

SCHEME OF COURSE WORK

Course Details:

Course Title	: Programming through LabVIEW
Course Code	:22EE11S1
Program:	: B.Tech.
Specialization:	: Electrical and Electronics Engineering
Semester	:III
Prerequisites	: Calculus and Linear Algebra, Computer programming through C
Courses to which it is a prerequisite	: -

Course Outcomes (COs):

- CO1: Understand LabVIEW software fundamentals
 CO2: Understand modular programming aspects in LabVIEW software
 CO3: Generate digital waveforms using LabVIEW
 CO4: Analyze case structures using LabVIEW
 CO5: Integrate hardware for data acquisition.

Course Outcome Versus Program Outcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1	2	2	2	2	2	1	2	2	3	-	-	1
CO-2	2	1	3	2	2	3	3	1	2	3	2	2
CO-3	2	1	2	2	2	3	3	3	2	3	2	1
CO-4	2	2	3	1	3	2	2	3	3	3	-	-
CO-5	1	2	3	2	2	3	1	2	3	2	2	1

3 - Strongly correlated, 2 - Moderately correlated, 1- Weakly correlated, Blank - No correlation

PO1	Apply the knowledge of basic sciences and electrical and electronics engineering fundamentals to solve the problems of power systems and drives.
PO 2	Analyze power systems that efficiently generate, transmit and distribute electrical power in the context of present Information and Communications Technology.
PO 3	Design and develop electrical machines and associated controls with due considerations to societal and environmental issues.
PO 4	Design and conduct experiments, analyze and interpret experimental data for performance analysis.
PO 5	Apply appropriate simulation tools for modeling and evaluation of electrical systems.

PO 6	Apply the electrical engineering knowledge to assess the health and safety issues and their consequences.
PO 7	Demonstrate electrical engineering principles for creating solutions for sustainable development.
PO 8	Develop a techno ethical personality that help to serve the people in general and Electrical and Electronics Engineering in particular.
PO 9	Develop leadership skills and work effectively in a team to achieve project objectives.
PO10	Communicate effectively in both verbal and written form.
PO11	Understand the principles of management and finance to manage project in multi-disciplinary environments.
PO12	Pursue life-long learning as a means of enhancing the knowledge and skills.

Assessment Methods:	Assignment / Quiz / / Case Study / Mid-Test / End Exam
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Teaching-Learning and Evaluation

Week	TOPIC / CONTENTS	Course Outcomes	Sample questions	TEACHING-LEARNING STRATEGY	Assessment Method & Schedule
1	1. Add, multiply, subtract and divide two numeric inputs	CO-1	1. Develop a vi to add and subtract two numbers	LAB	Assignment
2	.2. Build a front panel/ block diagram for temperature conversion from Celsius to Fahrenheit	CO-1	2. Develop a front panel to convert temperature	LAB	Assignment
3	3. Perform Boolean operations	CO-1	3. Develop a VI to perform Boolean operations such as AND operation	LAB	Assignment
4	4. Create a VI to compute full adder logic using half adder logic as subVI. 5. Create a VI to find the decimal equivalent of a binary number using subVI.	CO-2	4. Develop a VI using subVIs	LAB	Assignment
5	6. Create a VI to evaluate a given circuit for values of current, voltage.	CO-2	5. For a given image of a circuit, develop the VI.	LAB	Assignment
6	7. Create a VI to animate a bird flying. Use the Picture Ring control to insert and display pictures to be animated	CO-3	6. Develop a VI to create animation using a sequence of images.	LAB	Assignment
7	EXAM	CO-1,2&3			Assignment
8	8. Create a global VI with a waveform chart and a stop button. Update the waveform chart using a random number generator	CO-3	7. Create a VI using random number generator.	LAB	Assignment
9	9. Build a VI that displays sine and cosine plots on a waveform chart in sweep update mode.	CO-4	8. Create a VI to display a sinusoidal waveform.		
10	10. Create a VI to calculate n cr and n pr of a given number	CO-4	9. Create a VI to validate	LAB	Assignment

	using a For Loop.		permutation and combinations practically.		
11	Create a VI to acquire voltage and current data of DC Machine/ simple electrical network using DAQ 6341 module	CO-5	Obtain voltage & current data in a given circuit using LabVIEW Data acquisition.	LAB	Assignment
12	Additional Experiments	CO-4	Build a VI to plot a circle in the XY graph using a For Loop	LAB	Assignment
13	Additional Experiments	CO-4	Create a VI to format the date and time in the required format using Format Date/Time String	LAB	Assignment
14	Additional Experiments	Co-4	Find the maximum and minimum values of the given sine waveform and the time at which the waveform is maximum and minimum	LAB	Assignment
15	Test2	Co-3,4 &5	--	--	--
16	Final Exam	All CO's	--	--	--