

HOW TO BROWSE THE PROJECTS USING THE ENS491-492 WEB MANAGEMENT SYSTEM

1. The address for the ENS491-492 Web Management System is <http://mysu.sabanciuniv.edu/apps/fens/ens4912>
2. **Make sure that the term is set correctly** (the term will typically be set correctly when you land in). For ENS491-492 projects that will start in September 2016 and end in June 2017, the correct term is “Sep 2016-Jun 2017”. **Change the term if necessary, using the drop-down box** at the top-right corner. **Click “Projects offered for”** to see the projects.

You can see all the projects offered

Make sure that the term is set correctly

You can change the term

3. By default, you will see the entire list of projects. You can filter the projects according to the programs.

Select a program and click “Filter” to see only those projects related to the program you selected

Disciplines:

- CS (Computer Science and Engineering)
- MS (Manufacturing Systems Engineering)
- MAT (Materials Science and Engineering)
- BIO (Biological Sciences and Bioengineering)
- ME (Mechatronics)
- EE (Electronics Engineering)

Filter

#001 Development of a Microcomputer Education Platform FENS

Laboratory work is an indispensable part of an introductory course on microcomputers as the comprehension of topic requires hands-on experience. A conventional laboratory set-up involves a limited number of -usually- expensive kits to which students have limited access. However, modern microcontrollers are cheap as they are mass produced. Consequently, every student might have an individual platform for a reasonable price.

In this project we would like to

1. Design an implement a PC32 based simple and inexpensive microcontroller board,
2. Design and implement experiment modules (e.g., motor controller, display, data acquisition, etc.) for the newly designed PIC32 board or the existing PIC24 based EL308 boards,
3. Develop a software library to be used with the designed modules,
4. Design “nice” experiments and form a laboratory manual.

Groups should have experience in low-level microcontroller/microcomputer programming and digital hardware design.

Recommended Disciplines: CS - Computer Science and Engineering
ME - Mechatronics
EE - Electronics Engineering

Supervisors: Ayhan Bozkurt (FENS 1047)

Recommended Number of Students/Group:2

#002 Data Envelopment Analysis (DEA) in the Real World FENS

Data Envelopment Analysis (DEA) is an approach which is used to measure efficiency (or productivity) of an activity or entity (named Decision Making Unit, DMU). The methodology is used extensively for benchmarking a unit of entities, for example, branches of a retailer, retailers in an industry, competitiveness of nations, R&D efficiency of universities.

The ultimate goal of this project is to create a web-based decision support system (DSS) which will provide DEA practitioners with guidance on how they plan their DEA studies and build their models. For example, when a user selects a particular domain, for example

4. **Please pay attention to the status of the project.** Applying for a project which is already full will probably result in waste of time (both yours and supervisors).

The screenshot shows a project entry for '#550 Autonomous Mobile Manipulation' under the 'FENS' category. The project description states it involves complex manipulation tasks in unstructured environments. It lists recommended disciplines as CS - Computer Science and Engineering and ME - Mechatronics. Supervisors listed are Volkan Patoğlu (FENS 1076) and Esra Erdem. The recommended number of students is 2. A red callout box on the left explains that the note 'This project is full. No more students will be accepted.' means the supervisor will not accept more students. Two other red callout boxes on the right identify 'The supervisor' as Volkan Patoğlu and 'Co-supervisor(s)' as Esra Erdem.

#550	Autonomous Mobile Manipulation	FENS
Autonomous Mobile Manipulation is the execution of complex manipulation tasks, in unstructured and dynamic environments, in which cooperation with humans may be required.		
Mobile manipulation systems require the integration of a large number of hardware components for sensing, manipulation, and locomotion as well as the orchestration of algorithmic capabilities in perception, manipulation, learning, control, planning, etc.		
The scope of this project encompasses research activities that address one or more of the aforementioned challenges of mobile manipulation. The results of the project need to be integrated under Robot Operating System (ROS) and implemented on KuKa youBot mobile manipulators we have in our laboratory.		
The recommended team size is 2.		
Recommended Disciplines:	CS - Computer Science and Engineering ME - Mechatronics	
Supervisors:	Volkan Patoğlu (FENS 1076) Esra Erdem	
Recommended Number of Students/Group: 2 <i>This project is full. No more students will be accepted.</i>		

5. After you chose a project, **contact the supervisor** (the first name in the list of supervisors – see the figure above) **to get an approval.**
6. Make sure that
- you **register to ENS491 course**
 - your **supervisor registers you to the project** (only possible after you register to ENS491)
7. Please **see ENS491/492 Student Handbook** for more details about the registration procedure and the course in general.