YAŞAR UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

# EEE 4910 SENIOR DESIGN PROJECT I

## Fall 2019-2020

### AIM OF THE COURSE

To provide the ability to understand and define an engineering problem, to provide design experience through teamwork, and to apply project management methodology.

### LEARNING OUTCOMES OF THE COURSE

1. Ability to design a product under realistic constraints by using modern design methods
2. Experience on project management and project planning
3. Ability to design in order to meet desired needs under realistic conditions and limitations such as engineering standards and economic, environmental issues, sustainability, manufacturability, ethical, health, safety, social and political problems, etc. and apply test procedures
4. Experience on written and oral communication techniques
5. Appreciation of the need for self and continuous learning
6. Ability to share responsibilities within a teamwork

### ECTS : 8  (1 - 6)

### CLASS HOURS / LOCATION :

Wednesday     09:30-10:20     Room : Y215

### COURSE COMITTEE :

Dr. Nalan ÖZKURT    (Room : U-114)

### ASSISTANT: Güneş Becerik Mir (gunes.becerik@yasar.edu.tr)

### GRADING POLICY

See Appendix 1 at the end of the document

### ATTENDANCE POLICY:

Attendance is compulsory; students should attend at least % 80 of the weekly meetings. Any student missing an exam should provide a valid excuse within five days following the exam, otherwise he/she will receive a failing grade.

**Weekly Schedule**

| W | Date | | Advisor-Student | Lecture |
|---|------|---|-----------------|---------|
| 1 | 16.09.2019 | 20.09.2019 | | |
| 2 | 23.09.2019 | 27.09.2019 | Project teams will select their subjects from the list | EEE 4910 Introduction |
| 3 | 30.09.2019 | 4.10.2019 | 1.Weekly Advisor-Firm-Team meetings | Project Management and Planning |
| 4 | 7.10.2019 | 11.10.2019 | | Lifelong Learning and Accessing Information |
| 5 | 14.10.2019 | 18.10.2019 | 2. Upload signed meeting notes to Sakai | Report Preparation |
| 6 | 21.10.2019 | 25.10.2019 | | Presentation Preparation |
| 7 | 28.10.2019 | 1.11.2019 | 3. Prepare Project Proposal Report and Presentation | |
| 8 | 4.11.2019 | 8.11.2019 | | |
| 9 | 11.11.2019 | 15.11.2019 | **Project Proposal Presentation** | |
| 10 | 18.11.2019 | 22.11.2019 | 1.Follow the work schedule given in Project Proposal Report | System Engineering |
| 11 | 25.11.2019 | 29.11.2019 | 2. Weekly Advisor-Firm-Team meetings | Product Design |
| 12 | 2.12.2019 | 6.12.2019 | 3. Upload signed meeting notes to Sakai | Engineering Standards |
| 13 | 9.12.2019 | 13.12.2019 | 4. Prepare Design Document and Poster Presentation | Poster Preparation |
| | | | **24.12.2019 14:00 Poster Presentation Rectorate Foyer** | |
| | 2.01.2019 | 15.01.2019 | **Final Exams Course Evaluation Exam** | |

## A. Basic Approach:

a. Graduation Project is carried out for two terms. Graduation Project students take EEE 4910 in the fall semester and EEE 4920 in the spring semester. The prerequisite for EEE 4920 is EEE 4910.

b. At the end of the Fall Term

- Project Proposal Report (requirement, purpose, main stages, work schedule etc.)
- Design Document (which describes design steps to design a complex system, process, device _or product under realistic constraints and conditions, in such a way as to meet the desired results; ability to apply modern design methods for this purpose. It includes working principles of the product, how to prepare test mechanisms and test procedures, block diagram, circuit diagrams, calculations, simulation results, and budget analysis).

are completed.

In the Spring Semester, it is aimed to realize the design, test works and prepare the project report (Graduation Thesis). Spring semester application will be finalized before the beginning of the semester.

c. Fall term, project definition, project program preparation; product development workflow and stages; design / development workflow, system engineering, continuing education, report preparation, presentation - poster preparation and similar subjects are taught in the classroom.

d. In the implementation of this plan, the Committee manages the monitoring and flow of the process in accordance with the plan.

The design / development / realization / test / report-presentation preparation activities within the scope of the project are managed by the related advisor faculty member.

e. The project subjects are determined by the Committee with the contribution of all department members; Assignment of projects to the teams is made by the Committee, taking into consideration their preferences and coordinating with the advisors.

f. Project Teams make 2 presentations (oral or poster) each semester. Academic staff and all project teams participate in the presentations.

g. Presentations, reports and other relevant documents are uploaded to the system at the latest at the time announced and / or delivered to the research assistant of the course. In case of late surrender, a penalty is applied (see section Other Matters).

h. Letter grades determined by the Academic Board of the Department according to

• The performance of the student / group in regular meetings,

• presentation performance,

• report performance,

• evaluation of the resulting work (by the advisor and the committee),

• written / oral examination

and using the principles of the regulation in Appendix.


**Detailed Implementation Plan**

**Week 1:**

The Committee compiles the projects proposed by the companies and / or department staff by taking into account the number of students who are expected to complete the project this year. The list is finalized by the Department Academic Board and advisors are assigned.

members are selected for the projects.


**Week 2:**

a. The project topics are announced on the course website.

b. Notification of teams and project preferences: Students identify teams of 3 people and report their project preferences to the Committee via electronic means. Students rank their preferences from 1 (most wanted) to 5 (least wanted).

c. First meeting with students: Students are informed about Graduation Project Application and Term Plan covering the operation and rules of the course and the projects are introduced to the students. At this meeting, students are not informed about who the project advisors are.

**Week 3 - Week 8:**

a. Assignment of teams to projects: A team-project assignment is made by applying a matching algorithm in which preferences are input. The algorithm tries to assign each team to the highest possible preference, taking into account the preferences of the companies, if any.

Students who do not have a team and / or project are assigned to existing teams or new teams are formed and the teams are finalized (total number of teams is equal to the number of projects).

"Team-Project-Advisor" matching that results from team-project assignment is announced on the web page of the course.

 b. Weekly Meetings: Each team meets with their advisors (at least 1 hour).

c. Teams contacting the company: Each team, in consultation with the advisor, determines the weekly regular meeting days, if possible.

d. Submission of Meeting Notes: Each team writes the notes of each interview with the advisor and / or company. Photo of meeting note signed by Advisor is uploaded to system.

e. Preparation and submission of the Project Proposal Report (PP): Each team, with the agreement of the advisor and the firm, prepares the PP, the format and content of which will be available on the course website. The deadline for submission is **8th November Friday at 17:00.**


**Week 9:**

PP presentation: Each team makes a presentation explaining the project topic and project plan. All teams and academic staff must attend the presentations. Presentation language is English. The duration for each team is 7 minutes.


**Week 10 - Week 13:**

a. Design Studies: Each team carries out the design / development work in accordance with the plan in the POE.

b. Submission of Meeting Notes: Each team writes the notes of each interview with the advisor and / or company. Photo of meeting note signed by Advisor is uploaded to system.

c. Draft report submission: Each team prepares and uploads the "Design Document" following the requirements on the web page of the course. The draft report is evaluated by the team's advisor. The final reports uploaded to the system until **December 20th, Friday 23:55**. In case of delay, penalty is applied.


**Week 14:**

a. Poster Preparation: Each team prepares their poster in English in accordance with the poster format on the course web page. This poster includes the detailed design and plan of the project. Teams are required to share poster drafts with their advisors

and get feedback before the presentation. The teams upload the final posters to the system by **Monday, 23 December at 17:00.**

b. Poster Presentation: Each team will be ready in the presentation area on Tuesday, **December 24th at 13:00** with their posters prepared in English according to the format.

In front of the posters, the teams answer the questions of the faculty and explain their projects. Each team is graded over a poster and a presentation.

**Final Exam Weeks**

a. Assessment of the course information: The test exam prepared by the Committee is conducted in a way to measure the course outcomes described during the semester. If the grade of this exam is less than 50, the student will fail the course with letter grade of F.

b. Grade submission: Department Academic Board determines letter grades and grades are entered into the system. When evaluating project teams with a grade, each student may be given a separate grade. A student who completes the course successfully can be evaluated with one letter higher or lower than the average grade received by the team. If there is a problem in grading, the course coordinator will be engaged.

**Attendance:** Each student should attend at least 80% of the weekly meetings. Students whose absence exceeds these limits will be given an NA grade.

**Report Submissions:** Reports must be uploaded to the system until the announced time. For late reports, a 5% penalty (up to 30%) will be applied for every 30 minutes delayed on the day of delivery. A penalty of 30% will be applied for each delayed day.

Reports should be printed in pdf format. The report format published on the course website should be strictly followed.

**Electronic Documents:** At the end of the semester, the electronic version of the final report must be uploaded to the course website (sakai). The material to be uploaded should include a copy of the poster and presentations (in pdf format) and the reports in doc (or docx) format.

| | |
|---|---|
| Meeting Notes | %5 |
| Project Proposal Report | %10 |
| Project Proposal Presentation | %15 |
| Design Document | %20 |
| Poster Evaluation | %20 |
| Exam | %20 |
| Advisor Evaluation | %10 |

*September 2019*