# FINAL YEAR DESIGN PROJECT POLICIES AND PROCEDURES

Department of Computer Science and Engineering
United International University

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FINAL YEAR DESIGN PROJECT COMMITTEE

# 1. FINAL YEAR DESIGN PROJECT REQUIREMENTS

## 1.1 Brief Description

The Final Year Design Project (FYDP) offers students an opportunity to undertake a project which students would find both challenging and interesting. This FYDP project must be done in **three parts: FYDP-I, FYDP-II, FYDP-III**. Only in special circumstances, exceptions may be allowed. Students will select a supervisor who will offer guidance at which students will meet on a weekly or monthly basis (or, as needed). Emails or other online communications between supervisor and students are also fine. The choice of a topic is from a list of project titles that may be published by the appointed supervisors or based on the mutual agreement between the supervisor and the supervisee students. Each supervisor will supervise his/her own project topics. The supervisor will guide the students and the respective supervisor will advise on how best to complete his or her project. For a particular semester, under normal conditions, each supervisor can usually take a maximum of 3 (three) new FYDP-I groups (recommended limit) to supervise. If a supervisor wishes, he/she can also take 1 (one) more group to jointly supervise or co-supervise with another supervisor. A co-supervision task is considered a half-load of supervision. Again, a students' group for FYDP can have a maximum of 5 students and minimum of 3 students.

After deciding on the project title and a supervisor, the students have to register for and attend FYDP-I course (in any assigned section) where a Course Teacher will provide general guidance for planning and developing the project. **It should be noted that the *Supervisor* and *Course Teacher* are different individuals who would guide the students.** Specifically, these terms are clarified below:

- **Supervisor or Mentor:** A faculty member who supervises the FYDP for the supervised students for all the three parts of FYDP (I, II, and III). If needed, co-supervisor(s) can be taken, who can be another faculty member (not the course teacher) or a person working in the industry/company.

- **Course Teacher:** A faculty member who conducts the FYDP-I course. After FYDP-I, no formal class will be conducted by the course teacher but the students who attended a FYDP-I section are encouraged to keep contact with the course teacher because the course teacher may have views on their project that can help in addition to the direct guidance and supervision of the supervisor. It may be mentioned that a course teacher may not have expertise or interest in every topic the groups in his/her FYDP-I section work on and hence, his/her guidance is simply considered the supporting guidance, not to interfere with the work done between supervisor/mentor and the supervised students as they agreed to do a work.

**** Important Conditions:**

- Here, the terms **Supervisor** and **Mentor** can be used interchangeably.
- A **Course Teacher** of a section **CANNOT** be the **Supervisor/Mentor** for any group attending the same section's classes. This is crucial for the checks and balances of scores for the FYDP-I and other parts.

The Final Year Design Project plays an important role in ensuring a student's enrollment in the job market. Normally, in all interviews, the interviewer will be interested in knowing more about the project.

### 1.2 Project Objectives

The objective of a Final Year Design Project (FYDP) is to assist the student's professional integration and to increase his or her experience in research and development. Therefore, heavy concentration in producing a product and measuring relevant data is important to assess the student's ability to do research as well as to gain some industry experience in creating a product. The student is expected to complete a reasonably large project which integrates a number of issues that he or she is certainly aware of but includes some others that will require some research and study. In short, the time length used for FYDP should be justified - which would be three (3) semesters' duration.

### 1.3 Project Duration

The project is to be completed within the span of 3 semesters (FYDP I, FYDP-II, FYDP-III).

### 1.4 Scope of the Project

The projects should be result-oriented and should follow a proper methodology in measuring certain aspects of the project's performance, outcome or impact.

There are SEVERAL major project areas that students can choose from:

1. AI (Artificial Intelligence) and Robotics
2. Software and HAI/HCI (Human-AI/Human–Computer Interaction)
3. Network and IoT (Internet of Things)
4. Data Science
5. Cyber-Security

### 1.5 Project Code and Key Information

**Course Codes:** CSE 4000A, CSE 4000B, CSE 4000C
CSE 4000A (FYDP-I) is a pre-requisite of CSE 4000B (FYDP-II) and CSE4000C (FYDP-III)

**Total Credit Hours:** 2.0+2.0+2.0 = 6.0
***** In each course, a student must get at least a C grade!***

When the supervisors' proposed topics or domain expertise are announced, the students should form their groups. Each group needs to usually collect the FYDP-I registration form from the department where chosen supervisor and/or course teacher names can be mentioned. The FYDP registration process will be handled by the department according to the policy set by the department and this registration process is expected to be a separate one than the regular other

course registration processes. The supervisor's agreement is crucial in this case and students are advised to contact the supervisor with their project plans ahead of time.

### 1.6 Weekly Report

While attending FYDP-I course conducted by the Course Teacher, each student is required to submit a "Weekly Report" or "Weekly Journal" to the Course Teacher (signed by the mentor). The purpose of this report is to provide information on the amount of work that the students have completed (based on his/their plan and Gantt chart), to guide students in the right path and to monitor progress of the project. Also, it can note down important learning steps and keep a record for the entire FYDP-I course period. **All the submitted weekly reports will be collated as a single report book at the end of the semester.**

***What is a Weekly Report/Weekly Journal and why?***

This is a reflective document that provides personal, thoughtful analysis and grasp of various concepts of individual participation/progress. This is to articulate what a student has learnt as a leadership major and why a student does the things that he/she does. At the end of the semester, a full, aggregated collection of entries is to be submitted to the Course Teacher. In each week, some sample questions that can be answered by the students are:

- What did you learn during this interaction?
- What did you contribute?
- Independent research/readings you have done to support the project.
- New technological skills you need to develop your plans.
- What happened when you tried something new?
- Why did you succeed or fail?

A student has to be honest in the report/journal entries. If a student has not spent any time or given any thought to the course/project during the week, then that is what he/she should record in the weekly report/weekly journal.

### 1.7 Final Year Design Project Report, Responsibilities and Expectations

A student is required to submit a **FINAL FYDP report** at the end of **FYDP-III**. Failure to submit the **FINAL report** may lead to Fail ('F' grade) in this course.

For CO (Course Outcome) and PO (Program Outcome) statements and details of rubrics, you may kindly download the file (***FYDP-I-II-III_OBE_FINAL.pdf***) from here:
https://drive.google.com/file/d/1X2HrydJe_5rqCTdbQe0YqCTURmf7fb75/view?usp=sharing

**Responsibilities of the course teacher in FYDP I**

1 A Course teacher is expected to explain the attributes of complex engineering problems and related knowledge profiles according to the Washington Accord. The course teacher will guide the students to justify their problem as a complex engineering problem through presentations and question and answer sessions.

2. The course teacher will share a sample template of project management schedule structure and will ensure that students are following the schedule and in case of deviation, updated accordingly.

**Expectations from students during FYDP-I Interview session**

1. Students should be able to justify that their problem is a complex engineering problem.
2. Students should actively participate in their project and work as a team. A group leader is to be selected who should lead the group as the project advances towards the project goals.

Before the final report, for the first two parts: FYDP-I and FYDP-II, the reports need to be prepared up to a certain portion/chapter. In general, the FINAL report should contain these parts (*this should be considered as a general guideline and specific section/subsection may be given title as required or agreed upon by the supervisor and the students*):

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**Title of the Project**
**Abstract**
**Acknowledgements**
**List of Figures**
**List of Tables**
**1 Introduction**
- 1.1 Project Overview
- 1.2 Motivation
- 1.3 Objectives
- 1.4 Methodology
- 1.5 Project Outcome
- 1.6 Organization of the Report

**2 Background**
- 2.1 Preliminaries
- 2.2 Literature Review
  - 2.2.1 Similar Applications
  - 2.2.2 Related Research
- 2.3 Gap Analysis
- 2.4 Summary

**3 Project Design**
- 3.1 Requirement Analysis
  - 3.1.1 Functional and Nonfunctional Requirements
  - 3.1.2 Context Diagram
  - 3.1.3 Data Flow Diagram Level 1
  - 3.1.4 UI Design
- 3.2 Detailed Methodology and Design
- 3.3 Project Plan
- 3.4 Task Allocation

3.5 Summary

**4 Implementation and Results**

4.1 Environment Setup
4.2 Testing and Evaluation
4.3 Results and Discussion
4.4 Summary

**5 Standards and Design Constraints**

5.1 Compliance with the Standards
5.1.1 Software Standards
5.1.2 Hardware Standards
5.1.3 Communication Standards
5.2 Design Constraints
5.2.1 Economic Constraint
5.2.2 Environmental Constraint
5.2.3 Ethical Constraint
5.2.4 Health and Safety Constraint
5.2.5 Social Constraint
5.2.6 Political Constraint
5.2.7 Sustainability
5.3 Cost Analysis
5.4 Complex Engineering Problem
5.4.1 Complex Problem Solving
5.4.2 Engineering Activities
5.5 Summary

**6 Conclusion**

6.1 Summary
6.2 Limitation
6.3 Future Work

**References**

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**It should be noted that this is a general guideline and specific section or subsection headers can be different from project to project (as applicable).** However, it is generally advisable to maintain the Chapter Headers/Titles as are shown in this prescribed structure.

At the end of FYDP-I's completion, a group must produce an "**FYDP-I Report**" which should contain at least first three (3) Chapters and some extra portions, Or, at least Chapter 1, Chapter 2, parts of Chapter 3 (Sections 3.1, 3.3, 3.4), and parts of Chapter 5 (Sections 5,1, 5.3). The produced report (which is called 'FYDP-I Report') can be simply in *Spiral Binding* because this is not the Final report.

After completion of FYDP-II, the students should produce the "**FYDP-II Report**". This report will be with more items and chapters but not the final report.

After completion of FYDP-III, the **FINAL Report** must be submitted in a hard-binding.

Specific template for writing the FYDP FINAL Report can be obtained from the FYDP-I's Course Teacher during the class lectures, in LaTex format. However, if one follows the same format with an MS-Office file, that is also fine as long as the template and styles are maintained.

**A ZIP file for the LaTex format can be downloaded from here:**
https://drive.google.com/file/d/1UW4DAc3Kf8_O6IJj1rnYoAuCaWkYeJxw/view?usp=sharing

The FINAL Report should be printed with at least **3 copies**:

- One to be submitted to the Supervisor/Mentor,
- One is for the Examiner or Course Teacher (other than the Supervisor/Mentor), and
- One should be for the department.

### 1.8 Final Year Design Project Assessments

FYDP is assessed in three parts. Here, the marks distribution and assessment methods are mentioned.

1. FINAL grading will be done by the respective supervisors.
2. Recommended distribution of Marks and Presentation:

***** For item-wise detailed marks distribution and rubrics, kindly check the FYDP-I, II, III_OBE.docx.*** (URL was mentioned before)

**FYDP-I (CSE 4000A)**

The students are required to present their project's progress at the end of FYDP-I. This presentation is called **FYDP-I Presentation**. Marks distribution will be like:

- **Total Marks:** 100
- **Supervisor or Mentor:** 40 Marks
- **Teacher or Examiner:** 60 Marks

**FYDP-II (CSE 4000B)**

The students are required to present their project's progress at the end of FYDP-II. This presentation is called **FYDP-II Presentation**. Marks distribution will be like:

- **Total Marks:** 100
- **Supervisor or Mentor:** 35 Marks
- **Teacher or Examiner:** 65 Marks

**FYDP-III (CSE 4000C)**

The students are required to present their project's outcome at the end of FYDP-III. This is the **Final presentation**. As for Marks Distribution:

- **Total Marks:** 100
- **Supervisor or Mentor:** 30 Marks
- **Teacher or Examiner:** 70 Marks

*** The **Teacher** can also be called the **Examiner** or a different person can be engaged during this presentation as an Examiner.*

## 2. PRE-REQUISITES AND PROCEDURES

### 2.1 Pre-requisites

2.1.1 The Final Year Design Project is restricted to 4th year students only. Therefore, at least 85 Credits or above must be completed before taking FYDP-I (i.e., within the previous semester, for the semester when FYDP-I is to be taken).

2.1.2 In addition, students must also have completed the core course that is directly related to the project area.

### 2.2 Procedures to Participate in the Project

The eligible students may form their groups and contact any potential supervisor/mentor. Based on the agreement among them, a topic can be chosen and then the FYDP can be enrolled under that supervisor/mentor. It is generally not expected that the department assigns a supervisor/mentor for a students' group unless there is no other option and all other supervisors/mentors are occupied with their maximum allowed quota of groups (as mentioned before - see please subsection 1.1).

### 2.3 Plagiarism and Cheating in the Report

#### *2.3.1 What is Plagiarism and Why is it Important?*

Plagiarism is using others' ideas and words without clearly acknowledging the source of that information. This is considered a serious academic offense. Plagiarized things published or done at a stage of an early career may also jeopardize someone's career at a later stage.

#### *2.3.2 Suspected or Proven Plagiarism*

If a student or group is caught or suspected of doing the above, a detailed and thorough investigation will be conducted by the department. Those caught with plagiarism may be penalized heavily and shall not be able to pass the course.

#### *2.3.3 AI-Generated Text*

The students are strongly advised not to use any AI-tool for text generation. Also, sites that summarize research papers or documents must not be used. Read things on your own and grasp other papers' ideas. AI-powered Grammar checkers like Grammarly, Quillbot, etc. are

sometimes used for business and industry documents but for FYDP reports (for academic works or reports), it is suggested not using those. Even if used for English language correction and polishing, the authors must work on the rephrasing and reducing the similarity percentage to 5% or less. AI-generated text and use of word spinners are prohibited to be used by most of the top publishers. Even if used, because of the knowledge deficiency in English language, there must be a clear declaration for that (why and how an AI-powered tool was used) and the similarity percentage must not exceed at best 5%.

### 2.4 Rechecking of the FYDP Grade

Write a formal letter to the Head of Department (HoD) or ask for the relevant form from the department office. A student may be unsatisfied with the grade given after due calculations. Re-checking does not guarantee improvement but rather the new grade can be of higher or lower than the one previously obtained by the respective student.

## NOTES ON THE WORK STRUCTURE:

- The supervisors and students will be in regular contact throughout the semester. The course teacher is to provide general guidance for FYDP-I and if needed, for other parts of FYDP.
- The teacher may not have relevant expertise or interest in a particular project and hence, this issue should be considered while consulting with the course teacher. The supervisor/mentor is the main person to actually supervise the students throughout the process.

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