SRM UNIVERSITY

Faculty of Engineering and Technology

DEPARTMENT OF ELECTRONICS AND INSTRUMENTATION

Course Code : EC1001

Course Title **:** BASIC ELECTRONICS ENGINEERING

Year& Semester **:** I & II semester

Course Duration : Even Semester (JAN-2015)

Location : University library building

Faculty Details:

Name of the staff	Section	Staff room	Office Hours	Mail ID
Ms.S.INDIRANI	EIE-A&B	Tech park15th floor	8.30 to 4.00 pm	Indirani.s@ktr.srmuniv.ac.in

Required Text Books:

1. Muthusubramanian.R, Salivahanan.S, Muraleedharan.K.A, Basic Electrical, Electronics and Computer Engineering, Tata McGraw - Hill ,1999.
2. Metha V.K, Principles of Electronics ,S. Chand & Co.,1980.
3. Kalsi H S, Electronics Instrumentation, ISTE publication,1995

REFERENCE BOOKS

1. Kothari D. P and Nagrath IJ, Basic Electrical Engineering, Tata McGraw- Hill, 1991.
2. Thomas L.Floyd ,Electronic devices, Addison Wesley Longman (Singapore) Pvt . Ltd., 5th Edition.

Web Resource:

- http://en.wikipedia.org/wiki/Basic electronics
- http://en.wikibooks.org/wiki/ Integrated circuits
- http://en.wikipedia.org/wiki/Digital electronics

Prerequisite :

Basic knowledge of physics and semiconductors

Objective:

1. To understand the basic concept of Electronic Components and Devices
2. To explain the working principle, construction and applications of Transducers and measuring Instruments

3. To gain knowledge about the fundamentals of Digital Electronics and Integrated circuits.

Tentative Test dates

Cycle Test I : 09.02.2015
Cycle Test II : 09.03.2015
Model Examination : 15.04.2015

Test Portions

Cycle Test-I : Unit I
Cycle Test-II : Unit –II
Model Examination : All three units

Assessment details

Cycle test I	10 marks
Cycle test II	10 marks
Model test	20 marks
Surprise test	5 marks
Attendance	5 marks
TOTAL	50 marks

Outcomes

Students who have successfully completed this course

Course outcome	Program outcome
Electronic Components and Devices Semiconductor Transistors Special Semiconductor Devices Rectifiers Transducers and measuring Instruments Digital Electronics and Linear ICs	**a:** The student will be able to understand the working of various electronic components and devices **b:** The student will have a broad knowledge in Digital Electronics and Linear ICs. **c**. Ability to identify appropriate Transducers and measuring Instruments for various applications.

Detailed Session Plan

Day	Name of the topics	Reference
DAY 1	Introduction	Metha V.K, Principles of Electronics
DAY 2	Passive components – Resistors, Inductors and Capacitors and their IV Relationship and Uses	Metha V.K, Principles of Electronics
DAY 3	Semiconductor- Energy band diagram	Metha V.K, Principles of Electronics
DAY 4	Intrinsic and Extrinsic semiconductors	Metha V.K, Principles of Electronics
DAY 5	PN junction diodes and Zener diodes	Metha V.K, Principles of Electronics
DAY 6	PNP and NPN transistors and theory of operation	Metha V.K, Principles of Electronics
DAY 7	Transistor configurations – characteristics and comparison.	Metha V.K, Principles of Electronics
DAY 8	FET & V I characteristics –applications	Kothari D. P and Nagrath IJ, Basic Electrical Engineering
DAY 9	Opto electronics devices	Metha V.K, Principles of Electronics
DAY 10	General features and classification of transducers	Thomas L.Floyd ,Electronic devices
DAY 11	Unbonded strain gauge-Bonded strain gauge-thermistor	Kalsi H S, Electronics Instrumentation
DAY 12	Differential output transducers – LVDT	Kalsi H S, Electronics Instrumentation
DAY 13	Active transducer-piezoelectric and thermocouple	Kalsi H S, Electronics Instrumentation
DAY 14	Hall effect transducer	Thomas L.Floyd ,Electronic devices
DAY 15	Number systems	Muthusubramanian.R, Salivahanan.S, Muraleedharan.K.A, Basic Electrical, Electronics and Computer Engineering
DAY 16	Boolean Theorems	Muthusubramanian.R, Salivahanan.S, Muraleedharan.K.A, Basic Electrical, Electronics and Computer Engineering
DAY 17	DeMorgan's Theorem	Muthusubramanian.R, Salivahanan.S, Muraleedharan.K.A, Basic Electrical, Electronics and Computer Engineering
DAY 18	Logic gates	Muthusubramanian.R, Salivahanan.S, Muraleedharan.K.A, Basic Electrical, Electronics and Computer Engineering
DAY 19	Implementation of Boolean Expression using Gates	Muthusubramanian.R, Salivahanan.S, Muraleedharan.K.A, Basic Electrical, Electronics and Computer Engineering
DAY 20	Standard form Boolean expression	Metha V.K, Principles of Electronics
DAY 21	Block diagram of a basic communication System	Communication systems R.P Singh
DAY 22	Frequency spectrum	Communication systems R.P Singh
DAY 23	Need for modulation- methods of modulation	Communication systems R.P Singh

DAY 24	Principles of AM,	Communication systems R.P Singh
DAY 25	Principles of FM	Communication systems R.P Singh
DAY 26	Pulse analog modulation	Communication systems R.P Singh
DAY 27	pulse digital modulation	Communication systems R.P Singh
DAY 28	AM / FM transmitters	Communication systems R.P Singh
DAY 29	receivers block diagram	Communication systems R.P Singh
DAY 30	Discussion two mark question paper	