



Gyanmanjari
Innovative University

Course Syllabus
Gyanmanjari Institute of Technology
Semester-3 (Diploma)

Subject: Innovative Idea Project Lab-I – DETXX13260

Type of course: Professional Core

Prerequisite: Basic problem-solving skills, fundamental knowledge of computers and programming, and willingness to explore real-world problems through practical activities.

Rationale:

The basic purpose of this subject is to introduce students to innovation through a structured, hands-on project experience. Students learn to observe real-world problems, generate and evaluate solution ideas, study existing approaches, and develop a basic working prototype or proof of concept. The course promotes creativity, problem-solving, teamwork, practical application of technical knowledge, documentation, and communication skills. It also builds a strong foundation for further development and refinement of the project in Innovative Idea Project Lab-II.

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	Introduction to Innovation and Problem Identification: Understanding innovation, creativity, and the purpose of project-based learning. Observing surroundings and identifying real-world problems or needs. Understanding users and stakeholders. Defining a clear problem statement, project scope, objectives, and expected outcomes. Introduction to design thinking and problem-solving approaches. Brainstorming and idea-generation techniques. Forming project teams, assigning basic roles, and considering ethical, safety, and social aspects of the proposed idea.
2	Idea Generation, Research, and Feasibility Analysis: Generating multiple solution ideas and selecting a suitable concept. Conducting basic background study using books, articles, websites, existing products, and similar solutions. Identifying limitations or gaps in existing approaches. Evaluating ideas based on usefulness, novelty, technical feasibility, cost, time, resources, and skills required. Preparing a simple project proposal containing the problem statement, objectives, proposed solution, required resources, work plan, and milestones.
3	Prototype Design and Development: Converting the selected idea into a practical solution plan. Preparing basic sketches, flowcharts, block diagrams, wireframes, algorithms, or system designs as applicable. Selecting appropriate software, hardware, tools, components, and technologies. Developing a basic prototype, model, application, program, or proof of concept. Applying iterative improvement through mentor feedback. Maintaining teamwork, task allocation, development records, and basic project documentation.
4	Testing, Documentation, and Presentation: Testing the developed prototype against defined objectives and expected outcomes. Identifying errors, limitations, and areas for improvement. Collecting basic user or mentor feedback and refining the solution. Documenting the problem, idea, design, development process, testing, results, and future scope in a concise project report. Preparing an effective presentation, poster, or demonstration. Presenting the project clearly, responding to questions, and reflecting on learning for further development in Project Lab-II.



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	Identify real-world problems and define project objectives.
CO2	Generate and evaluate innovative solution ideas.
CO3	Develop and test a basic project prototype.
CO4	Document and present the project effectively.

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.

