



**Lok Jagruti Kendra University**  
University with a Difference

# **Diploma in Electrical Engineering**



**Course Code: 025070606**  
**Project-II**

<b>Programme / Branch Name</b>		Diploma in Electrical Engineering				
<b>Course Name</b>	Project-II				<b>Course Code</b>	025070606
<b>Course Type</b>	HSSC	BSC	ESC	PCC	OEC	PEC

**Legends:** HSSC: Humanities and Social Sciences Courses  
ESC: Engineering Science Courses  
OEC: Open Elective Courses

BSC: Basic Science Courses  
PCC: Program Core Courses  
PEC: Program Elective Courses

## 1. Teaching and Evaluation Scheme

Teaching Hours / Week / Credits				Evaluation Scheme			
<b>L</b>	<b>T</b>	<b>P</b>	<b>Total Credit</b>	<b>CCE</b>	<b>SEE (Th)</b>	<b>SEE (Pr)</b>	<b>Total</b>
0	0	6	3	50	-	50	100

**Legends:** L: Lectures T: Tutorial P: Practical  
CCE: Continuous & Comprehensive Evaluation  
SEE (Th): Semester End Evaluation (Theory)  
SEE (Pr): Semester End Evaluation (Practical)

## 2. Prerequisite

The Project-II is to be selected by the students and the problem is to be identified for providing solution under the mentoring of the institute Guide/Industry mentor to develop following competencies.

- ✓ Co-creation & Interpersonal abilities
- ✓ Analysis Test and Troubleshooting skills
- ✓ Programming/simulation/ debugging skills
- ✓ PCB fabrication/soldering skills
- ✓ Modeling skill
- ✓ Documentation & Presentation skill

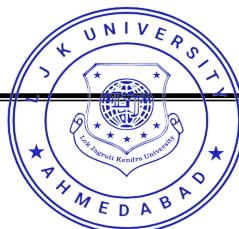
## 3. Rationale

To Provide an opportunity to the students for applying the knowledge and technical skills acquired by identifying real life problem of the industries /research organization / society as a whole and providing its innovative solution with implementation , which is economically and technologically viable.

## 4. Objectives

- ✓ Develop ability to create PCB, develop soldering skills and mounting components on PCB
- ✓ Identify component and check their ratings, Test Continuity of the wires/tracks and leads
- ✓ Develop software development skill, Simulate, Design and debugging of the circuit
- ✓ Implementation of the proposed solution, Troubleshooting hardware in final implementation
- ✓ Observe responses using CRO
- ✓ Work in team cohesively & effectively, Design and fabricate model
- ✓ Prepare project report having organized documentation.
- ✓ Prepare & deliver presentation.
- ✓ Visualize the roadmap of the further expansion

## 5. Contents



Stage No.	Stage Name	Topics	Learning Outcomes	% Weightage	Hours
1	<b>Create PCB/Write Program Codes</b>	1.1.Physical creation of Printed Circuit Board 1.2.Verification of Component ratings and specifications 1.3.Program development in Assembly/high level language	<ul style="list-style-type: none"> <li>• Build actual PCB from the PCB layout design.</li> <li>• Identify components and assure their ratings</li> <li>• Write actual code from Algorithm</li> </ul>	10%	8
2	<b>Component Mounting and soldering</b>	2.1.Continuity test for PCB tracks 2.2.Mounting and Soldering component on PCB 2.3.Execute program modules and debugging for syntax errors	<ul style="list-style-type: none"> <li>• Check all tracks for continuity</li> <li>• Mount and solder components on PCB</li> <li>• Run program modules and</li> <li>• check for syntax errors</li> </ul>	20%	8
3	<b>Software Testing and Loading</b>	3.1.Debug system modules for logical errors 3.2.Test program as a whole after linking modules to main program 3.3.Test program and load on chip/on system 3.4.Test Hardware circuit if software is not there in scope of project	<ul style="list-style-type: none"> <li>• Block Testing of software</li> <li>• Program testing</li> <li>• Loading program on chip/ on system</li> </ul>	20%	8
4	<b>Final Implementation</b>	4.1.Execute loaded program on actual hardware and observe response. 4.2.Test hardware behavior for all possible inputs to the circuit. 4.3.Troubleshoot hardware/software for unexpected/faulty behavior 4.4.Correct hardware/software and execute the program until getting desired/expected response.	<ul style="list-style-type: none"> <li>• Execute program</li> <li>• Test for various inputs</li> <li>• Troubleshoot final hardware/software</li> </ul>	20%	8



5	<b>Model design</b>	5.1. Design of model	<ul style="list-style-type: none"> <li>• Prepare model design</li> <li>• Create model</li> </ul>	20%	8
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		5.2.Create list of requirements for Implementation of model 5.3.Fabricate and construct model 5.4.Connect circuit responses to model and test model for its working	• Test model		
<b>6</b>	<b>Documentation &amp; Final Presentation</b>	6.1.Prepare project report as per LJKU guideline. 6.2.Prepare PPT and present as per schedule. 6.3.Demonstrate with model	• Prepare project report • Prepare PPT presentation • Present final project work	10%	2
		Total Hours			42

## 6. Suggested Specification Table for Evaluation Scheme

Stage No.	Stage Name	Distribution of Topics According to Bloom's Taxonomy					
		R %	U %	App %	C %	E %	An %
1	Create PCB/Write Program Codes	10	20	40	20	-	10
2	Component Mounting and soldering	-	-	30	40	10	10
3	Software Testing and Loading	-	-	30	30	-	40
4	Final Implementation	-	-	20	40	10	20
5	Model design	-	10	20	50	10	10
6	Documentation & Final Presentation	10	10	20	20	20	20

**Legends:** R-Remembering  
U- Understanding  
App- Applying  
C- Creating  
E- Evaluating  
An- Analyzing

## 7. Open Sources (Website, Video, Movie)

- 1) <http://www.electronicshub.org>
- 2) <http://www.engineersgarage.org>
- 3) <http://www.electronics-project-design.com>
- 4) <http://www.eleccircuit.com>
- 5) <http://www.circuit-projects.com>
- 6) <http://www.electronicsproject.org>

