Semester Plan
(Theory)

TCET/FRM/IP-02/09 | **Revision: A**

Semester: III | **Course: ETRX**

Subject: Electronic Devices and Circuits-1 | **Class: SE ETRX**

S.No.	Prerequisite/ Bridge course:	Duration (Week /Hrs)	Modes of Learning	Recommended Sources
1	Basic electrical and electronics engineering, Physics	hours	Self Learning/ Revision	**Textbooks: 1. Millman and Halkies, "Integrated Electronics", TATA McGraw Hill. 2. Donald A. Neamen, "Electronic Circuit Analysis and Design", TATA McGraw Hill, 2nd Edition Reference Books: 1. Boylestad," Electronic Devices and Circuit Theory", Pearson 2. David A. Bell, "Electronic Devices and Circuits", Oxford, Fifth Edition.**

Class Room Teaching

Sr. No	Module No.	Lesson No	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1	**1**	L1.1	Introduction and device basics	Power point presentation, Chalk & Board	07-11-2017	–	
2	**____**	L 1.2	OBE	Power point presentation, Chalk & Board	07-11-2017	–	
3	1	L1.1	SOP-Theory,Introduction to Devices Need of course & prerequsite courses	Power point presentation, Chalk & Board	13-07-2017	1.9.1	
4	1	L1.2	SOP- Theory	PPT, Chalk & Board	14-07-2017	1.9.1	
5	1	L2.1	PN junction Diode : Basic Structure, Energy Band junction current	Chalk & Board	17-07-2017	1.9.2	
6	1	L2.2	drift and diffusion current	Chalk & Board,	19-07-2017	1.9.6	
7	1	L3.1	DC load line	Chalk & Board,	24-07-2017	1.9.8	
8	1	L3.2	small signal model	Chalk & Board,	27-07-2017	1.9.10	
7	1	L4.1	Applied Bias, Reverse Applied Bias	Chalk & Board,	31-07-2017	1.9.5	
8	1	L4.2	temperature effects	Power point presentation, Chalk & Board	03-08-2017	1.9.9	
9	1	L5.1	Clippers	Chalk & Board,	07-08-2017	1.9.9	
10	1	L5.2	Clampers	Chalk & Board,	10-08-2017	1.9.9	
11	2	L2.1	BJT operation	Power point presentation, Chalk & Board	18/7/2017	2.1	

12	2	L2.2	BJT voltages and currents, BJT characteristics (CE)	Power point presentation, Chalk & Board	19/7/2017	2.1	
13	2	L2.3	CB, CC configurations	Power point presentation, Chalk & Board	21/7/2017	2.1	
14	2	L3.1	Early Effect	Power point presentation, Chalk & Board	26/7/2017	2.1	
15	2	L3.2	DC Circuit Analysis: DC load line and region of Operation, , bias stability and compensation, analysis and design of biasing	Power point presentation, Chalk & Board	26/7/2017	2.2	
16	2	L4.1	Common Bipolar Transistor Configurations, biasing circuits	Power point presentation, Chalk & Board	08-02-2017	2.2	
17	2	L4.2	bias stability and compensation, analysis and design of biasing circuits.	Power point presentation, Chalk & Board	08-02-2017	2.2	
18	2	L5.1	Design Problems	Power point presentation, Chalk & Board	08-09-2017	2.3	
19	2	L5.2	AC Analysis of BJT Amplifiers : AC load line, , graphical analysis, ac equivalent circuits and analysis to obtain voltage	Power point presentation, Chalk & Board	08-09-2017	2.4	
20	2	L6.1	small signal models (h-parameter model, re model, Hybrid-pi model)	Power point presentation, Chalk & Board	16/8/2017	2.4	
21	2	L6.2	Graphical analysis, ac equivalent circuits .	Power point presentation, Chalk & Board	16/8/2017	2.4	
22	2	L8.1	Analysis to obtain voltage gain, current gain, input impedance, output impedance of CE,CB and CC	Power point presentation, Chalk & Board	30/8/2017	2.4	
23	3	L8.2	JFET: Construction, operation and characteristics.	Power point presentation, Chalk & Board	30/8/2017	2.4	
24	3	L9.1	MOSFET: Construction, operation and characteristics of D-MOSFET and E-MOSFET.	Power point presentation, Chalk & Board	09-06-2017	3.1	
25	3	L9.2	MOSFET Continued	Power point presentation, Chalk & Board	09-06-2017	3.1	
26	3	L10.1	DC Circuit Analysis : DC load line and region of operation	Power point presentation, Chalk & Board	13/9/2017	3.1	
27	3	L10.2	Common-MOSFETs configurations, Analysis and Design of Biasing Circuits	Power point presentation, Chalk & Board	13/9/2017	3.1	
28	3	L11.1	AC Analysis: AC load line, Small-Signal model of MOSFET and its equivalent Circuit)	Power point presentation, Chalk & Board	20/9/2017	3.2	
29	3	L11.2	Small-Signal Analysis MOSFET Amplifiers (Common-Source, Source Follower, Common Gate	Power point presentation, Chalk & Board	20/9/2017	3.2	
30	3	L13.1	Numericals based on above topic	Power point presentation, Chalk & Board	10-04-2017	3.2	
31	4	L6.1	Special semiconductor devices – I Construction, working and characteristics of : Zener diode	Chalk & Board, PPT	14-08-2017	4.9.1	

32	4	L7.1	Construction, working and characteristics of : Schottkey diode	Chalk & Board, PPT	24-08-2017	4.9.2	
33	4	L8.1	Construction, working and characteristics of Varactor diode	Power point presentation, Chalk & Board	31-08-2017	4.9.3	
34	4	L9.1	Construction, working and characteristics of : Tunnel diode	Chalk & Board, PPT	04-09-2017	4.9.4	
35	4	L9.2	Construction, working and characteristics of : LEDs	Chalk & Board, PPT	07-09-2017	4.9.5	
36	4	L10.1	Construction, working and characteristics of :	Chalk & Board	11-09-2017	4.9.6	
37	5	L10.2	Rectifiers and Regulators Rectifiers: working and analysis of Half wave	Chalk & Board	14-09-2017	5.9.2	
38	5	L11.1	Center tap rectifiers	Power point presentation, Chalk & Board	18-09-2017	5.9.3	
39	5	L11.2	Bridge Full wave rectifiers	Chalk & Board	21-09-2017	5.9.4	
40	5	L12.1	Regulators: Zener shunt regulator	Chalk & Board, PPT	25-09-2017	5.9.5	
41	5	L13.1	Series regulator using single transistor and Zener	Chalk & Board,	05-10-2017	5.9.6	
42	5	L14.1	shunt regulator using single transistor and Zener	Chalk & Board,	12-10-2017	5.9.7	
43	6	L15.1	Design of full wave rectifier with LC and pi filter.	Power point presentation, Chalk & Board	16-10-2017	6.9.3	
44		L13.2	Doubt Solving	Power point presentation, Chalk & Board	10-04-2017	all	
45		L13.3	Paper Solving and Prac/Viva exam discussion	Power point presentation, Chalk & Board	10-07-2017	all	
46		L13.4	Paper Solving and Prac/Viva exam discussion	Power point presentation, Chalk & Board	10-07-2017	all	
Remark: Course:		Syllabus Coverage:		Practice Session: 2		**Content Beyond Syllabus:** Application of Linked List to organize the data on	
No. of (lectures planned)/(lecture taken): 54							

Advanced course: Data structure programming using Python	20 Hours	Online NPTEL videos with Hands on	**Web sources:** 1. NPTEL-https://onlinecourses.nptel.ac.in 2. www.tutorialpoint.com1. Instructor's study

Text Books:

Reference Books:

Digital Reference:

3.1 www.nptel.ac.in

3.2 www.tutorialpoint.com

Name & Signature of Faculty Signature of HOD Signature of Principal /Dean (Academics)

Date: Date: Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non –digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.