



Department of Electrical and Electronics Engineering

COURSE MODULES OF THE SUBJECT TAUGHT FOR THE EVEN SEMESTER 2024-25

Course Syllabi with CO's

Faculty Name: Dr. Sathish K R				Academic Year: 2024-2025			
Department: Electrical and Electronics Engineering							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
BEEL456B	Scilab / MATLAB for Electrical and Electronic Measurements	Core	Electrical and Electronic Measurements	2	2		12 Lab Session
Course Objectives	<ol style="list-style-type: none"> 1. Along with prescribed hours of teaching –learning process, provide opportunity to perform the experiments/programmes at their own time, at their own pace, at any place as per their convenience and repeat any number of times to understand the concept. 2. Provide unhindered access to perform whenever the students wish. 3. Vary different parameters to study the behaviour of the circuit without the risk of damaging equipment/ device or injuring themselves. 						
Topics Covered as per Syllabus							
<ol style="list-style-type: none"> 1. Design and Analysis of measurement of Resistance using Wheatstone and Kelvins double bridge. 2. Design and Analysis of measurement of Capacitance using Schering and De-Sauty's Bridges. 3. Design and Analysis of measurement of Inductance using Maxwells and Anderson Bridges. 4. Design and Analysis of measurement of Frequency using Wien's Bridge. 5. Design and Analysis of measurement of Real Power, Reactive and Power Factor in Three Phase Circuits. 6. Design and Analysis of measurement of Energy in Three Phase Circuits. 7. Design and Analysis of measurement of Flux and Flux density. 8. Testing and Analysis of Current Transformer using Silsbees Deflection Method. 9. Testing and Analysis of Voltage Transformer using Silsbees Deflection Method. 10. Design and Analysis of True RMS Reading Volt Meters. 11. Design and Analysis of Integrating and Successive approximation type Digital Volt Meters. 12. Design and Analysis of Q Meter 							
List of Text Books							
<ol style="list-style-type: none"> 1) 1. Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpat Rai & Co, 10th Edition 2) 2. A Course in Electronics and Electrical Measurements and Instrumentation, J. B. Gupta, Katson Books, 2013 							
List of Reference Books							
<ol style="list-style-type: none"> 1) Electrical and Electronic Measurements and Instrumentation, R.K. Rajput, S Chand, 5th Edition, 2012 2) Electrical Measuring Instruments and Measurements, S.C. Bhargava, BS Publications, 2013 3) Modern Electronic Instrumentation and Measuring Techniques, Cooper D and A.D. Heifrick, Pearson, First Edition, 2015 4) Electronic Instrumentation and Measurements, David A Bell, Oxford University, 3rd Edition, 2013 5) Electronic Instrumentation, H.S.Kalsi, Mc Graw Hill, 3rd Edition, 2010 							
List of URLs, Text Books, Notes, Multimedia Content, etc							
www.nptel.ac.in https://www.eeweb.com/							



Department of Electrical and Electronics Engineering

Course Outcomes	<p>At the end of the course the student will be able to:</p> <ol style="list-style-type: none"> Develop the knowledge of theoretical and mathematical principles of electrical measuring instruments. Examine various real-life situations in domestic or industrial scenario where measurements of electrical quantities are essential. Choose the proper type and specification of measuring procedure and measuring instruments for different applications. Design new sensing and measuring schemes for various electrical and electronic applications.
	<p>Graduate Attributes (As per NBA) Engineering Knowledge, Problem Analysis, Design / development of solutions, Communication, Individual and Team Work, , Ethics.</p> <p>Assessment Details (CIE) The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each course. The student has to secure not less than 35% (18 Marks out of 50) in the semester-end examination (SEE). Continuous Internal Evaluation (CIE): CIE marks for the practical course is 50 Marks. The split-up of CIE marks for record/ journal and test are in the ratio 60:40.</p> <p>SEE: SEE marks for the practical course is 50 Marks. SEE shall be conducted jointly by the two examiners of the same institute, examiners are appointed by the University All laboratory experiments are to be included for practical examination. Evaluation of test write-up/ conduction procedure and result/viva will be conducted jointly by examiners. General rubrics suggested for SEE are mentioned here, writeup-20%, Conduction procedure and result in - 60%, Viva-voce 20% of maximum marks. SEE for practical shall be evaluated for 100 marks and scored marks shall be scaled down to 50 marks (however, based on course type, rubrics shall be decided by the examiners)</p>

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Course Code:	BEEL456	TITLE: Scilab / MATLAB for Electrical and Electronic Measurements						Faculty Name:	Dr Sathish K R				
List of Course Outcomes	Program Outcomes												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
CO-1	3	2	2	-	-	2	-	-	2	2	-	2	
CO-2	3	2	2	-	-	2	-	-	2	2	-	2	
CO-3	3	2	2	-	-	2	-	-	2	2	-	2	
CO-4	3	2	2	-	-	2	-	-	2	2	-	2	

Note: 3= Strong Contribution 2 = Average Contribution 1 = Weak Contribution - = No Contribution



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The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Course Code: BEEL456	TITLE: Scilab / MATLAB for Electrical and Electronic Measurements	Faculty Name: Dr. Sathish K R
List of Course Outcomes	Program Specific Outcome	
	PSO1	PSO2
CO-1	3	-
CO-2	3	-
CO-3	3	-
CO-4	3	-

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution “-“ = No Contribution

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