EC – 10001

Basic Electronics

2 Credits

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Me?

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Course Requirements

CWS: 30 **MTE: 20** **ETE: 50**

- ❑ Midterm Exams
- ❑ End Term Exam
- ❑ Continuous Assessment
  - HW assignments (3 or 4 Nos)
    - Based on each Module
  - Quizzes (2 Nos)
    - Based on HW questions and MCQ (20-30 minutes long)
  - Project based Activity on Subject


START

ourse Objective

To introduce the fundamental concepts o
electronic devices and circuits for variou
engineering applications.

urse Outcome

To understand the properties of semiconductors.

To analyze different types of diodes, study of simple electronic circuits using diode

Different types of transistor , its configurations. Application of transistor in ampli
and switch.

The ability to know about OP-AMP & its applications.

To understand different types of digital gates. Its application in digital circuits.

Able to exposure the importance of electronic devices and system.

UNIT NAME	SUBJECT UNIT
Semiconductor	Introduction to Energy band concept of materials, difference between metal, i and semiconductor. Intrinsic and extrinsic semiconductors (n-type & p-type). conduction mechanism in Semiconductor
unction Diode	Introduction, Basic Definition, symbol and operation of p-n junction diode. Ha full-wave rectifiers with filters. Breakdown mechanisms and Zener diode
Transistor	Transistor constructions, operations and their characteristics. Transistor Biasing line analysis. Concept of JFET and MOSFET.
	MID SEMESTER
Operational Amplifiers	Operational Amplifier (Op-amp) and application: - Introduction and its Charac . Application of Op-Amp.
gital Electronics	Introduction, Different number systems and its conversions, Logic gates and tru tables of OR, AND, NAND, EX-OR. Combinational circuit and Sequential circu
Miscellaneous ectronic Devices And Communication	SCR, opto-electronic devices and fiber techniques, Introduction and describing s performance Fundamentals of Analog communication techniques (AM, FM)

ext Books :

. o.	Name of Books / Authors	
.	Electronics Fundamentals and Applications-D. Chattopadhyay, P C Rakshit	
.	Electronic Devices & Circuits- R. L. Boylestad- 10th Edition (Pearson).	
.	Integrated Electronics – J. Millman & Halkias(TMH)	
.	Integrated electronics: Analog and digital circuits and Systems – Jacob Millman, Christos C. Halkias & Chetan D. Parikh(TMH)	

ne Course Material:

.nptel.ac.in

Lecture Scheduled
Till 30th Sept 2022

- MON 09 AM - 10 AM
- WED 11 AM - 12 PM
- THU 11 AM - 12 PM

"Learning by Doing"

An old Chinese proverb says:

I Read - I Forget

I See - I Remember

I Do - I Understand

There is only one way to learn to do anything: JUST DO IT!