

MANIPAL UNIVERSITY JAIPUR

School of Electrical Electronics & Communication Engineering

Department of Electronics & Communication Engineering
Course Hand-out

Basic Electronics| EC 1101 | 4 Credits | 3 | 0 4

Session: July – Dec 2014 | Faculty: Ms Pallavi Yarde

A. Course Outcomes: At the end of the course, students will be able to:

[EC1001.1]. Apply principles of physics to describe and analyse the working of semiconductor devices and integrated circuits and hence develop employability skills.

[EC1001.2]. Analyse different biasing configurations of Bipolar Junction Transistor

[EC1001.3]. Analyse Inverting or Non-Inverting amplifier structures comprising of Operational Amplifier and to promote development of skills towards core employability

[EC1001.4]. Demonstrate inter-conversion on different number systems

[EC1001.5]. Demonstrate minimization of Boolean expressions

[EC1001.6]. Identify different elements of communication

B. SYLLABUS

Introduction to electronic devices: Diode, Zener diode, BJT, LED;

Diode circuits: Half Wave and Full Wave rectifier, clipper, clamper circuits;

BJT biasing: CE, CB, CC Configurations, Biasing and stabilization of Q- point, fixed bias, self-bias, collector bias., Operational amplifier;

Number systems; logic gates and its truth table, Boolean algebra, Realization of function using Boolean algebra: Boolean identities, De Morgan's theorems, combinational logic circuits, truth tables; K-map; Flip-flops: R-S, J-K, D, T, Master-Slave.

Introduction to communication: Frequency Bands, Noise, Transmission media, Wire media, comparisons, Wireless communications; AM: Block diagram, spectral expressions, Waveforms, AM Detector, Definition and applications of SSB, DSB, VSB; FM: Block diagram, spectral expressions and waveforms, Comparison of AM & FM.

TEXT BOOKS

1. A. P. Malvino, David J Bates, *Electronic Principles*, Seventh edition, TMH.
2. 2. Tokhiem, *Digital Electronics, Principles and Applications*, Sixth edition, TMH.
3. 3. G. Kennedy, B. Davis, *Electronic Communication systems*, TMH.
4. 4. R. L. Boylestad, L. Nashelsky, *Electronic Devices and Circuit Theory*, Ninth edition, PHI,
5. 5. J. Millman, C. C. Halkias, Satyabratajit, Millman's *Electronic Devices and Circuits*, TMH

