

Department of Industrial Engineering

IE 490 – Design In Industrial Engineering

IE 491 – Senior Design Project I

IE 492 – Senior Design Project II



**İstanbul
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Agenda



-
- General information on design courses
 - Description, credits, prerequisites
 - Research Topics
 - Deliverables
 - Teams
 - Student Project Competitions
 - FAQ
 - Experiences of current IE 492 students
 - Q&A

Senior Design Project



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- The Senior Design Project is intended to be a capstone experience that is built on the previous three years of course work in your engineering curriculum.
 - In the Industrial Engineering Program, Senior Design Project is administered through a two semester course sequence, IE 490, IE 491 and IE 492.

Senior Design Project



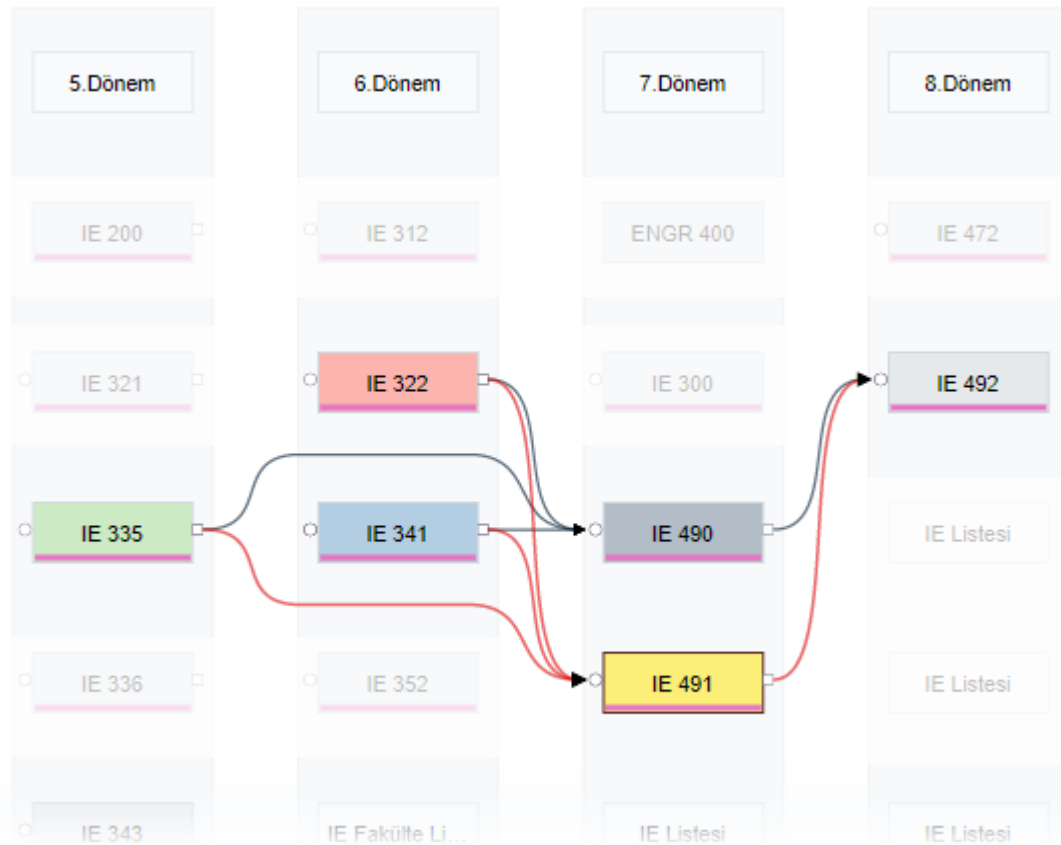
IE 490 – Design In Industrial Engineering	4 credits	}	First semester
IE 491 – Senior Design Project I	5 credits		
IE 492 – Senior Design Project II	10 credits	}	Second semester

Course Outcomes



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- IE 490 – Design In Industrial Engineering
 - Conducting experiments, collecting and analysing the data, and interpreting results
 - IE 491 – Senior Design Project I
 - Defining the problem, preparing a professional progress report.
 - IE 492 – Senior Design Project II
 - Solving a well defined engineering problem using appropriate methods, preparing a professional final project report.

Prerequisites



- IE 335 - Optimization Methods II
- IE 322 - Production Systems Design and Analysis
- IE 341 - Modeling and Simulation
- Core courses from 1st and 2nd years should be completed.
- IE 490 & IE 491 has the same prerequisites




**İstanbul Bilgi Üniversitesi
Mühendislik ve Doğa Bilimleri Fakültesi**

tarafından yürütülen

**Endüstri Mühendisliği
Lisans Programı (İngilizce)**

1 Mayıs 2017 – 30 Eylül 2019

tarihleri arasında geçerli olmak üzere MÜDEK tarafından akredite edilmiştir.


Prof. Dr. A. Bülent Özgüler
MÜDEK MAK Başkanı
30 Haziran 2017


Prof. Dr. Ramazan Yıldırım
MÜDEK Yönetim Kurulu Başkanı
30 Haziran 2017

with Great
POWER
comes Great
RESPONSIBILITY



Senior design experience criteria;

- The program must demonstrate that graduates have the ability to design, develop, implement and improve integrated systems that include people, materials, information, equipment, and energy.
- The program must include comprehensive instruction to accomplish the integration of systems using appropriate analytical, computational and experimental practices.

Some Topics and Companies (not limited to)



- Inventory Management
- Production Planning
- Facility Location and Design
- Routing
 - Fleet
 - Order Picking
 - Inventory
- Data Mining
- Customer Behaviour Analysis
 - Segmentation, Targeting
 - Customer Churn Analysis
- Make/Buy Analysis
- Scheduling
 - Machine
 - Worker
- Quality Control
- Revenue Management
 - Capacity Assignment

Keep these
potential
topics in
mind
during your
internships



Research Topics



- **C. Deniz Yenigün**

- Variable Selection, Reliability and Survival Analysis, Measures of Dependence, Network Analysis

- **Deniz Özdemir**

- Supply Network Design and Management, Reverse Logistics Operations, Decision Making under Uncertainty, Multi-objective Optimisation

- **U. Mahir Yıldırım**

- Operations Research, Transportation and Logistics Systems, Metaheuristic Approaches

- **Zehra Düzgit**

- Operations Research, Production Planning, Scheduling

- **Fatma Canan Cilingir**

- Productivity Improvement, Ergonomics, Work Systems Design

- **Genco Fas**

- Stochastic Processes, Financial Calculus, Game Theory, Actuarial Models

+ 2

Resources




Resources - Academic - Faculty

+

← → ↺ 🏠

🔒 https://www.bilgi.edu.tr/en/academic/faculty-of-engineering-and-natural-sciences/industrial-engineering/resources/

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Courses >

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Accreditation >

Academic Calendar >

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Resources

ECTS Information Package

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Master/Doctoral Programs

Prospective Students

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Resources

- [Internship Guidelines](#)
- [Senior Design Projects](#)
- [Industrial Engineering-IE 490-491-492](#)
- [Industrial Engineering-Senior Design Project Calendar](#)
- [Industrial Engineering-Senior Design Project Department Practices](#)

Previous projects
as well as
practices and
calendar.

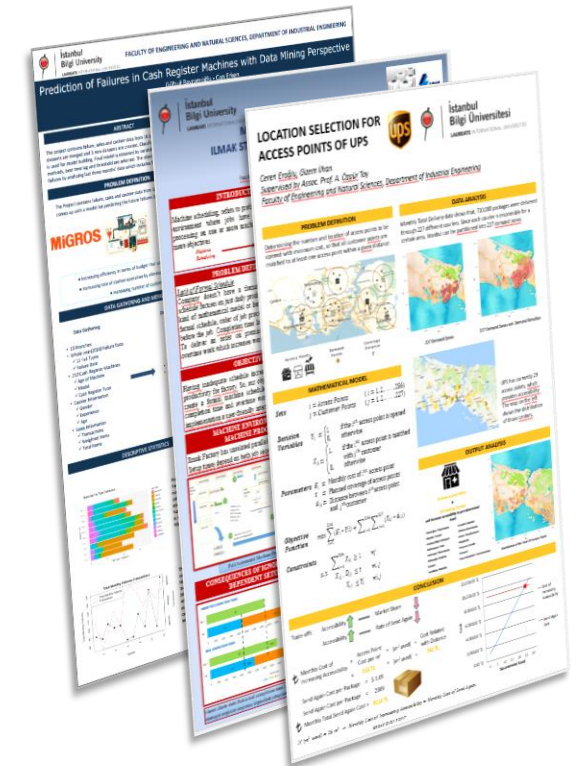
Deliverables



Report


Presentation ~15-20 min

Poster (IE 492 only)



Teams



- Teams of 5+ members 
- Preferably having diverse competencies and skills
- Write the names and IDs of the members of your team of five and potential topic to the form [in the link](#) by May 17th.
 - Note that the groups are not guaranteed to be kept as they are. They may be shuffled.
 - Those not formed a group will be assigned to a group randomly.
- The group & supervisor assignments will be announced thereafter.



What to do in summer?



-
- **Make sure you meet with your supervisor before summer break !**
 - In practice, the project starts at the beginning of June !
 - Teams are recommended to start brainstorming about the project during the summer break. Internships are a good starting point.
 - A significant progress in the project proposal will help the team for a smooth start in the fall semester.
 - Develop/refresh your skills
 - Modelling !
 - Coding !

Student Project Support Funds



TUBITAK - The Scientific and Technological Research Council of Turkey

- 2209-B



- 2019 call
- https://www.tubitak.gov.tr/sites/default/files/4000/2209-a_cagri_metni_2019.pdf

Student Project Competitions



- TUBITAK - The Scientific and Technological Research Council of Turkey



Student Project Competitions



- YAEM - Operations Research / Industrial Engineering National Congress
 - Projects will be evaluated according to the criteria such as identification and importance of the problem, accurate and appropriate use of OR/IE approaches, originality value of the project, independence from ongoing projects, possible widespread effects and applicability, success of the results obtained and writing report.



YAEM 2019

39. YÖNEYLEM ARAŞTIRMASI
VE ENDÜSTRİ MÜHENDİSLİĞİ
ULUSAL KONGRESİ

Öğrenci Proje Yarışması

Student Project Competitions



- Companies

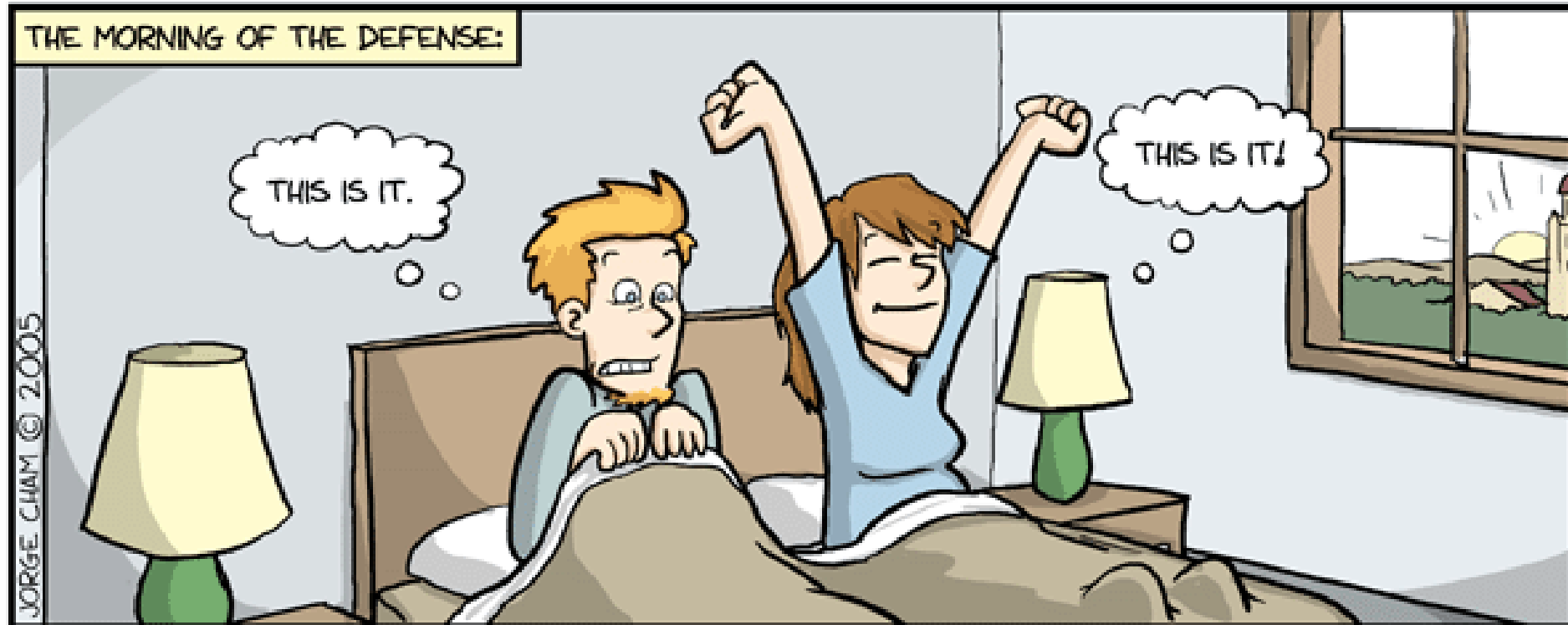


Frequently Asked Questions



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- *Can I register for IE 490/IE 491 and one of the prerequisites at the same semester?*
No
 - *Can I take IE 490/IE 491 in the spring semester and IE 492 in the fall semester?*
Yes.
 - *Can I take 491 or 492 in the summer school?*
IE 491 is not offered in the summer. Depending on the availability of the advisor and the team members, IE 492 may be offered in the summer.
 - *Can the team members change at the beginning of 7th semester?*
If necessary, small changes can be made when possible.
 - *Do all the team members get the same letter grade?*
No.
 - *If one or more students fail in IE 491, what happens to the remaining team member?*
The passing team members register for IE 492 and complete the project. The failing ones register for IE 491 and the whole procedure starts all over.

Make the most out of it!



www.phdcomics.com

Experiences of current IE 492 students



