

ECE120:BASIC ELECTRONICS ENGINEERING WORKSHOP

L:0 T:0 P:2 Credits:1

Course Outcomes: Through this course students should be able to

- CO1 :: assemble electronic components and measurement devices on the breadboard
- CO2 :: validate the functionality of various digital & analogue ICs
- CO3 :: use component-specific ratings and measuring instruments
- CO4 :: develop combinational circuits by applying design and analysis principles
- CO5 :: collaborate effectively as an individual and as a member of a team to execute the project
- CO6 :: build applications using sensor modules and Microcontroller board

List of Practicals / Experiments:

The Electronics Expedition

- Familiarization of electronics components, digital trainer module, input sources and display devices related to electronic circuits

Divider Quest

- Validation and analysis of voltage and Current Divider Law

Diode Voltage Quest

- Analyze the voltage-current characteristics of a PN junction diode under forward biasing conditions.

Universal Gate Adventure

- Implementation and validation of logic gates and their design using universal gates

Adder Chronicles

- Design a half adder and full adder and validate the combinational logic

Intelligent Systems

- Design and implementation of an Arduino Uno and IR sensor-based detection system

List of Project Areas

- Home automation
- Environmental monitoring
- Robotics and automation
- Industrial applications
- Education and learning
- Energy and power systems
- Communication systems
- Entertainment industry
- Biomedical & health monitoring system

References:

1. DIGITAL LOGIC AND COMPUTER DESIGN by MORRIS MANO, PEARSON
2. INTERNET OF THINGS by RAJ KAMAL, MC GRAW HILL
3. BASIC ELECTRICAL AND ELECTRONICS ENGINEERING by D P KOTHARI, I J NAGRATH, MCGRAW HILL EDUCATION

