



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Bachelor of Vocation (B.Voc.), 1st Semester

Branch: Solar & Renewable Energy

Subject Name: Fundamental of Analog Electronics Lab

Subject Code: 1110705

Type of course: Core

Prerequisite: NA

Rationale: Electronics is playing a key role in all engineering applications. Purpose of this subject is to make students familiar with basic electronics concepts. Students will be able to operate electronic test and measurement equipment like multi-meter, CRO, DC power supply and function generator.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical		
			ESE (E)	PA(M)	ESE (V)	PA (I)		
0	0	4	2	0	0	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Content:

Sr. No.	Practical / Hands on Exercise Hrs.	Hrs.
1	To Study Electronic Symbols And Units.	2
2	To Observe Waveforms On Oscilloscope, Measure Basic Parameters Amplitude And Frequency Of Sine Wave And Square Wave.	4
3	Obtain V-I characteristics of semiconductor P-N Junction diode.	4
4	Obtain V-I characteristics of Zener diode.	4
5	To observe waveform at the output of half wave rectifier with and without filter.	2
6	To observe waveform at the output of Full wave rectifier with and without filter.	2
7	To Verify I/P & O/P Characteristic Of CE Transistor Configuration.	2
8	To Verify O/P & Transfer Characteristics Of A Field Effect Transistor (FET).	2
9	To Perform Voltage regulator using 78xx and 79xx.	2
10	To make full wave rectifier circuit with filter.	4
TOTAL		28



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Reference Books:

1. David A. Bell, “Electronic Devices and Circuits”, Oxford University Press, Fifth edition
2. Albert Malvino & David, “Electronic Principles”, Tata McGraw-Hill, Seventh edition
3. R. L. Boylestad and L. Nashelsky, “Electronic Devices and Circuit Theory”, Pearson Education
4. Jaccob Millman, Chritos Halkias, Chetan D Parikh, “Integrated Electronics”, Tata McGraw-Hill, Second edition
5. Albert Malvino & David, “Problems and Solutions in Basic Electronics, McGraw Hill Education 2

Course Outcomes:

Sr. No.	CO Statement	Marks %Weightage
CO-1	Analyze the general Purpose diode.	30
CO-2	Analyze the special-Purpose diode.	10
CO-3	Apply knowledge of transistor in amplifier circuits & Switch.	30
CO-4	Analyze basic FET Circuits	20
CO-5	Understanding the working of Regulated Power Supply.	10

List of Open Source Software/learning website:

1. <http://nptel.ac.in/syllabus/117103063/>
2. <https://swayam.gov.in/course/3595-basic-electronics>
3. eSIM available on FOSSEE website: <https://fossee.in/>