



Al-Hussein Bin Talal University
Engineering Collage
Department of Civil Engineering

Preparation Guidelines for Graduation Project

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Department of Civil Engineering - AHU

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1. Introduction:

The graduation project is a requirement for attaining the BSc. degree in civil engineering. Working closely with an academic advisor and committee, a student will develop and complete a significant graduation project.

Students are eligible to register for the graduation project after successful completion of 115 credit hours. Graduation project consists of two phases, **Graduation Project I** (Project Proposal) worth one credit hour and **Graduation Project II** (Project Implementation) worth three credit hours, and both are generally conducted over two consecutive and full semesters (only first and second semester) with at least eight months of work. **It is highly recommended not to take many other classes with Graduation Project (9 credit hours are recommended).** In most cases, students will conduct their graduation projects in group **(3-5 students)** and under the close guidance of a supervisor/advisor. A co-supervisor can be nominated if needed. **((Students who fail to create a group, select a graduation project title or advisor will be allocated and assessed by the project coordinator)).**

Graduation project constitutes an important phase of the student's future career where it provides an opportunity to practice design in a way that mimics professional practice. In preparing and defending this document, the student tries to apply their knowledge comprehensively in **solving a complex and realistic problem.** The student proves that he/she has gained essential knowledge and skills of research and implemented appropriate engineering standards and multiple realistic constraints. The main outcome is then to ensure that students can design a system as well as the ability to effectively communicate the results to an audience

Although various forms of assistance will be made available, the primary initiative for completion of the project lies on each student. These guidelines are designed to familiarize students with the department of civil engineering regulations regarding graduation projects towards achieving the program objectives and students' outcomes. The goal here is to help the student prepare a **professional report** and renders his/her findings easily accessible to the readers.

2. General Guidelines

2.1 Project Topics

A Graduation project challenges the student to go beyond the courses that prescribed in educational program; it intends to provide the student with a venue to express or demonstrate his/her **intellectual, physical and creative abilities** based upon research of the chosen subject area and knowledge gained from previous years of coursework in mathematics, sciences, and engineering. .

Personal growth and satisfaction are additional goals associated with the Graduation Project. The student will derive a sense of accomplishment through the completion and ownership of a body of work (graduation project) that is a reflection of his/her interests and abilities. **Opportunities to expand his/her personal knowledge, explore career paths, and apply learning to real-life situations** will serve to benefit the student's growth and promote lifelong learning, as well as to benefit

the local society by solving existed problems.

Selection of a project topic will be derived from the **advisor and/or student** based on such factors as interest and knowledge. There are certain qualifications that must be met if the project is to be accepted; the project must:

- be independent of class related projects
- involve some type of research
- has a measurable goals and well defined deliverables.
- draw on the students' skills and knowledge gained from coursework.
- demonstrate the ability to analyze, synthesize, and apply information
- demonstrate the ability to present information effectively
- be a learning activity
- benefit the student and/or society

The subject areas of a graduation project might be in of the following forms:

1. Designing an experiment and/or implementing some experimental research.
2. Learning a computer program to simulate or solve an engineering or management problem.
3. Conducting data analysis through various statistical analysis techniques.
4. Theoretical analysis where the student tackles and solves some theoretical problem.

2.2 Responsibilities of the Graduation Project

2.2.1 Student

The student is responsible for the successful completion of the Graduation Project under the guidelines established by the department and school. The student is **responsible for preparing a graduation project report and a presentation**. Preparation of a prototype or poster derived from that project is considered as a bonus.

2.2.2 Academic advisor/supervisor

The Academic Advisor is responsible **for providing the necessary guidelines** for the student to successfully choose and complete the project. The advisor will meet with the student during academic advisement **regularly** to provide the appropriate assistance and motivation as necessary. The advisor will **monitor** the progress of the project, evaluate students **individually** and collectively, correct and evaluate the final report and presentation, and **approve** the final report before submission to committee.

2.2.3 Assessment committee

The Assessment Committee, chaired by the academic advisor, is responsible for reviewing and evaluating the graduation project report, and oral presentation of the student. The assessment committees consist of three members from the faculty.

2.2.4 Graduation project coordinator

A staff member is nominated by the department to serve as a Graduation Project Coordinator, who is responsible for the overall mechanics, **scheduling**, and will **provide support** to the academic advisors and students. Graduation Project Coordinator, in cooperation with the concerned department head, has the following tasks:

1. Collect and organize suggested project titles and submit them to the department board for approval.
2. Assign and announce the approved projects titles to the students.
3. Develop, update, and keep the project application forms, evaluation forms, and any related documents.
4. Form the project examination committees in consultation with project supervisor and the department members.
5. Organize the presentation sessions.
6. Collect the evaluation forms from the supervisors and committee and work out the final grades.
7. Maintain a project database, which may include hard and soft copies of the project' reports, samples of logbooks, posters and presentations.
8. Coordinate the recording of graduation project presentations on videos (if required).
9. Administer the Best Graduation Project Award.

2.3 Project Instructions and Deadlines

Graduation project students should stick to the following regulation and deadlines. Failure to follow these deadlines and rules will result in **grade reduction** or possible **withdrawal** from the Graduation Project.

2.4.1 Graduation Project I students:

- Students should submit the selected graduation project title and group members' names to the Graduation Project Coordinator by the end of the **2nd week**.
- Final graduation project groups will be announced by the end of the **3rd week**.
- Project planning and task definition by the end of the **7th week**.
- Literature review and preliminary project design by the end of the **12th week**.
- Students should submit and discuss the Project Proposal (**first three chapters**) with his/her supervisor by **week 13** of the semester. The students are expected to provide the following information convincingly:
 - Background of the project
 - Motivation for the project
 - Problem statement
 - Scope of the project
 - Literature review
 - Project requirements
 - Identification of alternative solutions/approaches and justification of selecting a solution/approach
 - Expected outcomes
 - Identified tasks and a tentative work plan for project implementation.

Note: Some items above are to be adapted further in the implementation phase

(**Graduation project 2**).

- The Project Proposal (first three chapters) should be submitted to Graduation project coordinator by **week 14** of the semester.
- One-slide presentation should be presented by **week 15** in front of Assessment Committee.

The Assessment Committee will evaluate the project. The overall grade of a student in project proposal will be calculated based on the marks received from the Assessment Committee (100 marks).

2.4.2 Graduation Project II students

The students should follow the following schedule:

1-3th week: detailed project design and review with supervisor and committee (if needed).

6-10th week: data analysis, final step in theoretical analysis, simulation analysis.

12th week: submit a full draft report to the supervisor for reviewing.

14th week: submit a revised draft report and presentation to the Graduation Project Coordinator as a hard copy- without hard cover. Number of hard copies is determined by the Graduation Project Coordinator based on the number of supervisors and examination committee. Students can also prepare and submit a poster or a paper derived from their project (optional bonus).

15th week: presentation and oral examination. The duration of the presentation should not exceed 30 minutes and oral examination should take 30 – 40 minutes. Both the supervisor and the committee members will evaluate the students. The overall grade of a student in project implementation will be calculated based on the marks received from the supervisor (**60 marks**) and from the committee members (**40 marks**) as outlined in Appendix IV.

16th week: submit a revised final report to the Graduation Project Coordinator after updating it according to examination committee comments and requests. A hard copy and a soft copy, and any related programs of the final report are submitted to be kept in department's database. The number of hard copies is determined by the Graduation Project Coordinator.

3. Project Evaluation

The evaluators try to evaluate student's high-level learning outcomes by means of a set of predefined criteria. In all phases of evaluation, student's **ability of communication** (report and presentation) and **teamwork** (professionalism, cooperation and ethical behavior) will be taken into consideration. However, the **scientific and technical aspects** and achievements of the project will play the key role in evaluation.

3.1 Graduation Project I

The Assessment Committee will evaluate the students work in Graduation Project I based on the required outcomes (see section 2.4.1), assign the proper grade, and then send it to the Department Head.

It is strongly recommended that students carefully note all the comments made by the Assessment Committee during the final proposal defense and try to incorporate them accordingly in the Project Implementation phase.

3.1 Graduation Project II

The evaluation process of the Graduation Project II is based on **the students' work, written report, and presentation**. Presentation of a paper or poster derived from that project is treated as a bonus. The student should show that he/she applied, analyzed, synthesized and evaluated information, and then communicate significant knowledge and understanding. He/she must defend his/her project in front of the committee members. He/she must answer all questions of the committee members. He/she should also be able to answer any questions asked by the audience. Therefore, **he/she must be thoroughly prepared to defend any and every aspect of the project material, and perhaps any material closely related to the project topic.**

The grade is assigned based on the grades given by the committee members (40%) and supervisor (60%) per each student. The final grade is assigned based on the weights provided in Appendix IV.

4. Report Format

Reports and Presentations for each phase of 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. The technical contents should be presented clearly, precisely and comprehensively to highlight their contributions and achievements. Use the **Graduation Project Report Template** in the civil engineering department website.

5. Presentation Format

Presentation must be supported by slides which will be reflected by data show projectors. The presentation should include, but is not restricted to, the following basic topics:

1. Project problem statement
2. Project objective(s)
3. Literature review/background
4. Methodology
5. Results and discussion
6. Summary



APPENDICES



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Department of Civil Engineering

Graduation Project Evaluation Form (for each student)

1. Project Title: _____

2. Student Name: _____

3. Supervisor Name: _____

4. Supervisor Evaluation: (max 60%)

| Evaluation Criterion | Weight | Grade |
|---|-----------|-------|
| Problem solving capabilities | 15 | |
| Commitment & Punctuality | 15 | |
| Team spirit, Leadership and Creativity | 15 | |
| Report writing and presentation/discussion skills | 15 | |
| Total | 40 | |

5. Committee Evaluation: (max 60%)

| Evaluation Criterion/weight | Grade | | | |
|--|------------------------|------------------------|------------------------|------|
| | 1 st member | 2 nd member | 3 rd member | Avg. |
| Project value, complexity, and completeness (10) | | | | |
| Comprehension of the theoretical background of the project (10) | | | | |
| Understanding the details of the project and the implications of the results (5) | | | | |
| Ability to make an effective oral presentation (5) | | | | |
| Discussion and argumentation skills (5) | | | | |
| Technical writing professionalism and ability to communicate the results in a written format (5) | | | | |
| Paper / poster (Bonus) | | | | |
| Total | | | | |

6. Committee Decision

Pass
 Pass with minor changes
 Need to do further work for an extra semester
 Final Grade

Committee Chair 1st member 2nd member 3rd member

.....



Al-Hussein Bin Talal University

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Graduation Project Evaluation Form

Examiner: Date:

Project Title:

Advisor:

Students: (1) (2).....

(3)..... (4).....

Note: Final Grade = 40% Examiners + 60% Advisor

| Project Assessment Category | Points (from 0 to 10) | | |
|--|--------------------------|-----------|-----------|
| 1- Documentation <i>background review, organization, written language, completeness, references, timeliness</i> | | | |
| 2- Project Complexity <i>implementation challenges, interdisciplinary scope</i> | | | |
| 3- Project Value <i>usefulness, relevance, applicability</i> | | | |
| 4- Project Completeness <i>prototype, results, conclusions, expandability</i> | | | |
| 5- Engineering Employed <i>design, analysis, simulation, methodology</i> | | | |
| 6- Development Performed <i>self-made, not outsourced, little plug-and-play</i> | | | |
| 7- Paper / poster (Bonus) | | | |
| Individual Assessment | Student 1 | Student 2 | Student 3 |
| 8- Presentation Skills | | | |
| 9- Technical Knowledge | | | |
| 10- Contribution to Team Project | | | |
| 11- Personal Growth | | | |
| Total = | | | |

Committee Decision

Pass Pass with minor changes Need to do further work for an extra semester

Committee Chair

1st member

2nd member

3rd member

.....

.....

.....

.....

Fortnightly Assign Tasks # ___

Project Title : _____ Date: _____

Supervisor : _____

Student : _____

| No. | Fortnightly Goals | Done | |
|-----|-------------------|------|----|
| | | Yes | No |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | 88 | | |

For any unachieved goal(s), please clarify:

1- _____

2- _____

3- _____



Department of Civil Engineering

Graduation Project Approval Form

Date:

Student(s) Name:.....

.....

.....

Suggested Project Title:.....

Supervisor(s).....

Project Summary:

.....

.....

.....

Student(s) Signatures:

| Supervisor | Co-Supervisor |
|--|--|
| Do you agree on supervising this project? <input type="checkbox"/> YES <input type="checkbox"/> NO Signature | Do you agree on supervising this project? <input type="checkbox"/> YES <input type="checkbox"/> NO Signature |
| Supervisor | Co-Supervisor |
| Comment: Signature: | Comment: Signature: |