Quickstart Guide to Graduation Thesis

I. Introduction

- Completion of a graduation thesis is one of the graduation requirements of the computer engineering undergraduate program.

- Graduation thesis is a substantial research project undertaken by undergraduate students to culminate their studies. It demonstrates their ability to apply the knowledge and skills acquired throughout their degree program to a specific problem or area within computer engineering.

- Key aspects of a graduation thesis are as follows:

    (i) *The thesis must address a complex problem:* A comprehensive problem that requires some or all of the following elements for its solution: in-depth engineering knowledge, abstract thinking, creative use of fundamental engineering principles and research-based knowledge in leading areas of the computer engineering discipline, and development of a new model or method; concerns a variety of stakeholders with different needs; and may have significant consequences in a variety of contexts.

    (ii) *The outcome of the thesis must be a complex system, process, device, or product:* A system, process, device, or product that includes multiple components and diverse subsystems and/or spans various disciplines, where its analysis and design represent a complex problem.

    (iii) *The thesis must address realistic constraints and conditions in engineering design:* Depending on the nature of the design, these are elements such as economy, environmental problems, sustainability, manufacturability, ethics, health, safety, social, time, performance, functionality, legal and political dimensions.

- Graduation thesis is prepared as a team of 2-3 students under the supervision of an instructor from the department.

- Students undertake their graduation thesis over two consecutive semesters (typically the 7th and 8th) through the courses "BIM437 Computer Engineering Design" and "BIM444 Computer Engineering Applications". The design phase of the thesis project is conducted in BIM437, with implementation following in BIM444.

- To register for BIM437, students must have passed all courses from the first four semesters, earned at least 150 ECTS credits, and maintain a minimum GPA of 2.00. Registration for BIM444 requires fulfilling these same prerequisites and successfully completing BIM437.

- BIM437 and BIM444 have no resit exams.

II. BIM437 Computer Engineering Design

- At the beginning of the semester, a thesis topic is determined with the consensus of the team and their supervisor. The team and the supervisor have weekly follow-up meetings to evaluate progress.

- A thesis proposal report (both in English and Turkish) together with a presentation (in English) is prepared using the report template provided by "TUBITAK 2209-A Research Project Support Programme for Undergraduate Students" or "TUBITAK 2209-B Industry Oriented Research Project Support Programme for Undergraduate Students".

- Thesis must include architecture diagrams prepared using the C4 model (Context, Container, Component, Code), as detailed at https://c4model.com/. These diagrams are rendered using the Structurizr DSL (https://structurizr.com/dsl/) and incorporated into both your report and presentation.

- The proposal report and presentation (in English) are presented to and graded by the jury composed of the instructors of the department. The date of the presentation is announced by the department within the semester.

- The proposal report (in Turkish) is submitted to TUBITAK 2209-A/B Program. The program details and submission schedule are announced by TUBITAK.

- A midterm exam on "Project management, risk management and change management; Entrepreneurship and sustainable development; The effects of engineering applications on health, environment, and security in universal and social aspects; Issues reflected to the engineering field of the age; Legal issues in computer security" is taken. The related course materials are provided by the supervisor. The date of the exam is announced by the department within the semester.

- A proficiency exam on Computer Programming (Java), Data Structures and Algorithms, Computer Networks, Operating Systems, Database Management Systems, Microcomputers, and Computer Organization is taken as well.

- Grading Policy: Midterm Exam (15%) + Proficiency Exam (20%) + Thesis Proposal (65%)

- Grading Scale: 100-85 (AA); 84-80 (AB); 79-75 (BA); 74-70 (BB); 69-65 (BC); 64-60 (CB); 59-55 (CC); 54-50 (CD); 49-45 (DC); 44-40 (DD); 39-0 (FF).

III. BIM444 Computer Engineering Applications

- The implementation of the project is carried out based on the design details composed in BIM437. The team and the supervisor have weekly follow-up meetings to evaluate progress.

- A midterm exam on "Ethics and Engineering Ethics, Ethical Issues in Computer Engineering, IT Ethics and Law" is taken. The related course materials are provided by the supervisor. The date of the exam is announced by the department within the semester.

- A project poster is prepared and presented in the Traditional Project Fair and Competition organized by our faculty and Eskişehir Chamber of Industry. The schedule of the fair is announced within the semester. Irregular students who registered to BIM444 in Fall must prepare a poster too, even if the project fair is organized in Spring.

- At the end of the semester, a thesis report (template available on the department website: Home Page > Undergraduate > Graduation Thesis) and presentation are prepared for the completed project. Then, the project is presented to and graded by the jury composed of the instructors of the department. The date of the presentation is announced by the department within the semester.

- Grading Policy: Midterm Exam (15%) + Project Fair Poster & Enrollment (20%) + Thesis Report and Presentation (65%)

- Grading Scale: 100-85 (AA); 84-80 (AB); 79-75 (BA); 74-70 (BB); 69-65 (BC); 64-60 (CB); 59-55 (CC); 54-50 (CD); 49-45 (DC); 44-40 (DD); 39-0 (FF).

Note: All the regulations above are subject to change if required.

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