

ELECTRONIC DEVICES AND DIGITAL LOGIC DESIGN LAB

II B. TECH- II SEMESTER								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIE	SEE	Total
A4EC36	ESC	-	-	3	1.5	30	70	100
COURSE OBJECTIVES:								
<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Design the semiconductor devices based circuits and analyze its parameters 2. Design of oscillators and amplifiers 3. Study of logic gates and verify their truth tables. 4. Implementation of the given Boolean function using logic gates. 5. Verification of K-Map. 6. Design the combinational and sequential circuits 								
COURSE OUTCOMES:								
<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Calculate various parameters of devices from their characteristics. 2. Understanding of the fundamental concepts and techniques used in digital electronics. 3. To understand and examine the structure of various number systems and its application in digital design. 4. The ability to understand, analyze and design various combinational and sequential circuits. 5. Ability to identify basic requirements for a design application and propose a cost effective solution. 6. To develop skill to build, and troubleshoot digital circuits. 								
LIST OF EXPERIMENTS								
WEEK-1								
<ol style="list-style-type: none"> 1. Characteristics of PN Junction diode 2. Characteristics of Zener diode 3. Ripple Factor and Load Regulations of Half-wave Rectifier with and without filters 4. Ripple Factor and Load Regulations of Full-wave Rectifier with and without filters 								
WEEK-2								
<ol style="list-style-type: none"> 6. Ripple Factor and Load Regulations of Half-wave Rectifier with and without filters 7. Ripple Factor and Load Regulations of Full-wave Rectifier with and without filters 								
WEEK-3								
<ol style="list-style-type: none"> 8. Input and Output characteristics of Transistor in Common Emitter configuration 								
WEEK-4								
<ol style="list-style-type: none"> 9. Drain and Transfer Characteristics of Junction Field Effect Transistor (JFET) 								
WEEK-5								
<ol style="list-style-type: none"> 10. Gain and Frequency response of Common Emitter Amplifier 								

WEEK-6
11. Gain and Frequency response of Feedback Amplifier (Voltage series or current series)
WEEK-7
12. Heartley and Colpitts Oscillator
WEEK-8
13. RC phase shift Oscillator
WEEK-9
14. Realization of Logic gates using discrete components
15. Binary Adders ,
WEEK-10
16. Subtractions and Comparators
WEEK-11
17. Multiplexers
18. Decoders
WEEK-12
19. Flip-Flops
WEEK-13
20. Counters
WEEK-14
21. Shift Registers
REFERENCE BOOKS:
<ol style="list-style-type: none"> 1. R.P. Jain, "Modern digital Electronics", Tata McGraw Hill, 4th edition, 2009. 2. W.H. Gothmann, "Digital Electronics- An introduction to theory and practice", PHI, 2nd edition ,2006. 3. D.V. Hall, "Digital Circuits and Systems", Tata McGraw Hill, 1989
WEB REFERENCES:
<ol style="list-style-type: none"> 1. https://www.youtube.com/watch?v=M0mx8S05v60&list=PLBlnK6fEvgRiMH3mWf6kwqiTbT798eAOm 2. https://www.youtube.com/watch?v=CeD2L6KbtVM&list=PL018B3BB2E6FE781D