# Final Year Project Guidelines

*This handbook contains guidelines for the conception, preparation, implementation, completion and finally the assessment of Final Year Projects*

**BACHELOR**

**IN**

**COMPUTER ENGINEERING**

By

**FYP Committee**

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UNIVERSITY OF ENGINEERING & TECHNOLOGY

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Table 1: History of Revisions

# 1   Introduction

The main objective of the final year project is to provide Computer Engineering students with design experience in a setting which is similar to a real-life scenario encountered in society or industry. Two to four students form groups with a faculty member who acts as the Project supervisor during their final year of study. The projects are spread over the last two semesters of study at the university. Students present their progress in front of internal committee during both semesters. The final demonstration and presentations are made before a panel of experts during the last weeks of the final semester. Student groups submit a written report in specified format on completion of their project.

# 2   Project Learning Outcomes

Upon successful completion of the project, the student is expected to be able to:

- Convert an open-ended problem statement into a statement of work or a set of design specifications

- Apply knowledge of mathematics, science and engineering

- Identify, formulate, research through relevant literature review, and solve engineering problems reaching substantiated conclusions

- Decompose design problem into subtasks, prioritizes subtasks, and establishes a time table and milestones by which progress may be evaluated

- Select and apply appropriate models or simulations of the real world and analyzes output of models/simulations to provide information for design decisions

- Perform feasibility analysis and uses results to choose candidate solutions and evaluates quality of solutions to select the best one

- Show impact of engineering solutions in a societal context and to be able to respond effectively to the needs for sustainable development

- Collaborate with team members of diverse background and perspectives to achieve a common goal

- Practice professional, ethical and moral responsibility in the workplace

- Produce usable documents of record regarding the design process and design state

- Communicate effectively

- Recognize the need for, and have the ability to engage in life-long learning

# 3   Projects Allocation

Projects are allocated to the students at the end of sixth semester at the department. The process of allocation of topics, supervisors and management of project examination schedule is the responsibility of the Final Year Project (FYP) Committee and then these projects are finalized in BOS for title allocation. A FYP guideline course is also introduced in 7th Semester with name FYP-I for the guidance of student so they get to know the different aspects of their FYP that includes commercialization as well.

# 4   Project Evaluation

FYP is presented to the internal and external examiners by all the groups of the department on scheduled dates for evaluation purposes. Two presentations are scheduled over the time line of the project. The first is the Interim evaluation at the end of 7th semester and the second is the final evaluation at the end of 8th semester. These presentations are preceded by help/practice sessions managed by the coordinating members of FYP committee. The student groups also asked to present their work orally through power point slides with the FYP working demonstration. Following Table 2. explains the marks distribution with weightage in details.

| Category | Weightage |
|---|---|
| **Proposal Defense** | **5% Supervisor 5% FYP Committee** |
| **Mid Progress** | **10 % External Examiner 10% Supervisor** |
| **Final Defense** | **25 % External Examiner 25% Supervisor** |
| **Open House and Thesis** | **10 % Supervisor 10% FYP Committee** |
| **Total** | **100 %** |

Table 2: Marks Distribution with Milestones

## 4.1 Proposal Defense

The students must choose a project subject and define the objectives of the project under the supervision of a faculty member, and prepare the project proposal. The format of FYP proposal will be provided to students by supervisors/committee.

## 4.2 Mid-Progress

After proposal defense, next FYP activity is Mid-Progress presentation. Students have to present their work and progress.

## 4.3 Final Defense

Final Defense is the final activity for FYP students, which is evaluated by Advisor Co-advisors, externals and evaluation committee. TThe format of mid progress report will be shared by FYP Committee. Rubrics given by SRS should be followed.

## 4.4 Open House

Open house is arranged for final exhibition of final year projects. Most of the people from industry visits FYP stalls and judges are allocated to each FYP for evaluation.

# 5 Guidelines for Project Supervision

Following rules should be taken under considerations during project supervision.

- Each group will work under the supervision of an assigned supervisor throughout the final year (semester 7 8).

- Students are recommended to meet with their supervisor at least once a week. The students are expected to discuss their progress with their supervisors in these weekly meetings. Depending on students requirements and the supervisors availability, supervisors may also arrange additional meetings (physical/online) as requested.

- Supervisors might also arrange communication with student groups via email or other means for the purpose of advising project groups. FYP committee will support checking the progress with online google forms or some other online system.

- It is the responsibility of the supervisor to inform his students with this handbook and all the included instructions and regulations.

## 5.1 Tasks expected from supervisors

During these meetings supervisors are expected to:

- Orientation

  - To provide FYP Outlines / Objectives

  - Discuss project expectations and the plan with the group

  - To share previous practice experience, research, skills and expertise

  - Assign /Recommend related literature

- Provide Knowledge

  - Give training sessions on the respective research area and tell them what they need to know

  - To clarify students queries effectively as needed

– To make students aware of professional ethics and standards

  – To advise students on how to deal effectively as a team while working under pressure, remaining optimistic and persistent, and how to meet milestone deadlines

- Access

  – To monitor the project progress on a weekly/fortnightly basis Assess

  – To ensure students are completing outlined project deliverable

  – To grade students work (at individual/group level) at the end of each semester

# 6  FYP General Schedule

Table 3. gives the two semester long schedule for FYP project.

| Phase | Week | Duration | Semester |
|---|---|---|---|
| Project & Committee Selection | Week 1 & 2 | 2 Weeks | 7th |
| Proposal Defense | Week 3 | 1 Week | 7th |
| First Progress Report | Week 9 | 1 Week | 7th |
| Mid Progress Report | Week 16 | 1 Week | 7th |
| First Defense | Week 8 | 1 Week | 8th |
| Thesis Submission | Week 12 | 1 Week | 8th |
| Open House | Week 15 | 1 Week | 8th |

Table 3: Two Semester long Schedule of FYP

# 7  Format and Role of FYP Committee

- The committee comprises a) Convener b) Secretary c) members for coordination as assigned by chairperson.

- Each project adviser is also a part of FYP committee to ensure execution. The job of FYP committee is:

  - To guide students in selection of project.

  - To maintain a record of student project progress starting from allocation to completion.

  - To ensure that progress as per the scheduled time lines.

  - To arrange training session and course topics on FYP quality parameters and report writing such as commercialization, sustainability and structure of report, citation, references etc.

  - To arrange interim evaluation/presentation during both semesters.

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  - To arrange final presentations at the end of 8th semester.

  - To finalize the student results.

# 8    Format of FYP Proposals

The following FYP proposal format is to be followed in consultation with the students advisor:

1. Introduction

2. Problem statement and Objectives

3. Proposed Methodology/System

4. Design (SW/HW Modules)

5. Socio-Economic Benefits

6. Business/Marketing Model (optional)

7. Required Hardware  Software

8. Expected Results/outcome

9. References

10. Proposed Project Plan/Time-line

Note: Latex format is preferable.

# 9 Project Development Life Cycle

The supervisors will guide the group through different steps in the software engineering life cycle and describe, discuss, assign, receive and review the corresponding outcomes/artifacts at the end of each step as described in the Table 4. During the Project Proposal, students

| Inception | Problem Statement |
|---|---|
| Feasibility Study | Feasibility Report |
| Requirement Gathering | Survey Report, SRS |
| System Modeling | Physical Models, Formal Software Models, ERD, DFD, Schema |
| System Design | Hardware Modules and Software Modules Designs |
| Implementation | Working System and Fusion of HW/SW |
| Testing | Test Cases |
| Deployment | Deliverable, Installation in Client Environment |
| Acceptance | Acceptance from Client |

Table 4: FYP Lifecycle

undertake the initial phases of project planning, selection, analysis and designing phases. In the Project Implementation, students proceed with the implementation phase of their proposed project

# 10 Team Leadership

Every graduation project group is assigned with a team leader who is essentially a cross-functional key player working within the project group. It is extremely important to get the right student within each group fit for the role of team leader which is crucial for the success of any project. Team leader should work very closely with the supervisor with the following, but not limited to, the primary tasks:

- Provide input on the performance of team members

- Resolve any conflicts within group members and maintain healthy group dynamics

- Inform supervisor of any task delays and meeting hours change requests from students

- Ensure rest of the group understands their roles and responsibilities on the assigned tasks;

- Coordinate with internal or external project stakeholders on behalf of the team

- Provide weekly status report  completed and signed by each team member as per the schedule

# 11 Group Responsibility

During the Final Year Project, student groups are responsible for the following:

- Agree with their assigned supervisors on the topic

- Perform weekly tasks, assigned by the supervisor (or distributed by the team leader)

- Discuss problems and seek advice from the supervisor in order to accomplish the assign tasks.

- Provide supervisor weekly status reports and get his/her feedback

- Apply recommendations to refine the previous task

- Finalize the project proposal and implementation, incorporating all the feedbacks and comments provided by the supervisor and evaluators.

- Conduct presentation at the end of each semester and defend project to the evaluation panel

# 12    Late submissions

It is the responsibility of each group to ensure they complete the milestones of each semester and submit deliverable by the cutoff submission date. No project will be accepted after the cutoff date and necessary actions will be taken as per the supervisor and the evaluation committee decision policy.

# 13    Plagiarism

Each project must be the original work of student groups. At the end of each semester, students will be required to present their project proposal and implementation outcomes as per the provided deliverable guidelines and the original work undertaken throughout each semester. In the project report, for instance, if students have taken ideas or referencing other work as part of the proposed project, then, it must be cited and reference should be clearly specified. Same is the case while implementing the proposed solution. For instance, if students are developing project using 3rd party tools and libraries, it must be referenced and relevant comments and notes must be highlighted and will not be regarded as part of the original work of student groups. Hence, it is extremely important to note that it is the responsibility of students to ensure they are not plagiarizing knowingly or unknowingly. In order to prevent plagiarism related issues, students are encouraged to get familiar with plagiarism guidelines. In order to prevent plagiarism related issues during implementation, students are strongly encouraged to get familiar with software plagiarism issues. If students are found plagiarizing either in project proposal report or in the project implementation solution/code, immediate strict action will be taken as per the university policy.

# 14 Final Year Project Report Format

The FYP report is written in the specified format outlined below:

1. Cover page

2. Table of contents

3. List of Figures

4. List of Tables

5. Abstract of less than 1 page

6. Main text which will include

   (a) The problem statement

   (b) Methodology used in building the solution

   (c) Preliminary results and analysis of results

   (d) Description of the final design or solution asset

   (e) Merits of the proposed solution (economical, sustainability, etc)

7. Conclusions

8. References

9. Appendix