



Subject: Creative Design Hub Project-II - BETXX14361

Type of course: Major (Core)

Prerequisite: Creative Design Hub Project-I

Rationale: It is designed to provide students with advanced problem-solving skills, innovative thinking, and real-world project execution experience. This course builds upon the foundational knowledge from Creative Design Hub Project-I and focuses on industry-driven innovation, interdisciplinary collaboration, and professional project development.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks		
CI	T	P		Theory Marks		Practical Marks				
				ESE(E)	CA	ESE(V)	CA(I)			
0	0	4	2	0	0	80	20	100		

Legends: CI - Class Room Instructions; T - Tutorial; P - Practical; C - Credit; ESE - End Semester Examination; V - Viva; CA - Continuous Assessment;



Course Content:

Unit No	Course content
1	Advanced Project Conceptualization and Research: - Refining project scope and objectives from Project-I. Identifying industry challenges and real-world applications. Conducting an advanced literature review and feasibility study. Defining research methodology (qualitative & quantitative approaches) Ethical considerations, intellectual property rights, and patents
2	Design, Development, and Prototyping: - Implementing innovative design thinking methodologies. Advanced CAD modeling, simulation, and prototyping. Rapid prototyping (3D printing, CNC machining, IoT integration) Software development, automation, and AI integration (if applicable) Optimization, performance testing, and troubleshooting
3	Data Analysis and Project Management: - Data collection and advanced statistical analysis (MATLAB, Python, R, SPSS). Machine learning and predictive modeling (if applicable) Risk assessment, budget estimation, and resource allocation Project tracking using Agile, Scrum, and management tools (JIRA, Trello) Industry collaboration, mentorship, and real-world case studies
4	Report Writing, Presentation, and Future Scope :- Structuring a professional project report (IEEE, ASME formats). Citation and referencing tools (Mendeley, Zotero, EndNote). repairing research papers for conferences/journals. Delivering project presentations and handling defense sessions Identifying commercialization opportunities and future developments

Suggested Specification table with Marks (Theory):NA

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

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.



Course Outcome:

After learning the course, the students should be able to:	
CO1	Define project scope, research methodology, and feasibility while considering ethical and IP aspects.
CO2	Develop an innovative project using advanced design, prototyping, and optimization techniques
CO3	Apply data analysis and project management tools for effective execution and industry collaboration.
CO4	Prepare a professional report, present findings, and explore commercialization and future research.

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of 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 laboratory.

