

Regulation GRBT-20	Godavari Institute of Engineering & Technology (Autonomous)	I B.Tech. I Sem (1 <sup>st</sup> Semester)			
Course Code	<b>INTRODUCTION TO ELECTRONICS ENGINEERING</b>				
Teaching	Total Contact Hours -	L	T	P	C
Prerequisites: Basics of electronics		3	-	-	3

- ❖ To understand the efficacy of Electronic principles which are pervasive in engineering applications
- ❖ To familiarize the students of Electronics and Communication Engineering with the fundamental concepts of semiconductor devices, electronic circuits and communication systems

#### Course Outcomes:

On Completion of the course, students will be able to	
CO1:	To understand the basic knowledge of elements of circuits
CO2:	To understand the knowledge of semiconductor devices and their principle of operation
CO3:	To understand functions of communication system and different modulation technologies, definition of signals and classification of signals and its generation.
CO4:	To understand the working of CRO and its functionality.

#### UNIT-1

**Introduction to Electronics Engineering:** Overview, scope and objective of studying Electronics Engineering, Evolution and Impact of Electronics in industries and in society, Familiarization of Resistors, Capacitors, Inductors, Transformers and Electro mechanical components.

#### UNIT-2

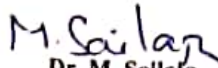
**Introduction to semiconductor devices:** Band structure of semiconductors, intrinsic and extrinsic semiconductors; Basic principle and operation of semiconductor devices – diode, bipolar junction transistor, field effect transistors

#### UNIT-3


##### Fundamentals to signals

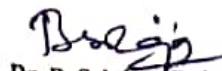
Classification of signals, Elementary signals - Continuous Time (CT) signals, Discrete Time (DT) signals, Basic operations on signals

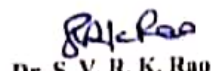
Signal Generators: Types of generators and their operation: The sine wave generator, Audio oscillator, Function generators, Pulse generators, AF signal generator, RF generators

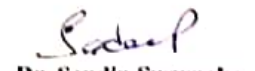
  
Dr. M. Sallaja  
(University Nominee)

  
Dr. P. Rajesh Kumar  
(Subject Expert)

  
Mr. S. Surya Shankar  
(Industry Expert)


  
Dr. B. Srinivas Raja  
(Chairman, BOS)

  
Dr. S. V. R. K. Rao  
(BOS Member)

  
Dr. Sandip Swarnakar  
(BOS Member)

  
Mr. Biswaranjan Barik  
(BOS Member)

  
Mr. G. V. Vinod  
(BOS Member)

  
Mrs. M. Saritha Devi  
(BOS Member)

#### UNIT-4

**Introduction to Communication Systems:** Elements of a communication system – transmitter and receiver; Processing of signals for transmission – basic concepts of amplitude and frequency modulation; Examples of telecommunication systems – telephone, radio, television, mobile communication and satellite communication

#### UNIT-5

##### Electronic Dynamics and CRO

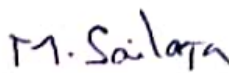
Motion of charged particles in electric and magnetic fields. Simple problems involving like Electric and Magnetic field only. Electrostatic and magnetic focusing. Principles of CRT, Deflection sensitivity (Electrostatic and magnetic deflection) Applications of CRO: Voltage current and frequency measurements.


#### Text Books

- [1] David A. Bell, "Electronic Devices and Circuits", Oxford University Press, 5th Edition, 2008
- [2] D.P. Kothari, I. J. Nagrath, "Basic Electronics", McGraw Hill Education (India) Private Limited, 2014.
- [3] S Salivahanan, N Suresh Kumar Basic Electronics and Devices ,McGraw Hill Education (India) Private Limited,2018
- [4] Boylestad R.L., Nashelsky L., "Electronic Devices and Circuit Theory", Pearson, 10th 2009 Edition.
- [5] Millman J., Halkias C.C., Jit S., "Electronic Devices and Circuits", Tata McGraw-Hill, 2nd 2007 Edition
- [6] Kennedy G., Davis B., "Electronic Communication Systems", Tata McGraw-Hill, 4th 2008 Edition.
- [7] Tomasi W., "Advanced Electronic Communication Systems", Pearson/Prentice-Hall, 6th 2004 Edition

#### Web-Resources:

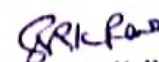
1. [www.electrical4u.com](http://www.electrical4u.com)
2. [www.nptel.com](http://www.nptel.com)


  
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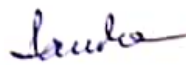
  
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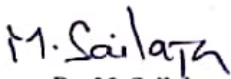
  
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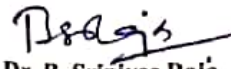
  
Mrs. M. Saritha Devi  
(BOS Member)

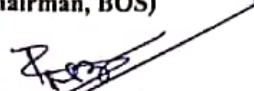
**CO-PO Mapping:**

1: Slight (Low)      2: Moderate (Medium)      3: Substantial (High)      -: No Correlation

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	-	-	-	-	-	-	2	-	-	3	-
CO2	3	-	-	-	-	-	2	-	-	-	2	-
CO3	3	-	-	-	-	-	2	-	-	1	-	-
CO4	2	-	-	-	-	-	2	-	-	-	-	-


  
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