GIRNE AMERICAN UNIVERSITY (GAU)

FACULTY OF ENGINEERING

GRADUATION PROJECT RULES AND REGULATIONS

CEN401, EEN401, and IE401: Graduation Project I gives the students the chance of demonstrating their skills and engineering judgement, based upon previous and current course and laboratory experience. The projects are selected in areas of current interest in computer engineering.

CEN402, EEN402, and IE402: Graduation Project II is the continuation of graduation project in which the students either continue improving their project they worked on project I or experience a different project topic.

In both projects the students are expected to show their abilities on designing, developing, orally presenting and documenting a project, just like they will need to in their professional lives. That is to say, the students are expected to display their social and communication skills as well as their technical abilities.

This guideline states the rules and regulations which are applied starting from the registration of the all graduation projects to the students until the evaluation and grading process.

1. ELIGIBILITY:
To be eligible for participating in a graduation project a computer engineering student must;
1. Complete all first and second year courses
2. have maximum 16 new/failed credited courses left until graduation for CEN401, EEN401, and IE401 – Graduation Project I
3. have maximum 10 new/failed credited courses left until graduation for CEN402, EEN402, and IE402 – Graduation Project II

2. REGISTRATION :
During the registration period a graduation project registration form, which is prepared by the faculty's student information system software, is given to the student. On this form, the topic tracks which are suitable for the student are marked.The students are given the chance to specify preference among the topic tracks and also to mention any other student's name as his/her project partner preference.

3. PROJECT ASSIGNMENT PROCESS :

3.1. COMPUTER ENGINEERING DEPARTMENT
A departmental meeting is held at the end of the Add/Drop period to evaluate the collected project registration forms to assign the topic track, project supervisor and the group partner to every student.

The Computer Engineering Department always retains the right to assign any of the suitable topic tracks to the student as his/her project topic. Also, the partner assignment is carried out by the department.

A track is suitable for a student if the student successfully passed that tracks prerequisite courses. The available tracks are as follows:

> **TRACK 1. Hardware/Software Interfacing**
> **(Prerequisite Courses: CEN301, ENG203)**
> > In these type of projects, the task **must include a hardware component to be designed and implemented** by the student(s) together with the software development part of the project.
>
> **TRACK 2. Web Application Development**
> **(Prerequisite Courses: CEN 305, CEN 306)**

In these type of projects, the task must involve the development of a web server side application **program which benefits from a web2 technology** involving component(s) (e.g. MS Web Services, AJAX, Silverlight, Ruby etc.), which **MUST** also be developed by the student(s). (i.e. pure html, asp, aspx, php projects **do not qualify**)

TRACK 3. Commercial Appl. Development
(Prerequisite Courses: CEN 304, CEN 306)
In these type of projects, the task must be in either of the forms:

        a. A Client/Server Application implementation which **uses Inter-process communication** technologies (e.g. RPC, TCP/UDP SOCKETS, Message Passing etc.)

        b. A software package implementation (including installer) **which uses a PC component** (i.e. camera, modem, bluetooth, ethernet card, CD/DVD reader/writer etc.)

        c. A software package implementation which controls/uses/manages **any operating systems' service(s)**.

        d. A software package which is executable on a handheld device (e.g. PDA ,cellular phone etc) NOTE: In this type of topic choice, the task itself must fall into either of the TRACK 3a, 3b, 3c, 5, 6 categories)

TRACK 4. Academic Study
(Prerequisite Courses: CEN305, MT308)
In these type of projects, the task should include the **practical implementation and quantitative analysis** of a theoretical and/or current research topic. The tasks can be in the form of:

        a. The software implementation of **a well known advanced algorithm** in any field of engineering major.

        b. The proposal and implementation of an **alternative original solution** to a known engineering problem.

        c. Fields of study can be (but are not limited to), neural networks, genetic programming, machine learning, pattern recognition, bioinformatics, wired/wireless computer networks, language processing, parallel/distributed computing etc.

TRACK 5. Computer Graphics/ Game Programming
(Prerequisite Courses: CEN303, CEN304)
In this track, the task must fall into either of the following categories:

        a. The implementation of computer graphics algorithms (e.g. any ray tracing alg., triangulation alg., reflection/refraction calculation etc.)

        b. The implementation of workflows and/or animations **by coding with the scripting language** of a well known software package (e.g. Flash, Photoshop,AutoCAD etc.)

        c. The implementation of **a simple motion engine** (e.g. Arcade type shoot-em-up, tetris etc.) with mathematical computations.

        d. A board game implementation which includes **a well known AI tree search algorithm**. In these type of topics, the game must be playable against the computer and/or against a second player via network.

    NOTE: In all tracks usage of any third party software component is subject to the consent of the project supervisor and must be mentioned in the project proposal and progress reports.

3.2. ELECTRICAL & ELECTRONICS ENGINEERING DEPARTMENT
A departmental meeting is held at the end of the Add/Drop period to evaluate the collected project registration forms to assign the topic track, project supervisor and the group partner to every student.

The Computer Engineering Department always retains the right to assign any of the suitable topic tracks to the student as his/her project topic. Also, the partner assignment is carried out by the department.

A track is suitable for a student if the student successfully passed that tracks prerequisite courses. The available tracks are as follows:

TRACK 1. Signal Processing
(Prerequisite Courses: EEN307
Projects in this tract should be an application of signal processing and/or communications

TRACK 2. Power Systems/Measurements
(Prerequisite Courses: EEN305, EEN303
Projects in this tract should include either a practical or theoritical application (design/ measurement) of electrical power .

TRACK 4. Electronics
(Prerequisite Courses: ENG206, EEN302)
The projects of this track should include design and application (preferably practical) of analalog or digital electronic circuits

TRACK 5. Electromagnetics
(Prerequisite Courses: EEN348)
The projects given in this track should be related with the electromagnetic theory applications (for instance in communications) or methods

TRACK 6. Design/Optimization
(Prerequisite Courses: MT308/ENG203)
Projects in this track should include application of modern methods on a specific problem.

NOTE: In all tracks usage of any third party software component is subject to the consent of the project supervisor and must be mentioned in the project proposal and progress reports.

3.3. INDUSTRIAL ENGINEERING DEPARTMENT
A departmental meeting is held at the end of the Add/Drop period to evaluate the collected project registration forms to assign the topic track, project supervisor and the group partner to every student.

The Industrial Engineering Department always retains the right to assign any of the suitable topic tracks to the student as his/her project topic. Also, the partner assignment is carried out by the department.

A track is suitable for a student if the student successfully passed that tracks prerequisite courses. The available tracks are as follows:

TRACK 1. Statistics and Operations Analysis
(Prerequisite Courses: ENG 204, IE 307, IE 308, IE 311)
In these type of projects, the project should include modelling of the system, data collection and statistical analysis by the student(s) together with the interpretation of the test results.

TRACK 2. Manufacturing Systems and Applications
(Prerequisite Courses: ENG 204, IE 303, IE 312, IE 314)
In these type of projects, the project should include applications of industrial engineering techniques in a real manufacturing company or in manufacturing sector for the improvement of the system of concern.

TRACK 3. Service Systems Applications
(Prerequisite Courses: ENG 204, IE 303, IE 307)
In these type of projects, the project should include modelling of the service systems/sector (such as, hospitals, banks, municipalities, etc.) and applications of industrial engineering techniques for the improvement of the system/s of concern.

4. WRITTEN MATERIALS :
During the course of the project the students must write a proposal, a progress report and a project report according to the writing rules which are announced at the project e-learning site.

5. EVALUATION
At the end of the semester every project must be orally presented to an evaluation jury. The jury will evaluate the overall project by judging the presentation and the submitted written reports using the following weight distribution:

Project Proposal : 5%
(Proposals must be uploaded to e-learning not later than the than the deadline which is announced by the department.)

Progress Report : 20%
(Progress reports must be uploaded to e-learning not later than the deadline which is announced by the department.)

Evaluation Jury: 40%
(project supervisor grade :10%, member1 grade:10%, member2 grade: 10%, Member3 grade: 10%)
- Each of the jury members grade the following criteria during the project presentations at the end of the semester:**(Each Criteria10%)**
Originality, Engineering Knowledge, Background, Contribution, Questions, Preparation, Level of English, Clarity, Match with the Work Done, Attitude.

Project Supervisor's Assessment : 25%
(depends on the supervisor's judgement on the student's effort and performance, taking into account the student's attendance to the weekly meetings)

Final Report : 10%
(The pdf file of the final project report must be uploaded to the e-learning before the evaluation jury week. The hard-copy must be submitted to the project supervisor after the evaluation jury)

The graduation project of a student will be evaluated as "F" under any of the following circumstances:

1. If the overall project grade is less than 50/100.

2. If the proposal, progress report and final report total grade is less than 10/35.

3. If the final hard-copy report is not submitted.

The letter grades other than F are given according to the standard grading rules and regulations of GAU.