

The University of Jordan
School of Engineering
Electrical Engineering Department
2nd Semester – A.Y. 2020/2021



Course: Project (1) & Project (2) – 0973598 & 0973599 (3 Cr. – Required Course)

Instructor: Faculty Members

Office: E306, Telephone: 06/5355000 ext 22844, Email: s.al-jaber@ju.edu.jo

Office Hours: Will be posted soon

Course website: <http://engineering.ju.edu.jo/> (Go to Electrical Engineering Department Forms)

Catalog description: In part one, a problem is assigned to the student in one of the different electrical engineering tracks. He will be asked to rely on himself to find a solution for the problem (which could be practical or theoretical). It is expected from the student to develop the abilities of research and independent work and to train himself to observe a timetable to perform his project and to be capable of explaining and expressing his findings in a professional manner. In the second part, the student is required to finish the work he started in the first part. The student is required, whenever it is possible, to use the appropriate and available software to solve his problem, simulate his solution, to build a prototype and perform all needed measurements. The student will be required to write down his final year project as a complete report (dissertation) according to the department instructions.

Prerequisites by course: Successfully passing 124 credit hours. (pre-requisite)

Prerequisites by topic: Students are assumed to have a background in the following topics:

- Basic principles of various electrical engineering fields.
- Mathematical modeling and analysis of electrical engineering problems.

Textbook: Senior Design Project Guidelines, which can be obtained from the course Website.

- References:**
1. Engineering Design by George Dieter and Linda C. Schmidt, McGraw-Hill Education, 5th edition, 2012.
 2. Engineering Design: A Project-Based Introduction by Clive L. Dym, Wiley, 4th edition, 2013.
 3. The Engineering Design of Systems: Models and Methods by Dennis M. Buede and William D. Miller, Wiley, 3rd edition, 2016.
 4. Engineering Design: A Systematic Approach by Gerhard Pahl, W. Beitz, J. Feldhusen and K. H. Grote (Authors), Ken Wallace and Lucienne T.M. Blessing (Editors), Springer, 3rd Edition, 2007.
 5. Project Management: A Systems Approach to Planning, Scheduling, and Controlling by Harold Kerzner, Wiley, 12 edition, 2017.
 6. Project Management: A Quick Start Beginner's Guide For The Serious Project Manager To Managing Any Project Easily by Donald J. Scott, CreateSpace Independent Publishing Platform, 1 edition, 2016.

Schedule: 16 Weeks, 42 lectures (50 minutes each) plus exams.

Course goals: The overall objective is to introduce the student to a major engineering design experience that incorporates appropriate engineering standards and multiple constraints, and is based on the knowledge and skills acquired in earlier course work.

Course learning outcomes (CLO) and relation to ABET student outcomes (SO):

- Upon successful completion of this course, a student will:
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| | [SO] |
| 1. Be able to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics. | [1] |
| 2. Be able to apply engineering design to produce solutions that meet specified needs. | [2] |
| 3. Be able to effectively communicate verbally and in writing the project methodology and findings. | [3] |
| 4. Recognize professional and ethical responsibility in engineering situations, and consider the impact of engineering solutions. | [4] |
| 5. Be able to function effectively on a team to meet the project's objectives. | [5] |
| 6. Be able to acquire and apply new knowledge as needed. | [7] |

Course topics: **Hrs**

1. Orientation: how to write log books and reports, teamwork and distributing the effort, etc.
2. Selecting the design challenge.
3. Design process.
4. Practical implementation.
5. System testing.
6. System optimization.

7. Writing the technical report and preparing the oral presentation.

Ground rules: It is expected from the student to develop the abilities of research and independent work and to train himself to observe a timetable to perform his project and to be capable to explain and express his findings in a professional manner. The student is required, whenever it is possible, to use the appropriate and available software to solve his problem, simulate his solution, to build a prototype and perform all needed measurements. The student will be required to write down his final year project as a complete report (dissertation) according to the department instructions. Team members should be considerate to each other, and adhere to their ethical responsibilities.

Assessment & grading policy:	Assignments	0%	Quizzes	0%	
	Supervisor Part I	15%	Projects	0%	
	Supervisor Part II	25%	Lab Reports	0%	
	Final defense (jury)	60%	Presentation	0%	
	<hr/>			Total	100%

Last Revised: March 2021