Graduation Project Student's Guide

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1. Introduction

Graduation project is a capstone project which is pursued over two consecutive semesters (Semster-7 and Semster-8) by a group of students and is supervised by a faculty member in the college. Graduation project starts with Project Proposal and is followed by Project Implementation. In graduation projects, students are expected to apply, demonstrate and integrate comprehensive knowledge acquired across various undergraduate courses.

The main stakeholders of graduation project are students, supervisors, co supervisors, committee members, graduation project (GP) coordinators, graduation project committee (GPC), and CCSIT administrators including the college dean and the department chairs. Each stockholder has a specific role/s during the project stages as outlined here.

Students:

Students are the primary stakeholders who are directly involved throughout the whole lifecycle of the graduation project. Graduation projects are usually done in a group of three or four students and they should work together as a team for a shared goal under the direction of their supervisor.

Supervisor and Co-supervisors:

The supervisors play a key role in guiding the students with their graduation project. They are responsible to schedule regular bi-weekly meetings with students, allocate tasks to them as required to achieve short and long-term project goals. They should also submit the report of bi-weekly meetings to the GP coordinator regularly using the prescribed form. A co-supervisor may be needed to coordinate with the female section and for multidisciplinary or industry-sponsored projects.

Committee Members:

One committee member for each project is nominated by the supervisor (subject to approval by the department). Committee members are expected to possess relevant knowledge and expertise to evaluate as well as facilitate the project.

Graduation Project Committee (GPC):

The GPC is responsible to facilitate and coordinate the graduation projects related matters in the college. The GPC comprises GP coordinators nominated by each department. The GPC is chaired by an experienced faculty member nominated by the college.

CCSIT Administration:

The department chair will nominate a GP Coordinator from within the department. The GP coordinators will assist the department chairs with the graduation project related matters in the department and will also communicate with the GPC. Each department may formulate its own policy about project solicitation and allocation related matters.

The college administration will provide necessary support to the students and supervisors to successfully complete the graduation project. They will also sponsor events and encourage students to showcase their projects within and outside the university. The college administrators will also ensure that KFU guidelines are strictly followed by all parties involved in the graduation project supervision.

2. Graduation Project Road Map and Evaluation

Graduation projects consist of two courses, namely Project Proposal in 7th semester and Project Implementation in 8th semester as shown in Figure 1. Prospective students must pre-register themselves at the end of 6th semester of study.

Pre-registeration

End of Semester 6	Semester 6	Semester 7
	Proposal in 2 milestones	Implementation in 2 milestones

Figure 1: Graduation Project Roadmap

2.1 Pre-registration (at the end of semester 6):

At the end of the 6th semester, students are advised to form a group consisting of three or four members, select a project idea, and discuss with the graduation project coordinator and the potential supervisor. Once the project topic and supervisor are agreed upon, students should fill in the graduation project pre-registration form assisted by their supervisor. Consequently, the supervisor submits the pre-registration form to the department's GP coordinator for approval by the department.

Criteria for Selecting Computer Science Graduation Project:

The selection of a project idea is the first step in graduation project development. Students are encouraged to conduct a feasibility analysis about the project requirements and implementation. Below are the general criteria in selecting a graduation project topic:

Criteria 1: Focus on Practical Applications
Projects are expected to have a significant content, where the main intellectual effort relates to the area supported and practical implementations.

Criteria 2: Project Size (Scope)
Projects must also be about the right size to fit into the time available (Duration of graduation project). The implications of this will best be judged by looking at past years' projects and by discussing plans with a Supervisor. It is important to pick a project that has an achievable core and room for extension. You should pick a suitably challenging project, where you will likely have to learn new things in order to successfully complete it.

Criteria 3: Novelty of the Project
Novelty is a characteristic of entity that carries one or aspects that are 'new' and 'original'. Novelty in research project is a contribution to the body of knowledge that has not be done previously, or the enhancement of an existing theory or approach. Don't just propose to do something in a given way because it has not been done before. The novel aspect should be incorporated in your design and implementation because it can add new insights.

Criteria 4: Availability of Resources
Each project will have several vital resources associated with its completion. If even one of these fails to materialize then it will not be possible to proceed with that project idea; your supervisor can help you judge what might be a limiting issue. Students need to make sure that vital resources are readily available and can easily be acquired to proceed with the proposed project idea.

2.2 Project Proposal (during semester 7):

There are two milestones for the project proposal as shown in Figure .2. At the end of each milestone,

the students will submit a report as well as make a presentation in front of their project committee members. The overall grade of a student will be calculated based on the grades he/she receives during each evaluation phase and milestone from different evaluators. Student's overall grade is calculated from supervisor's grade (40%) and committee members' grade (60%) over three milestones as shown in Table-1. The committee members are also expected to provide detailed written feedback and comments along with the grade.

Reports and presentations for each evaluation should be organized logically and prepared professionally using correct spelling, grammar, format and style. Students should follow the recommended formatting and style in preparing their reports and presentations using the prescribed templates. The students are expected to provide a certain information convincingly in their report and presentation for each milestone as shown in Table-2. Both the supervisors and the committee members will evaluate the final project proposal using relevant evaluation forms. It is strongly recommended that students carefully note all the comments made by the supervisors and committee members during the final proposal defense and try to incorporate them accordingly in the Project implementation phase.

Milestone 1

Semester 7/Week #8

- Ensuring the students' understanging of the problem and project scope
- Demonstrating students* ability to apply knowledge of computing and mathematics and defining the computing requirments appropiate for the proposed solution.

Milestone 2

Semester 7/Week #15

- Students should be able to show their competency in analyzing the problem at hand and in designing a computer-based solution to meet the requirments of the project.

Figure 2: Project Proposal Milestones

Table 1: Project Submission and Evaluation Schedule with Grade Distribution for Project Proposal (during semester 7)

PHASE 1	Week#		Grade Distribution	
	Report Submission	**Presentation**	**Committee**	**Suervison**
Milestone 1	7th	8th	30	40 For the whole course
Milestone 2	14th	15th	30	
Overall Grade			60	40
			Total = 100	

Table 2: Information to be provided at each milestone, the new items/information for milestones two and three are highlighted in bold (Note: these items should not necessarily be taken as section headings/slide titles for the report and the presentation).

Milestone 1	■ Background, motivation, and problem statement ■ Innovation and utility of the project. – Scope and degree of challenge. ■ Comprehensive analysis of related work ■ Objectives, expected outcomes, methodology. ■ Identification of alternative solutions/approaches and justification of ■ selecting a solution/approach ■ Project requirements ■ Identified tasks and a realistic work plan.Advance Experiential and Project-Based Learning Strategies
Milestone 2	■ Innovation and utility of the project. ■ Scope and degree of challenge. ■ Comprehensive analysis of related work ■ Objectives, expected outcomes, methodology. ■ Identification of alternative solutions/approaches and justification of selecting a solution/approach ■ Project requirements ■ Identified tasks and a realistic work plan. ■ **Discussion of tools and techniques used during project proposal** ■ **Appropriate analysis Details of proposed design conforming to the problem statement** ■ **Description of tools and techniques to be used during project implementation** ■ **Identified tasks and a realistic work plan for project implementation**

Milestone 3

Semester 8/Week #8

• Students show heir ability to implement and evaluate a computer-based solution by using appropiate tools and techniques

Milestone 4

Semester 8/Week #15

• The overall achievement of the project is assessed.

Figure 2: Project Implementation Milestones

Table 3: Project Submission and Evaluation Schedule with Grade Distribution for Project Implementation (during semester 8)

PHASE 2	Week#		Grade Distribution	
	Report Submission	Presentation	Committee	Suervison
Milestone 3	7th	8th	30	40 For the whole course
Milestone 4	14th	15th	30	
Overall Grade			60	40
			Total = 100	

Table 4: Information to be provided at each milestone, the new items/information for each milestone is highlighted in bold (Note: these items should not necessarily be taken as section headings/slide titles for the report and the presentation).

Milestone 3	■ Background, motivation, and problem statement ■ Innovation and utility of the project. ■ Scope and degree of challenge. ■ Comprehensive analysis of related work ■ Objectives, expected outcomes, methodology. ■ Identification of alternative solutions/approaches and justification of ■ selecting a solution/approach ■ Appropriate analysis ■ **Details of partial implementation conforming to the design of the proposal phase** ■ **Commandsof tools and techniques being used during project implementation** ■ **Preliminary outcomes/results** ■ **Analysis of the preliminary result through comparison, validation or verification** ■ **Remarks on preliminary results and intermediate conclusions** ■ **Identified tasks and a realistic work plan for next phase**
Milestone 4	■ Background, motivation, and problem statement ■ Innovation and utility of the project. ■ Scope and degree of challenge. ■ Comprehensive analysis of related work ■ Objectives, expected outcomes, methodology. ■ Identification of alternative solutions/approaches and justification of selecting a solution/approach ■ Appropriate analysis ■ **Details of project implementation conforming to project proposal** ■ **Mastery of tools and techniques used in project implementation-Overall project outcome/achievements** ■ **Analysis of overall result through comparison, validation or verification** ■ **Comprehensive remarks on overall project outcome and achievements (conclusions and future work)**

3. Rules and Regulations

There is a set of rules and regulations that students should adhere to during all project phases.

3.1 Bi-Weekly Meeting and Reports

The supervisor and the students are required to meet on a regular basis and keep track of their progress and problems. The students and supervisors are required to meet at least once in every two weeks and the report of these meetings will be submitted by the supervisor to the GP coordinator. If a student fails to attend 75% of the scheduled meetings, he or she will be denied from final project evaluation. According to KFU regulations, students are advised to submit a letter of excuse in case they fail to attend any scheduled meeting.

3.2 Minimum Passing Criteria

All graduation projects should meet certain minimum requirements to be eligible for final evaluation as follows:

- The workload should roughly correspond with credit-hour multiplied by the number of students in the group.
- The achievement and deliverables should be acceptable by both the supervisor and the committe members.

- The project comprises original work with no evidence of plagiarism and other academic misconduct.

If the effort of the project is not adequate or the deliverables are below acceptable standard, the department chair would consider granting extended time for successful completion based on recommendation of the supervisor and committee members. In this case, the project will be considered incomplete (I.C.) and will be further evaluated according to university policy. A student will be denied from attending final evaluation (with an F grade recorded) if he or she fails to attend 75% of regular meetings and seminars as set by the supervisor and committee. He/she will be awarded F grade also if plagiarism or any other academic misconduct can be proven with enough evidence.

3.3 Delays and Penalties

All graduation project students should strictly follow the milestone evaluation schedule endorsed by the college and submit reports and make presentations before each deadline. Students and supervisors are requested to seek prior approval from the department chair if they are unable to submit reports or make presentations on time. For unapproved delays including failure to submit a report or make a presentation will result in various penalties as explained below.

3.3.1 Approved Delay

The students and supervisors must seek prior approval from the department chair if they are unable to submit the report or make a presentation according to the evaluation schedule due to any legitimate reason (such as illness or unavailability of a committee member). With prior approval by the department chair in writing, a milestone evaluation can be arranged on a later date. However, an evaluation can't be postponed beyond the next milestone evaluation. Students must submit their report prior to the presentation as approved by the department. For delayed submission of report with such prior approval and subsequent evaluation, there will be no penalty.

3.3.2 Unapproved Delay in Report Submission

If the students fail to submit the report and no prior approval is granted by the department chair, the supervisors and the committee members reserve the right to deduct student's report-related grades based on their own judgments and according to the severity of the delay. The defaulting students cannot appeal against such penalties. No report will be accepted during and after the evaluation. If the students fail to submit their report before the evaluation, no grade should be given for the report.

3.3.3 Unapproved Delay in Presentation

Milestone evaluation requires students to make a presentation after submitting the report. All students must be present during the evaluation. If students fail to present their work for a milestone, they will be given no grade for that milestone.

3.4 Nomination for Awards:

The departments will nominate selected projects for recognitions (awards or prizes). The nominations should be judged by some tangible evidence or potential.

3.5 Deliverables, Copyright and Intellectual Property Rights

At the completion of the graduation project, students are required to return all university properties back to the college through their supervisors. Students must also submit all deliverables and outputs of the projects (software, hardware and data used and produced by the project; source codes with carefully written readme or how-to instructions, etc.) so that others can easily reproduce their work or reuse all or part of their work in future. Moreover, it is recommended that students copy the final version of their report and presentation on a CD and pass it to the supervisor for electronic archival at the college.

The university is the rightful owner of copyright and all intellectual property rights of all student's work. Any tangible and intangible benefits (including publications, financial proceeds) from students' projects should be shared among students, faculty and the university based on the department's policy in line with the university intellectual property regulations.

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