CSE(BC) Semester: VIII	Code Subject BC –801 Major Project	L T P C 0 0 20 10
CO1	Analyze the identified real-world computing problem with clear objectives and scope.	Level 4: Analyze
CO2	Apply appropriate algorithms, programming practices, and engineering principles to design a solution.	Level 3: Apply
CO3	Implement and deploy a functional software/hardware prototype using relevant tools, platforms, and technologies.	Level 6: Create
CO4	Analyze results with metrics (e.g., performance, efficiency, usability) and validate the solution.	Level 5: Evaluate
CO5	Consider ethical, societal, and environmental implications of the computing solution.	Level 5: Evaluate

This course aims to provide full weightage to project work in a team.
The object of the final major project work & its dissertation is to enable the student to deploy project, analyze performance, security issues, ethical concerns etc. of the investigative study taken up during major project prelim during VII semester of the BTech course, either fully theoretical/practical or involving both theoretical and practical work, under the guidance of a supervisor from the department. This is expected to provide good training for the students in R&D work and technical leadership.
Participation and publication of research papers, book chapters, patent, startup, etc. to fabricate and demonstrate an innovative machine or product or prototype could be encouraged under this course.
The assignment to normally include:

1. In depth, result analysis of the project work conducted under major project prelim work.
2. Students are required to weekly report their project work to their respective mentors.
3. Deploy the implemented project work and make it available to society for further use.
4. Review ethical concern and sustainability issues and resolve it relating to the assigned topic.
5. Complete the testing of the deployed project work.
6. Present your work in Journal, conferences, books, patent publications, etc.
7. Prepare a project report in the standard format for being evaluated by the Department.
8. Final seminar presentation before a departmental committee.

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Report format and writing style	The following should be the order of contents for the report/ dissertation and should be strictly maintained- I. Cover Page II. Candidate's Declaration III. Institute Certificate IV. Acknowledgement V. Abstract VI. Notation, Naming Convention and Abbreviations VII. Table of Contents VIII. List of Figures IX. List of Tables X. Chapters: include but not limited to introduction, motivation, objectives, activity schedule chart, role of each group member, literature work, identified research gaps, research statements, problem statement, proposed methodology, technology used, algorithms, use case/ class diagram/ block diagram/ etc., result snapshots, pseudo code, innovation, feedback from stockholders, etc. XI. Conclusion and Future Work XII. Report on suggestions provided by Mentor and Its Incorporation XIII. Your Publications: Proof of published Research Papers/ Patent/ Book Chapters/ Technical Articles/ Posters/ Project Exhibition/ Technical Competitions/ Internship Certificate etc. XIV. References: Follow standard format to write the references including IEEE, APA, MLA, Chicago, etc. **General Instructions for writing reports-** The report should be written in Times New Roman font style, justify text alignment, 1.5 line spacing and black font color with A4 size page margin 2.5, 1.5, 15. 1.5 (Left, Right, Top, Bottom). ● Chapter heading with 16 pts font size, all caps, bold. ● Main Heading with 16 pts font size, bold. ● Sub Heading with 14 pts font size, bold. ● Second Sub Heading with 12 pts font size, bold, Italic. ● Paragraphs should be written with 12 pts. font style, normal text.	
Evaluation Phases	Evaluation is based on the work done, quality of report, performance in viva-voce, presentation etc. The major project will have two internal presentations and two end semester presentations that will be monitored by the Project Evaluation Committee.	
Project Evaluation Committee	A project evaluation committee is constituted that includes Head of the Department, Project Coordinator, Mentor, & External Expert to evaluate the project based on evaluation matrix.	

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Distribution of Marks	Term Work/ Lab Work/ Sessional evaluation of 150 marks will be carried out in 40% and 60% ratio by the mentor and project evaluation committee-I. Mentor analyzed the project and awarded the marks during two internal evaluations. Project evaluation committee-I will assess the project during end-semester examination. Project evaluation committee-II will assess the project during schedule of practical viva examination for 400 marks.	
Rubrics and Points for Project Evaluation	**Evaluation I (30 Marks)** ● Analysis of Complexity of the Algorithms ● Analysis of Security Issues and its Solutions ● Analysis of Testing Practices Adopted ● Analysis of Quality of Implementation (Coding Standards, Pilgrims, Desired Output, etc.) ● Analysis of Deployment Complexity **Evaluation II (30 Marks)** ● Analysis on Incorporation of Suggestions ● Analysis of Visualization of Results ● Analysis of Technical Comparation with baseline/previous systems ● Analysis of Clarity of Result Presented ● Analysis of Efficiency and Optimization **Internal Evaluation (90 Marks)** ● Analysis of Technical Novelty in Work ● Analysis of Ethical Implications & Real-world Challenges ● Analysis of Sustainability of Project ● Analysis of Demonstration & Presentation ● Analysis of Project Report (research statements, proper citations, quality of references etc.) **External Evaluation (400 Marks)** ● Analysis of Interpretation and discussion of results ● Analysis of Standard, Policies, Benchmark, etc. ● Analysis of Data Privacy, Ethical AI Use, Cybersecurity, etc. ● Analysis of Publication Quality ● Other Points by Director/ Dean/ HoD/ Coordinator/ Mentor	
Reference Books	● S. M. LaValle, “Planning algorithms”, Cambridge University Press, 2006. ● Project Management – David I Cleland – Mcgraw Hill International Edition. ● Project Management – Gopalkrishnan – Mcmillan India Ltd.	

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CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		2	2	2	2	2		2		1
CO2	2	3	2	2	1	1				1	2	
CO3	3	1	3	2	3	2			2	1	2	1
CO4	3		1	3	3	1			1		1	
CO5	2	1	1	2		2	2	3	1		2	3