DEPARTMENT OF ELECTRICAL ENGINEERING,
INSTITUTE OF TECHNOLOGY, UNIVERSITY OF KASHMIR

IMPLEMENTATION PROCEDURE FOR B. TECH PROJECT (BATCH 2021 ONWARDS)

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AIMS AND OBJECTIVES:

As part of the university curriculum, a B. Tech student must undertake a research-oriented project in their final year of study. The final year project aims to enhance student's ability to solve technical problems through structured research studies, ultimately producing competent and well-rounded engineers. The project is a crucial component for students in several ways.

1. It allows the students to design, undertake, or conduct independent research or study related to their Degree course.
2. It will enable students to apply the theoretical concepts, techniques, and tools they have learned throughout their undergraduate program to solve real-world problems.
3. Working in teams allows students to develop teamwork, project management, communication, and leadership skills.
4. Upon completion of the Final year project, the student should be able to Identify and describe the problem and scope of the project clearly, collect, analyze, and present data into meaningful information using relevant tools, select, plan, and execute a proper methodology in problem-solving, work independently and ethically, present the results in written and oral format effectively and identify basic entrepreneurship skills in project management.

TYPES OF PROJECTS:

Projects may be one or a combination of the following categories of projects:

a) Experimental Research
b) Case study
c) Industry applications
d) Analytical and Simulation.

However, students are encouraged to undertake hardware-related projects to enhance their skills in the hardware facilities within the Department.

PROJECT MONITORING COMMITTEE (PMC):

The Department has made a project monitoring committee (PMC) that will take care of the following tasks:

a) Identification and allotment of project mentors and project titles.
b) Continuous assessment of the students related to their final year project.
c) Resolve any queries of the students related to their final year project.
d) Conduct end-term examinations of the students in the presence of an external examiner.

IMPLEMENTATION PROCEDURE:

The final-year students will adopt the following procedure to implement their project.

Phase	Timeline	Activity	Deliverables	Engagement Plan
7th Semester (PHASE I)	Week 1–2	Project topic allocation and team formation.	- Assigned project topics. - Team details submitted to PMC.	Pre-Project Slot: Orientation session with PMC and faculty.
	Week 3–6	Conduct a literature review to understand the topic, identify gaps, and formulate objectives.	- Literature review document. - Identified research gaps.	Pre-Project Slot: Students must discuss findings weekly.
	Week 7–10	Define the project objectives and prepare an initial implementation plan.	- Objectives document approved by the PMC. - High-level project plan (Gantt Chart)	Pre-Project Slot: Mentor-guided planning discussions.
	Week 11–14	Design the preliminary methodology (hardware or simulation-based).	- Draft methodology outline. - List of hardware/ software requirements (with justification).	Pre-Project Slot: Prototype demonstration/peer review.
	Week 15	Preliminary Report Submission and presentation to PMC for approval.	- Finalized problem statement, objectives, and methodology report.	Pre-Project Slot: Practice presentations with feedback.
8th Semester (PHASE II)	Week 1–2	Finalize the implementation plan based on PMC feedback.	- Updated methodology and timeline.	Weekly scheduled updates to PMC during work hours.
	Week 3–8	Implementation Phase 1: Start hardware setup or simulation work.	- Prototype or intermediate simulation results.	Regular lab attendance with logbook tracking.
	Week 9–12	Implementation Phase 2: Refine the project and troubleshoot issues.	- Improved prototype/simulation results. - Documented challenges and solutions.	Hands-on work in department labs for hardware/simulation.
	Week 13–14	Conduct final testing and validation of the project.	- Final functional prototype/simulation validated with test results.	PMC and faculty-assisted testing sessions.
	Week 15–16	Prepare the final report and presentation.	- Final technical report. - Working prototype/simulation. - Presentation slides.	Mock presentations in the department for peer/faculty review.
	End of 8th Sem	Final project demonstration and viva before PMC and external examiners.	- Demonstration and oral defense.	Faculty-supervised dry run of project demonstrations.

Key Guidelines for 7th Semester "Pre-Project Slot":

a) Weekly Meetings: Students must meet their assigned project mentors during the pre-project slot to review progress, seek feedback, and stay aligned with objectives.
b) Attendance: Students must attend the Department and utilize the pre-project slot for hands-on activities, literature review, or project discussions.
c) Mentor Supervision: Faculty members assigned to the pre-project slot will ensure students are actively engaged and progressing.
d) Deliverables and Deadlines: Weekly progress reports or short presentations are required to track engagement and project milestones.
e) Department Work Requirement: Students must work on projects in the Department laboratory to develop practical skills and collaborate with peers and mentors.

Key Guidelines for the 8th Semester Project Slot:

a) Project Finalization:
   - Begin the semester by revisiting and refining the methodology and objectives formulated in the 7th semester.
   - Obtain approval for any updates to the project scope from the Project Monitoring Committee (PMC).
b) Timely Progress Updates:
   - Students must adhere to the weekly progress updates with their assigned mentors or PMC members.
   - Maintain a logbook to document daily activities, challenges, and solutions.
c) Mandatory Lab Attendance:
   - All students must work on their projects in the department's designated labs to enhance hands-on experience.
   - Lab sessions are mandatory, and work-from-home is discouraged except in extraordinary cases with PMC approval.
d) Hardware or Simulation Setup:
   - Students working on hardware projects must complete all initial setups by the 4th week of the semester.
   - Those pursuing simulation projects should validate their initial models using test cases and share intermediate results.
e) Resource Management:
   - Students must use department hardware wherever feasible.
   - If external hardware/software is required, ensure cost-effectiveness and obtain PMC approval before purchase.

SUPERVISORY SYSTEM

Project Title Registration

Before project registration, the committee will provide a list of available project titles. Students may choose a project from this list or propose a new one. It is recommended that students discuss their options with their respective mentors to reach a mutual agreement. Students must complete the Final Year Project Title Registration Form, which should be signed by their mentor. If a student fails to reserve a title and mentor, the committee will assign one.

For the project proposal, students must submit a Project Proposal Form to their mentor before the projects commence. This form must include a title, an abstract, the objectives or goals, the scope of the project, a literature review, and the proposed methodology. The initial proposal is due before the presentation seminar for panel assessment. After the presentation, students must revise and resubmit the proposal, incorporating the comments from the panel. The final proposal will be evaluated by both the mentor and the panel.

Student Declaration

By signing the Student Declaration Form, it is agreed that all results, designs, or patents from the student project are under the University of Kashmir copyright. However, the University may consider sharing the right with third parties.

Logbook

Students will use a logbook to record all findings, data, and factual information worthwhile to their project. In the logbook assessment, students are evaluated based on the effectiveness of meetings with the mentor and the relevance of contents in the logbook. Students may use any appropriate book or file folder as a working logbook. The front pages of your logbook must have i) Logbook Cover Page, ii) Guidelines for the Implementation of the Final Year Project, i.e., this guideline, iii) Final Year Project Student Calendar, and iv) Mentor remarks.

PROGRESS PRESENTATIONS

Students will be asked to make brief (10-minute) presentations to show their progress presentations to the committee in the presence of their mentors. The presentations will be uploaded to the department's Google Drive a day before the presentation. The presentation slideshow should cover the following:

a) Introduction and overview of the project.
b) Problem statement.
c) Project objectives and scope.

d) Literature survey and theory.
e) Methodology.
f) References.

During the presentation, students are evaluated in various aspects of knowledge. These may include communication skills, presentation contents, the ability to answer any question, the readiness to face critics and comments, and the ability to interact with the audience.

ASSESSMENT METHODS

Examination Panel	**Presentation**	**Project Progress**	**Total**
	50	50	100
Mentor	**Log Book**	**Project Proposal**	**Total**
	35	65	100

PRESENTATIONS AND REPORT WRITING

The Department strongly encourages the students to use open-source LaTeX software to create project reports and the BEAMER package to make all the presentations. The students can get the LaTeX templates for reports and presentations on the Departmental webpage.

RESPONSIBILITIES

Responsibilities of the Student

a) The student should take responsibility for the design, methodology, and presentation of the project.
b) It is the responsibility of the student to edit their work and ensure all information is accurate and complete.
c) The student is responsible for presenting their research proposal to the Faculty for approval before embarking on the data collection.
d) Students are reminded that their research project must be their work, and all quotations from other sources, whether published or unpublished, must be properly acknowledged.
e) Plagiarism is a very serious offense and, where proven against a student, may result in disqualification from the examination of the project.
f) The student should submit material in sufficient time to allow for comment and discussion before proceeding to the next stage.
g) The student takes responsibility for maintaining regular contact with the mentor.
h) The student should participate in the progress reports to demonstrate their commitment to completing the project on time.

i) The student takes responsibility for incorporating the mentor's comments and feedback into their work and seeking clarification where necessary.
j) Students should keep track of their projects to ensure they progress according to the time frame. Where deviations are observed, they should be brought to the mentor's attention as soon as possible.
k) Any problems encountered during the project should be brought to the mentor's attention as soon as possible after they occur so that remedial action can be taken immediately.

Responsibility of the Mentor

a) Discuss and reach an agreement with the student on details of the supervisory arrangements, including a regular meeting schedule.
b) Ensure maintenance of the meeting schedule. Discuss what should be done if someone cannot attend a scheduled meeting. Also, discuss access to the mentor outside scheduled meetings.
c) Ensure that the student is familiar with the policies relating to their studies.
d) Assist the students in developing a realistic program of study to ensure they complete their project within the required time.
e) Monitor the student's Progress. If the student frequently cancels meetings, it could be an indication of problems they may be experiencing. Contact the student to indicate your concern and set a new meeting time. Insist on seeing the student and emphasize at this meeting that you must communicate regularly. It is worthwhile to reiterate that the purpose of the meeting is to help the student progress and that lack of progress is a cause for mutual concern, which is not alleviated by avoiding discussion.
f) Keep written documentation about decisions and follow-up activities that stem from each meeting.
g) Take up the issue of unsatisfactory progress with the PMC to determine what action should be taken.