

MINOR PROJECT

ENCT 354

Credit :1

Year: III

Part: II

Course Objectives:

The objective of this course is to enable students to carry out a small-scale engineering research- or product-based project in the field of computer engineering, thereby developing practical skills and hands-on experience in system design, implementation, and testing

General Procedures

Under the supervision of an assigned supervisor, students shall be organized into groups of 3–4 members. Each group shall select a project topic related to computer engineering, with emphasis on areas such as artificial intelligence and machine learning, image processing and computer vision, networks and cybersecurity, audio and natural language processing, electronic devices and embedded systems, big data technologies, Internet of Things (IoT), and web and mobile application development. Where appropriate, students may conduct field visits or collect real-world datasets for system design, implementation, and analysis. Each group shall systematically complete the project through stages including topic selection, planning, development, testing, documentation, and final presentation. Continuous guidance, monitoring, and feedback shall be provided by the supervisor throughout the duration of the course to ensure effective project development and attainment of learning outcomes.

1 Project Selection and Planning

- 1.1 Selection of minor project based on theory/practical subject studied or as per the research or industry needs
- 1.2 Problem identification and scope definition
- 1.3 Approval of project by the department

2 Literature Review and Proposal

- 2.1 Basic literature review and background study, study of existing systems in case of product based project
- 2.2 Preparation of brief project proposal including objective and methodology
- 2.3 Selection of software tools, technologies, and resources (Programming languages, frameworks, databases)

3 Design, Development and Project Management

- 3.1 Design and development (Software/hardware/hybrid system)

- 3.2 Application of programming skills, algorithms and engineering tools
- 3.3 Integration of concepts from different subjects (Computer programming, object oriented programming, software engineering, artificial intelligence, compiler design, big data technology, database management system, computer organization and architecture, computer network, electronic devices)
- 3.4 Applications of project management skills such as work division, time management, leadership

4 Implementation and Testing

- 4.1 Implementation and deployment of the project
- 4.2 Testing and validation of the developed system (Unit testing, integration testing, and user testing)
- 4.3 Performance evaluation and improvement

Timeline of the defense

- i. Proposal submission and defense: A group of students shall submit the proposal in the prescribed format to the concerned department within two weeks after the commencement of the sixth semester
- ii. Mid-term defense: The mid-term defense of the minor project shall be conducted one month prior to the final defense
- iii. Final defense: The final defense shall be conducted two weeks prior to the board examination

Evaluation

The final evaluation of the minor project shall be based on assessments from the supervisor, the proposal defense, mid-term defense, final defense, and the internal examiner. The respective weightage and total marks are presented in the following table:

Supervisor	Defense			Internal Examiner	Total Marks
	Proposal	Mid-Term	Final		
25	5	5	5	10	50