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| UNITED INTERNATIONAL UNIVERSITY Department of Computer Science and Engineering (CSE) Course Syllabus | | |
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| **1** | **Course Title** | Final Year Design Project (FYDP) |
| **2** | **Course Code** | CSE 400 |
| **3** | **Trimester and Year** | Fall 2018 |
| **4** | **Pre-requisites** |  |
| **5** | **Credit Hours** | 2.0 |
| **6** | **Section** | A |
| **7** | **Class Hours** | Sunday 8:30 am – 11:10 am |
| **8** | **Class Room** | Computer Lab 4 |
| **9** | **Instructor’s Name** | Abu Shafin Mohammad Mahdee Jameel |
| **10** | **Email** | mahdee@cse.uiu.ac.bd |
| **11** | **Office** | Room 418 |
| **12** | **Course Contents (approved by UGC)** | All candidates are required to undertake supervised study and research culminating in a Thesis/Project in their field of specialization. |
| **13** | **Course**  **Outcomes (COs)** | |  |  | | --- | --- | | **COs** | **Description** | | CO1 | an ability to design, implement, and evaluate a computer-based system, process, component, or program to translate a real-life problem to an engineering solution | | CO2 | an ability to function effectively in a team | | CO3 | an ability to analyze a problem, and identify, formulate and use the project management skill, appropriate computing and engineering tools for obtaining its solution | | CO4 | an understanding to assess professional, ethical, environmental, and social impacts and responsibilities of the design project | | CO5 | an ability to present design project results through written technical documents and oral presentations | |
| **14** | **Mapping of COs and Program outcomes** | |
|  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **COs** | **Program Outcomes(POs)**  **S = Strong, M = Medium and W = Week** | | | | | | | | | | | | | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | | **CO1** | C | C | C | C |  |  |  |  |  |  |  |  | | **CO2** |  |  |  |  |  |  |  |  | A |  |  |  | | **CO3** |  |  |  | C | P |  |  |  |  |  | C | C | | **CO4** |  |  |  |  |  | C | C | C |  |  |  |  | | **CO5** |  |  |  |  |  |  |  |  | A | A |  |  | | |

**Introduction**

Final Year Design Project (FYDP) is a senior design project work that takes place during the final year of 4 years engineering curriculum of B.Sc. in Computer Science Engineering. It spans two trimesters with the following course breakdown:

1. CSE 400-A, FYDP Part-I, 2.0 Credit
2. CSE 400-B, FYDP Part-II, 2.0 Credit

FYDP must reflect culminating activities of the student where s/he would showcase knowledge, skills and attitudes learned in the earlier courses.

**Eligibility and Procedure**

A student will be eligible to take CSE 400-A if s/he completes minimum 90 credit hours of study. The students must form a group during the 2nd week of the course CSE 400-A. A group consists of four members. The group would remain the same for the courses CSE 400-A and CSE 400-B. In the subsequent trimester, the students will take CSE 400-B. Therefore, CSE 400-A is the prerequisite of CSE 400-B. Although, the completion of the FYDP is a continuous journey for two trimesters, the student's grade will be based on his/her performance and demonstration in these two courses, separately. This will ensure that the students remain to be serious and committed from the inception when they embark on taking CSE 400-A, and follow up with supporting and implementation activities in CSE 400-B.

**Course Teacher and Mentor**

The faculty member who is conducting CSE 400-A in a trimester will be known is the Course Teacher for the students who enrolled CSE 400-A in that trimester.

The Mentor will be the faculty member who will supervise the FYDP. A mentor will work as a guide and advise the students towards the successful completion of the project. However, it is emphasized that the students in the group will solely be responsible for the successful completion of the capstone project.

Note that for a group of students the same faculty member cannot be the Course Teacher and the Mentor at the same time.

**Selection of a Mentor**

The students' group should talk to their desired faculty member(s) who would be interested to become the mentor of the group. After the faculty member agrees preliminary to become the mentor, the group should fill up a form collecting the signature of the faculty member providing the respective consent.

After the submission of the form, the department will finally assign the mentor for a particular group after checking the availability of the mentor.

**External Mentor**

The students can also approach an external mentor with the approval of the department. If the department agrees on the allocation of an external mentor after the due process through the application from a project group, it will also assign an internal mentor to oversee the quality of the project. With the presence of the external mentor, the load of the internal mentor will be considered half of the full-time mentorship.

**Choosing a topic for FYDP**

The topic of FYDP should reflect the passion and profound interest of the group of students. The students should choose the topic that is realistic and has practical value and applications. The project idea may come from the experience, thoughts and learning of the students during their earlier years of studies. The students are also highly encouraged to survey and analyze societal and industrial needs of the community and the region and find a potential problem that can be addressed for a solution through their implementation of the project. Upon completion, the students should be proud of their completed project and should share their learning outcomes to the prospective employers.

**Course Activities: CSE 400-A**

CSE 400-A would introduce different soft skill-sets that are necessary for the successful completion of FYDP. The skill-sets include, but not limited to, mastering effective communications, individual and team development, ethical leadership, project management, the steps in the design process, environment and sustainability, etc. These skill sets would be developed by a series of seminars and workshops. The outcomes relevant to POs would be measured based on the student performance in different tests designed to assess those specific skills. The standard rubrics will be used to assess the performance. At the end of the trimester the students will submit an interim report of their FYDP and give a presentation. The breakdown of the overall evaluation is as follows:

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| **Activities** | **Assessment method** | **Assessor** | **Weightage** |
| Attendance | Class attendance | Course Teacher | 10% |
| Project topic presentation | Oral presentation | Course Teacher | 10% |
| Weekly progress | Journal maintained by students | Course Teacher | 30% |
| End of trimester   1. Project interim report 2. Project interim presentation | 1. Written report 2. Power-point | Course Teacher and Mentor | 30%  20% |

Note that only Interim Report will be marked in group, all other marks will be assigned individually.

Specifics of Interim Report: There will be a workshop where the students will be taught how to write the report following a given template. The report should provide the following information:

* Title of the Project
* Names of the Group Members
* Introduction to the Project: Motivation and Problem Statement on a complex problem chosen for the project.
* Literature Review: What are the current practices on the stated problem?
* Method: How the stated problem will be solved?
* Project Planning: Week- and trimester-wise planning for the tasks for implementing the project.
* Conclusions: Concluding remarks about the expectations on possible outcomes

**Weekly Activities**

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| **Weeks** | **Activities** |
| Week 1 | * Distribution of course hand out and explaining the course to the student * Ask students to research on selecting one individual project topic and forming groups |
| Week 2 | * Submission of group members name and topic (signed by the Mentor) * Oral presentation of project topic, justify the topic |
| Week 3 | * Discussion on research methodologies * Weekly progress by maintaining journal |
| Week 4 | * Discussion on communication skill * Weekly progress by maintaining journal |
| Week 5 | * Discussion on project management * Weekly progress by maintaining journal |
| Week 6 | * Discussion on engineering practice ethical issues * Weekly progress by maintaining journal |
| Week 7 to Week 10 | * Students describe their weekly progress to the class * Weekly progress by maintaining journal |
| Week 11 Week 12  (Supervisor should be present) | * Students submit their interim report * Students present the project’s current status through power point * Students demonstrate the operation of their project * Students submit the journals to the Course Teacher |

Note: If the students select a project that the Course Teacher feels that not suitable as design project, the Course Teacher will guide the students to shape up the project. All proposals must be finalized and approved by the third week.

**Course Activities: CSE 400-B**

In this course the students will implement the proposal that is accepted in the course CSE 400-A. The progress of CSE 400-A will be strictly monitored by the Mentor following a standard rubric. The progress of the project needs to be reported to the Mentor by the respective project group through a weekly group meeting following specific weekly schedule prescribed by the department.

Evaluation of CSE 400-B will be done through the

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| **Activities** | **Assessment method** | **Assessor** | **Weightage** |
| Weekly progress | Journal maintained by students | Mentor | 30% |
| End of trimester   1. Project final report 2. Project final presentation | 1. Written report 2. Power-point | Course Teacher and Mentor | 40%  30% |

Note that only Final Report will be marked in group, all other marks will be assigned individually.

Progress of the project will be graded by the Mentor. Final Report and Presentation will be graded by the average of the Mentor and the Course Teacher (a replacement faculty member might be assigned by the department if needed).