



Gyanmanjari
Innovative University

Course Syllabus
Gyanmanjari Diploma Engineering College
Semester-4 (Diploma)

Subject: Innovative Idea Project Lab-II – DETXX14261

Type of course: Professional Core

Prerequisite: Successful completion of Innovative Idea Project Lab-I with a basic understanding of problem identification, idea selection, prototype development, testing, and project documentation.

Rationale:

The basic purpose of this subject is to extend the project developed in Innovative Idea Project Lab-I into a more complete, reliable, and usable solution. Students refine project requirements, improve the design, integrate required components, and develop an enhanced working prototype. The course emphasizes systematic implementation, testing, validation, optimization, user feedback, and professional documentation. It strengthens technical problem-solving, teamwork, decision-making, and presentation skills while encouraging students to transform an initial innovative idea into a functional project with practical value.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
CI	T	P	C	Theory Marks		Practical Marks		
				ESE	MSE	V	P	
0	0	4	2	0	0	80	20	100

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva;



Course Content:

Sr. No	Course Content
1	Project Review, Requirement Refinement, and Planning: Reviewing the problem statement, objectives, prototype, testing observations, and feedback from Project Lab-I. Identifying weaknesses, incomplete features, and opportunities for improvement. Refining functional and non-functional requirements, project scope, expected outcomes, and success criteria. Updating system design, architecture, workflow, algorithms, interfaces, or component selection as applicable. Preparing an improved development plan with task allocation, milestones, resources, risk considerations, and implementation priorities.
2	Advanced Development and System Integration: Enhancing the existing prototype into a more functional project solution. Implementing additional features, modules, interfaces, automation, or hardware/software components as applicable. Integrating individual modules and verifying data flow, communication, compatibility, and overall system operation. Applying suitable programming, development, fabrication, configuration, or design practices. Managing versions, changes, team responsibilities, development records, and technical issues during implementation.
3	Testing, Validation, and Optimization: Planning and performing systematic testing of project functions and integrated components. Preparing suitable test cases or validation criteria and comparing actual results with expected outcomes. Identifying defects, performance limitations, usability issues, and reliability concerns. Collecting user, peer, or mentor feedback and using it to improve the solution. Debugging, refining, and optimizing the project for better accuracy, efficiency, usability, stability, cost, or resource utilization as applicable. Recording test results and improvements made.
4	Project Finalization, Documentation, and Demonstration: Finalizing the project after testing and optimization. Preparing complete project documentation covering problem definition, objectives, background study, design, implementation, technologies or components used, testing, results, limitations, and future scope. Preparing user instructions or operating guidelines where applicable. Creating an effective final presentation, poster, demonstration, or project showcase. Demonstrating the working solution, explaining technical decisions, responding to questions, and evaluating the practical value and possible future enhancement of the project.



Suggested Specification table with Marks (Theory): N/A

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage %	N/A	N/A	N/A	N/A	N/A	N/A

Course Outcome:

After learning the course, the students should be able to:	
CO1	Refine project requirements and implementation plan.
CO2	Develop and integrate an improved project solution.
CO3	Test, validate, and optimize project performance.
CO4	Document and demonstrate the completed project.

Instructional Method:

The course delivery method will depend upon the requirement of content and the needs of students. The teacher, in addition to conventional teaching methods by black board, may also use any tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory.

The internal evaluation will be done on the basis of Active Learning Assignment.

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in the laboratory.

