study operational characteristics of various analog and digital circuits.
2. To study microcontroller-based applications and its programming
3. To study operational characteristics of electrical motors.

Outcomes: Learner will be able to…

1. Demonstrate characteristics of various electrical and electronics components
2. Develop simple applications built around these components
3. Identify use of different logic gates and their industrial applications
4. Built and demonstrate parameter measurements using microcontroller
5. Test and Analyze speed-torque characteristics of electrical machines for speed control.

List of Experiments: Minimum ten experiments need to be performed, six from 1-9 and four from 10-15.

Sr.No.	**List of Experiments**
1.	MOSFET / IGBT as a switch
2.	V-I characteristics of SCR
3	Triggering circuit of SCR (UJT)
4.	Light dimmer circuit using Diac-Triac
5.	Full wave Rectifier using SCR with R /R-L load
6.	Single phase Bridge inverter with rectifier load
7.	OPAMP as Inverting and Non inverting amplifier.
8.	OPAMP as a Comparator
9.	555 timer as AstableMultivibrator
10.	Study of logic gates and Logic Operations like, NOT, AND, OR
11.	Realization of basic gates using universal gates
12.	Speed control of DC motor
13.	Speed control of induction motor
14.	Simple programs using microcontroller
15.	Simple microcontroller based application like Temp Measurement/ Speed Measurement using Proximity Sensor/ Piezoelectric Actuator Drive
16.	Microcontroller based speed control for Induction Motor

Assessment:

Distribution of marks for term work

Laboratory work	20 Marks
Attendance	05 Marks

End Semester Practical/Oral Examination:

1. Pair of Internal and External Examiner should conduct practical/viva based on contents
2. Distribution of marks for practical/viva examination shall be as follows:
    a. Practical performance 15 marks
    b. Viva 10 marks
3. Evaluation of practical examination to be done based on the experiment performed and the output of theexperiment during practical examination
4. Students work along with evaluation report to be preserved till the next examination