



# **IE8900 Graduation Project**

## **Guidelines**

**2023-2024**

**Spring**

# Agenda

- Milestones
- Announcements
- Forms
- Grading
- Advisors

# General Information

- Each group → 5 students
- A real problem with the collaboration of a company should be studied.
- Necessary data should be collected/studied.
- IE methods/algorithms/techniques should be applied to solve the problem on hand.
- The results should be analyzed/discussed.
- Insights & recommendations should be stated.

# Milestones for 2023-2024 Spring

Advisor  
Preference Form

- Due Date:  
08.12.2023



Advisor  
Agreement Form

- Due Date:  
15.12.2023

İSTANBUL KÜLTÜR UNIVERSITY  
FACULTY OF ENGINEERING  
DEPARTMENT OF INDUSTRIAL ENGINEERING

IE8900 Graduation Project  
Advisor Preference Form

• Due Date:  
08.12.2023

Student	
(1) Number / Name / Signature	
(2) Number / Name / Signature	
(3) Number / Name / Signature	
(4) Number / Name / Signature	
(5) Number / Name / Signature	
Advisor Alternatives	
1. Title / Name	
2. Title / Name	
3. Title / Name	
4. Title / Name	
5. Title / Name	
6. Title / Name	
7. Title / Name	
Date (DD/MM/YYYY)	
Signature of the course coordinator (Assist. Prof. Dr. İlayda Ülkü)	

# Advisor List

<b>Advisors</b>
Prof. Dr. Tülin Aktin
Prof. Dr. Murat Ermiş
Assist. Prof. Dr. Zeynep Gergin
Assist. Prof. Dr. İbrahim Ethem Tarhan
Assist. Prof. Dr. Duygun Fatih Demirel
Assist. Prof. Dr. Okay Işık
Dr. Tuğçe Beldek

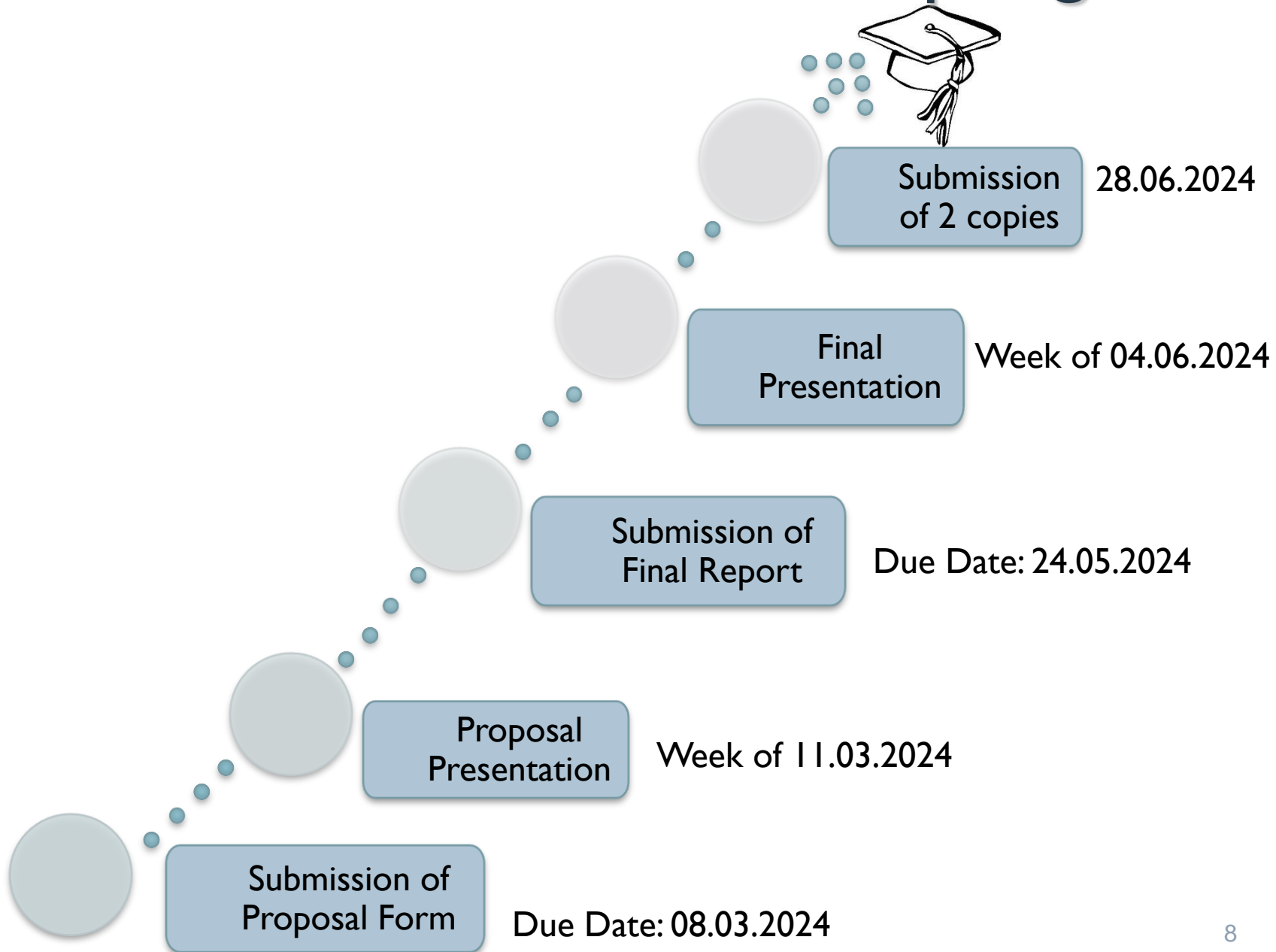
İSTANBUL KÜLTÜR UNIVERSITY  
FACULTY OF ENGINEERING  
DEPARTMENT OF INDUSTRIAL ENGINEERING

• Due Date:  
15.12.2023

IE8900 Graduation Project  
Advisor Agreement Form

Student	
(1) Number / Name / Signature	
(2) Number / Name / Signature	
(3) Number / Name / Signature	
(4) Number / Name / Signature	
(5) Number / Name / Signature	
Advisor	
Title / Name	
Signature	
Date (DD/MM/YYYY) (to be filled by the advisor)	

# Milestones for 2023-2024 Spring





**İSTANBUL KÜLTÜR UNIVERSITY**  
**FACULTY OF ENGINEERING**  
**DEPARTMENT OF INDUSTRIAL ENGINEERING**

**IE8900 Graduation Project - Proposal Form**

<b>Proposal</b>	
<b>Title:</b>	
<b>Summary (maximum 1200 characters):</b>	
<b>Student</b>	
<b>(1) Number / Name / Signature</b>	
<b>(2) Number / Name / Signature</b>	
<b>(3) Number / Name / Signature</b>	
<b>(4) Number / Name / Signature</b>	
<b>(5) Number / Name / Signature</b>	
<b>Advisor</b>	
<b>Title / Name, Family Name</b>	
<b>Signature of the advisor</b>	
<b>Date (DD/MM/YYYY)</b> <b>(to be filled by the advisor)</b>	

# Forms

The screenshot shows the Istanbul Kültür University website. The navigation menu includes: Our University, Academic, Student, Alumni, Life at IKU, e-University, 360° VIRTUAL TOUR, ACADEMIC CALENDAR, QUICK ACCESS, SEARCH, and TR. The main menu has: INFORMATION, STUDENT, STAFF, ACADEMIC PACKAGE, POSTGRADUATE, and CONTACT. The 'STUDENT' menu is open, showing: GRADUATION PROJECT, COOPERATION PROTOCOLS, DOUBLE MAJOR, VERTICAL TRANSFER, MINOR PROGRAM, HORIZONTAL TRANSFER, COURSE CONTENTS, and INTERNSHIP. The 'GRADUATION PROJECT' page is displayed, with a red circle highlighting the section title and the list of forms:

- Advisor Preference Form
- Advisor Agreement Form
- Graduation Project Proposal Phase Details
- Graduation Project Proposal Form
- Graduation Project Final Evaluation Process Details
- Graduation Project Guidelines

The right sidebar of the page lists: Graduation Project, Cooperation Protocols, Double Major, Vertical Transfer, Minor Program, Horizontal Transfer, Course Contents, and INTERNSHIP.

# Forms and Other Resources (Spring 2023-24)

The screenshot displays the CATS (Central Academic Tracking System) interface. At the top, the CATS logo is visible. Below it, a navigation bar contains several course and semester dropdown menus, including 'IE8900 - GP Spring 2024'. A red arrow points from the title above to this specific dropdown menu. The main content area is titled 'IE8900 GRADUATION PROJECT Milestones for 2023-2024 Spring'. It features a vertical timeline of five milestones, each represented by a blue box with a graduation cap icon and a date. The milestones are: 'Submission of Proposal Form' (Due Date: 08.03.2024), 'Proposal Presentation' (Week of 11.03.2024), 'Submission of Final Report' (Due Date: 24.05.2024), 'Final Presentation' (Week of 04.06.2024), and 'Submission of 2 copies' (28.06.2024). The interface also includes a sidebar with various icons and a top navigation bar with 'GENEL BAKIŞ' and 'Hoşgeldiniz'.

**IE8900 GRADUATION PROJECT**  
**Milestones for 2023-2024 Spring**

- Submission of Proposal Form Due Date: 08.03.2024
- Proposal Presentation Week of 11.03.2024
- Submission of Final Report Due Date: 24.05.2024
- Final Presentation Week of 04.06.2024
- Submission of 2 copies 28.06.2024

# Grading of the Project

- **Presentation of the Proposal** **15%**
- **Final Project Report** **60%**
  - Individual Performance 5%
    - Interdisciplinary Teamwork Score 2%
    - Individual Work Score 1%
    - Written and Verbal Communication Score 2%
  - Content 40%
  - Format 15%
- **Presentation of the Final Project** **25%**

100%

# Evaluation Form for Proposal Presentation (15 Points)

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Proposal Form	10%										
Problem Definition	20%										
Proposed Methodology	20%										
Oral Presentation	20%										
Response to Questions	20%										
Project Schedule Plan	10%										

# Evaluation Form for Final Presentation (25 Points)

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Slide Preparation	20%										
Oral Presentation	30%										
Response to Questions	50%										



# Evaluation Form for Final Presentation (25 Points)

- A student who does not attend the final presentation receives a letter grade of **“F”** as the final grade and is considered unsuccessful in the course.

# Evaluation Form for Final Report (40 Points) by All Advisors

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Abstract	5%										
Introduction	10%										
Literature Review	5%										
Problem Definition	15%										
Methodology	20%										
Implementation and Results	30%										
Conclusion	10%										
Recommendation for Future Studies	5%										



# Evaluation Form for your Individual Performance of **Final Report** (5 Points) by Your Advisor

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Interdisciplinary Teamwork	40%										
Individual Work	20%										
Written and Verbal Communication Score	40%										

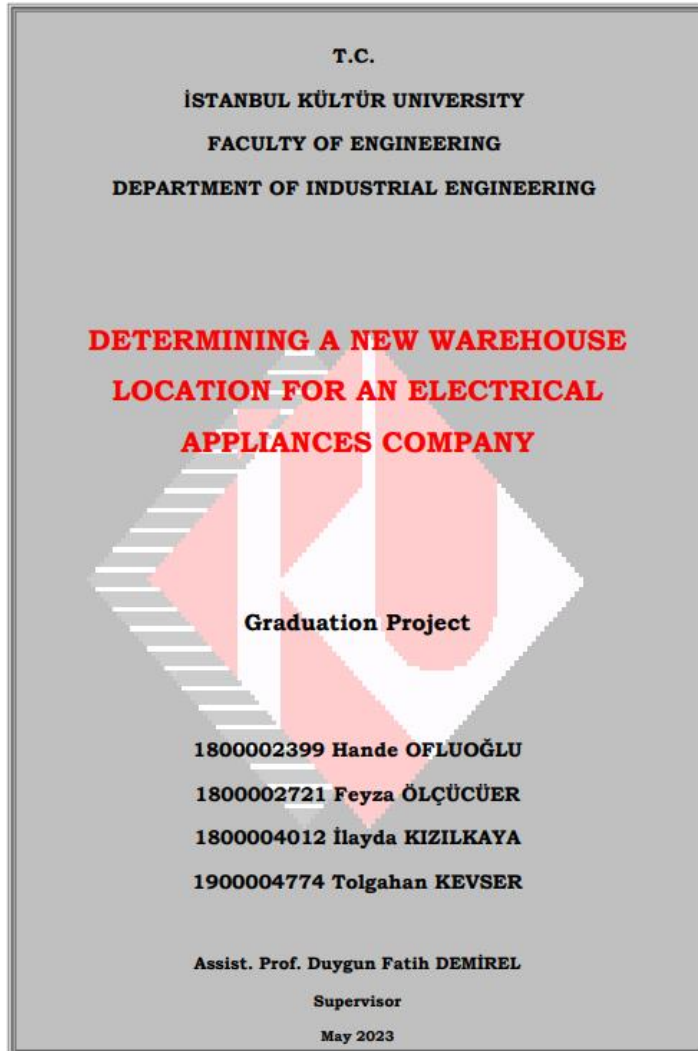
# Evaluation Form for Final Report (15 Points) for Format

Student Name:											
Evaluation Criteria	Weights	1	2	3	4	5	6	7	8	9	10
Wording Originality Ratio	20%										
Margins	20%										
Table of Contents and Page Numbers	20%										
Project Schedule	5%										
Tables and Figures	20%										
References and Citation	15%										

# Evaluation Form for Final Report

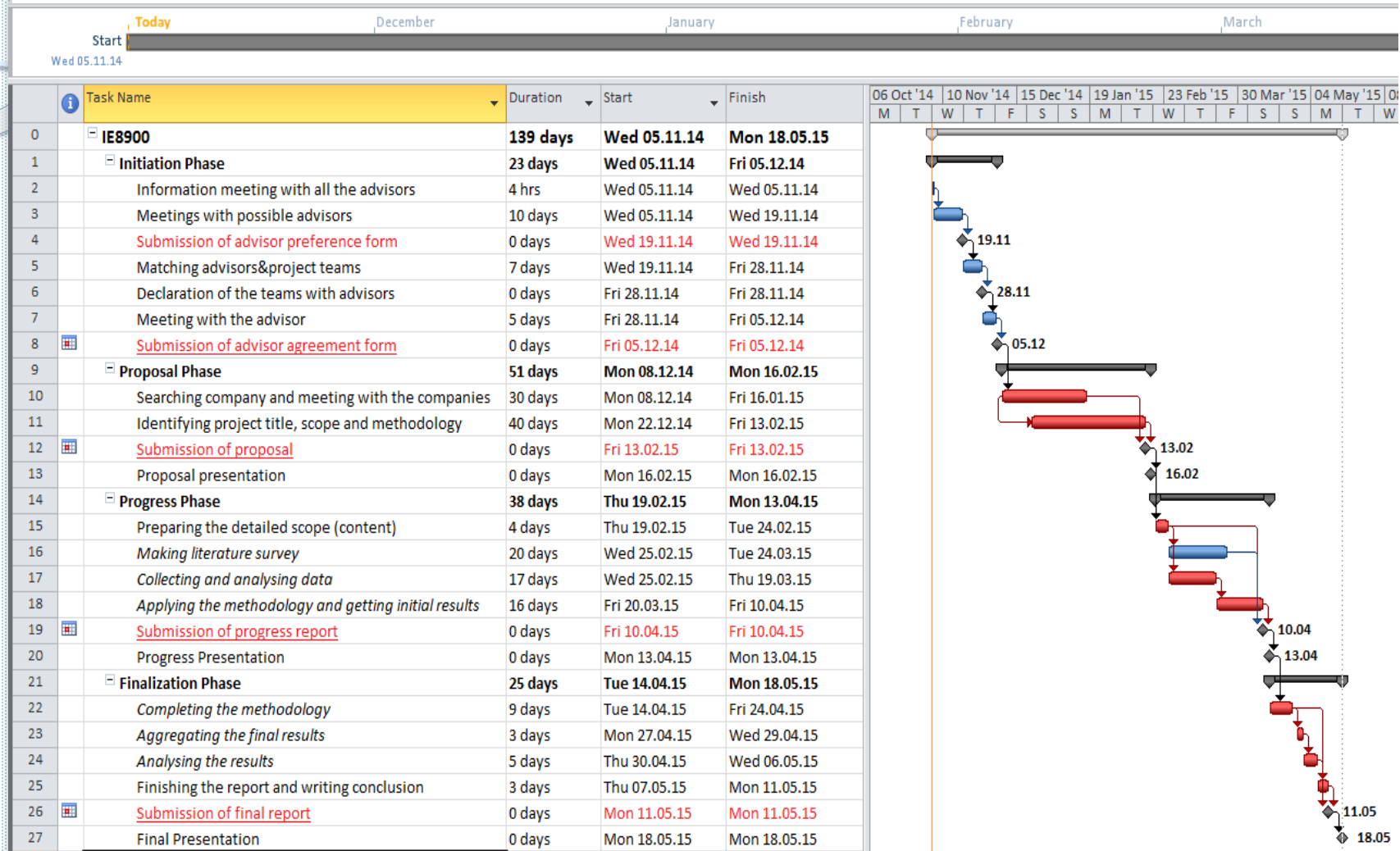
- Students who have submitted **unacceptable reports** (format / content) are given an **“E” grade**.
- You must **complete** the deficiencies **within 10 days** from the date of presentation.
- The students who complete the required studies within this period are given a grade of success, and the grades of the students who **fail to complete** the report become **“F”**.

# Report Template



- Graduation Project **Reports** must be written in the format provided by the Template (Course CATS page / Resources).
- The template is a MS Word file; all the headings, paragraph and font settings are arranged.
- It is very **important** to use to Template and the correct referencing (APA) format (Course CATS page / Resources).

# Project Schedule (Example)








# Originality Check

- The report gets 10 when the wording originality is over 95%.
- It gets 9 when the originality is between 90% - 94%.
- It gets 8 when the originality is between 85% - 89%
- It gets 7 when the originality is between 80% - 84%.
- It gets 6 when the originality is between 75% - 79%.
- It gets 5 when the originality is between 70% - 74%.
- It gets 4 when the originality is between 65% - 69%.
- It gets 3 when the originality is between 60% - 64%.
- It gets 2 when the originality is between 55% - 59%.
- It gets 1 when the originality is between 50% - 54%.
  
- **The report fails when the originality is below 49%.**

# Attendance

İSTANBUL KÜLTÜR UNIVERSITY  
DEPARTMENT OF INDUSTRIAL ENGINEERING  
IE8900 GRADUATION PROJECT  
SPRING 2023-2024  
WEEKLY MEETING ATTENDANCE SHEET

Week No	Date	Student 1	Student 2	Student 3	Student 4	Student 5
						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

# Group Workload

İSTANBUL KÜLTÜR UNIVERSITY  
DEPARTMENT OF INDUSTRIAL ENGINEERING  
IE8900 GRADUATION PROJECT  
SPRING 2023-2024  
GROUP WORKLOAD

No	Part	Responsible Student(s)
1	Introduction	
2	Literature Review	
3	Company Information	
4	Problem Definition	
5	Methodology	
6	Implementation: Input Data	
7	Implementation: Results	
8	Conclusion	
9	References	
10	Abstract	
11	Özet	
12	Acknowledgement	
13	Appendices	
14	Format Control: Margins	
15	Format Control: Table of Contents	
16	Format Control: List of Figures	
17	Format Control: List of Tables	
18	Format Control: Tables & Figures	
19	Originality	



# Attendance

- If attendance of a student is **below 70%**, student will not allowed to attend the final presentation.
- If attendance of a student is **below 50%**, student will not get any points from the final phase (presentation + report).



**TÜBİTAK**

**UNIVERSITY STUDENTS DOMESTIC**

**RESEARCH PROJECTS SUPPORT**

**PROGRAM PARTICIPATIONS**

❑ **Dođan Aybars İLHAN, Tuđçe HOŞGÖR**

“Karma Model Montaj Hattı Dengelemesi ve Model Sıralaması”

Eylöl 2013 – Haziran 2014

*Danışman:* Doç. Dr. Fadime ÜNEY-YÜKSEKTEPE

❑ **Sıdika ÇARKACI, Hakan COŞKUN**

“Envanter Alanı Paylaşımı ve Montaj Hattı Dengeleme Problemlerine Matematiksel Programlama Yaklaşımı”

Ocak 2014 – Haziran 2014

*Danışman:* Doç. Dr. Rifat Gürcan ÖZDEMİR

❑ **Kaan ALİEFENDİOđLU**

“Uçak Bakım Çizelgelemesine Bir Matematiksel Modelleme Yaklaşımı”

Ocak 2014 – Haziran 2014

*Danışman:* Doç. Dr. Fadime ÜNEY-YÜKSEKTEPE



**TÜBİTAK**  
**INDUSTRY FOCUSED**  
**UNDERGRADUATE THESIS SUPPORT**  
**PROGRAM PARTICIPATIONS**

❑ **Burak YILDIZ, Hazal ULUATA, Rana YILMAZ,  
Oğuzhan ÖKSÜZ**

“Üretim Montaj Hattı ile Malzeme Lojistiği Arasındaki Senkronizasyonun Optimize Edilmesi”

Şubat 2014 – Haziran 2014

*Danışman:* Doç. Dr. Rifat Gürcan ÖZDEMİR

❑ **Tuba ERDEM , Beyza KEYDAL**

“İçecek Üretim Sistemi için Sıra Bağımlı Hazırlık Süreleri Altında Üretim Hattı Planlama ve Çizelgeleme Benzetim Modeli”

Şubat 2015 – Haziran 2015

*Danışman:* Doç. Dr. Rifat Gürcan ÖZDEMİR

❑ **Suzan GÜRELİ, Şimal AYSEVER**

“Denetçi Rotalama Problemine Bir Matematiksel Modelleme Yaklaşımı”

Şubat 2015 – Haziran 2015

*Danışman:* Doç. Dr. Fadime ÜNEY-YÜKSEKTEPE

❑ **Aylin YAĞMAN, Edanur ÇANKAYA, Kübra DELİGÖZ**  
" Unilever Gıda Ürünlerinde Stok Yönetimi Optimizasyonu İçin Bir Karar Destek Sistemi"  
Şubat 2016 – Haziran 2016  
*Danışman:* Prof. Dr. Tülin AKTİN

❑ **Yaprak DOLGUN, Aylin BAYKAN, Gözde M. DEMİRCİ**  
" UPS Türkiye'de Optimizasyon Tabanlı Network Tasarımı"  
Şubat 2016 – Haziran 2016  
*Danışman:* Doç. Dr. Fadime ÜNEY-YÜKSEKTEPE

❑ **Ahmet KARAKUŞ, Can AKBAŞ**  
"Ford-Otosan Yeniköy Fabrikası Motor Montaj Proseslerinde Değer Akış Şeması Çalışması"  
Eylül 2016 – Ocak 2017  
*Danışman:* Yrd. Doç. Dr. Zeynep GERGİN

❑ **Simge Ünek, Derya Çöpürkaya, Belma Nüvit Karagöl, Kubilay Kodaz**  
"THY Teknik'in Stok Yönetimi için Analitik Bir Yaklaşım"  
Şubat 2018 – Haziran 2018  
*Danışman:* Prof. Dr. Tülin AKTİN

❑ **Sevra Çiçekli, Merve Mutlu, Neslişah Aral**

"Penti Firmasındaki Belirli Bir Kampanyaya Müşterilerin Geri Dönüşlerinin Veri Madenciliği Yöntemleri ile Tahmin Edilmesi"

Şubat 2018 – Haziran 2018

*Danışman:* Doç. Dr. Fadime ÜNEY-YÜKSEKTEPE

❑ **Buket Bodur, Gökcan Akman, Rojda Nisa Sönmez ve Aydan Altınyar**

"Bir İlaç Firmasında Hammadde Stok Seviyelerinin Optimizasyonu",

*Danışman:* Doç. Dr. Fadime ÜNEY-YÜKSEKTEPE

❑ **Berk Buldanlı, Turabi Şahin, Lütfi Elçi ve Mert Ekinci**

"Mercedes Benz Türk A.Ş.'de Veri Madenciliği Yaklaşımı ile Kalite Kontrol Süreçlerinin İyileştirilmesi"

*Danışman:* Dr. Öğr. Üyesi Zeynep Gergin



ÜNİVERSİTE ÖĞRENCİLERİ  
SANAYİYE YÖNELİK ARAŞTIRMA  
PROJELERİ DESTEĞİ  
ÇAĞRI DUYURUSU

# 2209 -B



2021 / 2

Bilim İnsanı Destek Programları Başkanlığı  
BİDEB

**TÜBİTAK  
UNIVERSITY  
STUDENTS'  
INDUSTRIAL  
RESEARCH  
PROJECTS SUPPORT  
PROGRAM  
PARTICIPATION**



❑ **Ece Malkoç, Buket Yekdeř, Bilgesu Bayır ve  
Yasemin Kalender**

"E-Ticaret Depo Konumu Belirleme"

Eylül 2021 – Şubat 2022

*Danışman:* Dr. Öğr. Üyesi Duygun Fatih Demirel



**Prof. Dr. Tülin Aktin**

Project Title	Topic	Methodology	Presentations / Achievements	Year
An Analytical Approach to Medical Waste Management in Istanbul	Vehicle Routing	<ul style="list-style-type: none"> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>EURO2010 (Lisbon)</li> </ul>	2010
Analyzing the Effect of Different Marketing Strategies on the Production Planning System of EVYAP	Production Planning	<ul style="list-style-type: none"> <li>Regression Analysis</li> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>YAEM/İIE2013 (İstanbul)</li> </ul>	2013
A Multi-Stage Production Planning Model for a Stainless Steel Kitchenware Manufacturer	Production Planning and Scheduling	<ul style="list-style-type: none"> <li>Mathematical Modelling</li> <li>Scheduling Rules</li> <li>Failure Mode and Effects Analysis</li> </ul>	<ul style="list-style-type: none"> <li>EURO2015 (Glasgow)</li> </ul>	2015
A Decision Support System for Optimizing the Food Stock Distribution in Unilever	Inventory Management	<ul style="list-style-type: none"> <li>Modelling in Excel</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2016 (İzmir)</li> <li>OR2016 (Hamburg)</li> <li>Support granted by TÜBİTAK 2209/B program</li> </ul>	2016
A Two-Stage Approach for Aircraft Maintenance Scheduling in Turkish Technic	Scheduling	<ul style="list-style-type: none"> <li>Distribution Fitting</li> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2017 (İstanbul)</li> </ul>	2017
An Analytical Approach to the Warehouse Location Problem of Pürsu in Istanbul	Facility Location	<ul style="list-style-type: none"> <li>Weighted Moving Average Method</li> <li>Median Location Rule</li> <li>Analytic Hierarchy Process</li> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2018 (Eskişehir)</li> </ul>	2018
Analyzing the Repair Process of Aircraft Engines in Turkish Technic by Lean Tools	Lean Management	<ul style="list-style-type: none"> <li>Value Stream Mapping</li> <li>Pareto Analysis</li> <li>Cause and Effect Diagram</li> <li>5S Methodology</li> <li>5 Whys Analysis</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2018 (Eskişehir)</li> </ul>	2018
Inventory Management at Automotive and Aviation Industries: Cases of Borusan Otomotiv and Turkish Technic	Inventory Management	<ul style="list-style-type: none"> <li>ABC Analysis</li> <li>Distribution Fitting</li> <li>Modelling in Excel</li> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2018 (Eskişehir)</li> <li>Support granted by TÜBİTAK 2209/B program</li> </ul>	2018
An Analytical Approach for Analyzing the Impact of Risks on Production Planning: Case of Öztiryakiler	Production Planning	<ul style="list-style-type: none"> <li>Failure Mode and Effects Analysis</li> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2019 (Ankara)</li> <li>ISPR2019 (Vienna)</li> </ul>	2019
An Analytical Approach to Machine Layout Design at a High-Pressure Die Casting Manufacturer	Plant Layout	<ul style="list-style-type: none"> <li>ABC Analysis</li> <li>Hollier Method</li> <li>Mathematical Modelling</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2021 (Online-İstanbul)</li> <li>ISPR2021 (Online-Antalya)</li> </ul>	2021
Analyzing the Operations at a Textile Manufacturer's Logistics Center Using Lean Tools	Lean Management	<ul style="list-style-type: none"> <li>Value Stream Mapping</li> <li>Pareto Analysis</li> <li>Cause and Effect Diagram</li> <li>5 Whys Analysis</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2023 (Gaziantep)</li> <li>IMSS2023 (Sakarya)</li> </ul>	2023
An Excel-Based Stock Management System for a Leather Label Manufacturer	Inventory Management	<ul style="list-style-type: none"> <li>ABC Analysis</li> <li>Modelling in Excel</li> <li>Economic Analysis (Break-Even, Payback Period, Cost-Benefit)</li> </ul>	<ul style="list-style-type: none"> <li>YAEM2023 (Gaziantep)</li> <li>ISPR2023 (Online-Antalya)</li> </ul>	2023



**Assist. Prof. Dr.  
Zeynep Doğruöz-Gergin**

TOPIC	TITLE	COMPANY
QUALITY PLANNING	A <b>QFD</b> STUDY FOR ANALYSING BRAND PERCEPTION AND PRODUCT DEVELOPMENT	TESAN
	<b>QFD</b> IMPLEMENTATION FOR CRM PROCESSES IN A LOGISTICS COMPANY	SERTRANS LOGISTICS
QUALITY CONTROL	DEVELOPING <b>ACCEPTANCE SAMPLING</b> PROCEDURES FOR INCOMING PROCESSES OF A RETAILER COMPANY	DE FACTO
	<b>STATISTICAL PROCESS CONTROL</b> STUDY IN FMCG SECTOR	COCA COLA
QUAL./ PROCESS IMPROVEMENT	A DATA MINING APPROACH TO <b>PROCESS IMPROVEMENT</b> AT MERCEDES BENZ	MERCEDES*
	<b>PROCESS IMPROVEMENT</b> STUDY TO DECREASE EXTERNAL FAILURE COSTS	EKINLER ELEKTRONICS

TOPIC	TITLE	COMPANY
QUALITY COSTS	QUALITY COSTS ANALYSIS TO REDUCE FAILURE COSTS	YILDIZ CAM
LEAN MANAGEMENT	VALUE STREAM MAPPING IN AN APPAREL SUPPLIER FOR WASTE REDUCTION	ÖZAK TEXTILE
	A VALUE STREAM MAPPING STUDY FOR GROUND OPERATIONS PROCESS	ATLAS AIRLINES
	IMPLEMENTATION OF LEAN MANUFACTURING TECHNIQUES IN AN AUTOMOTIVE COMPANY	FORD*
PROJECT MANAGEMENT	A STUDY ON IMPROVING THE RISK MANAGEMENT PERFORMANCE OF PROJECTS IN A TELECOM VENDOR	ERICSON
	A PROJECT SELECTION AND SCHEDULING PROBLEM CONSIDERING RESOURCE CONSTRAINTS	GM PRINTING



**Prof. Dr. Murat Ermiř**

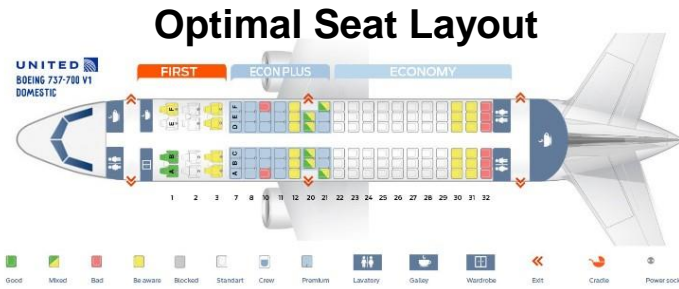


# RESEARCH INTERESTS

- ❖ *Modeling & Optimization*
- ❖ *Computational Intelligence*
- ❖ *Data Analytics*
- ❖ *Multi-Objective Dynamic Optimization Problems*
- ❖ *Simulation*



# Application domains: examples



### Vehicle Routing



### Analytics in Industry



### Scheduling



### Disaster Management



### U-space Flow Optimization

# SOME PAST PROJECTS

- ❖ *Aircraft crash analysis using data mining techniques (Accepted by an IEEE conference –ASYU)*
- ❖ *Improving inventory management through customer segmentation and demand forecasting in GOLF dondurma*
- ❖ *Optimization of Raftürk's production processes*
- ❖ *Inventory management for wire harness assembly line in Forchner*
- ❖ *Prediction of last kilometer delivery requests in Ptt cargo*
- ❖ *Simulation and improvement of warehouse operations of LCW e-commerce.*
- ❖ *Application of AHP and ANP methods to electric vehicle selection*



**Assist. Prof. Dr.  
İbrahim Ethem Tarhan**



**Engineering  
Economics**



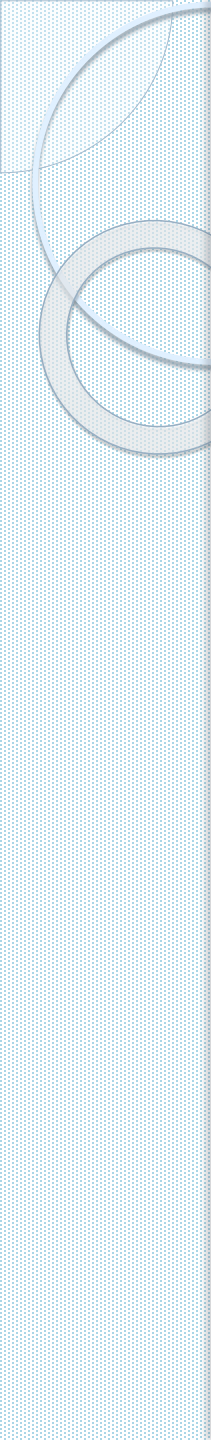
**Finance**

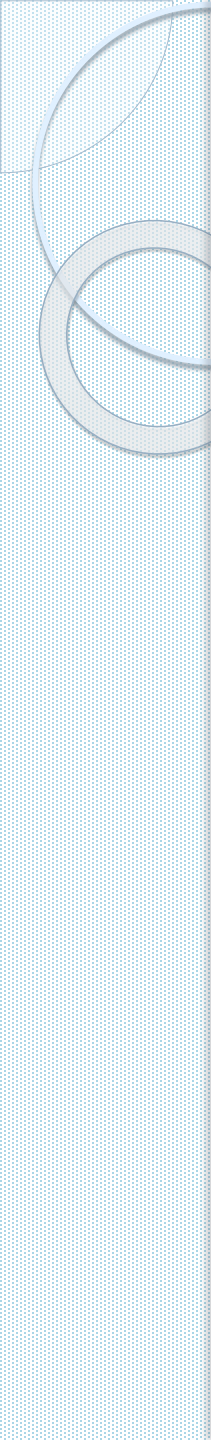


**Marketing**



**Strategic  
Planning**

- 
- **Marketing Management:** I bring practical insights into the world of marketing, helping students understand the dynamics of market trends, consumer behavior, and strategic positioning.
  - **Economics:** I'm teaching micro and macro-economic principles and their application in the industrial context.
  - **Financial and Cost Accounting:** Teaching GAAP, financial and cost accounting concepts.
  - **Strategic Planning:** I am passionate about strategic planning, helping students develop a strategic model and the ability to formulate and execute plans for their organizational success.
  - **Engineering Management:** Teaching the management concepts to my graduate students.

- 
- **Marketing Engineering:** Teaching marketing concepts to students so that they can be able to combine marketing way of thinking for engineering practices.
  - **Financial Management:** Teaching students how to compare and contrast companies according to their financial conditions in different industrial structures.
  - **Thesis Courses:** With experience in guiding students through the thesis process, I offer mentorship in research design, methodology, and analysis of results.
  - **Engineering economy:** Teaching methodologies in order to justify proposed projects.



**Assist. Prof. Dr.  
Okay Işık**

YEAR	Previous years' projects by Assist. Prof. Okay Işık	Optimization	Statistical Process Control	Design of Experiments	Discrete Event Simulation
2016-2017	Development of a high-precision slingshot via statistically designed experiments			√	
2018-2019	3-D bin packing optimization study	√			
2019-2020	Improving order picking operations via discrete event simulation in EKOL Logistics			√	√
2020-2021	Application of DMAIC cycle for manufacturing processes at a home appliance company: VESTEL		√		
2021-2022	Application of Kanban technique to storage system in an automotive company: OTOKAR			√	√
2021-2022	Reducing cycle time with discrete event simulation for an AC company: FRITERM			√	√
2022-2023	Determining optimum assembly line team assignment using mathematical modeling based on monthly TV production plan in ARÇELİK Company	√			



**FILE** Home Animate Draw Run View Tools Developer

Attach Detach Paste Copy Cut Paste Select and Zoom Find... Submodel Find... Navigation

Connect Auto-Connect Smart Connect Connector Arrows

Select All Expression Builder Arrange

Check Model Review Errors

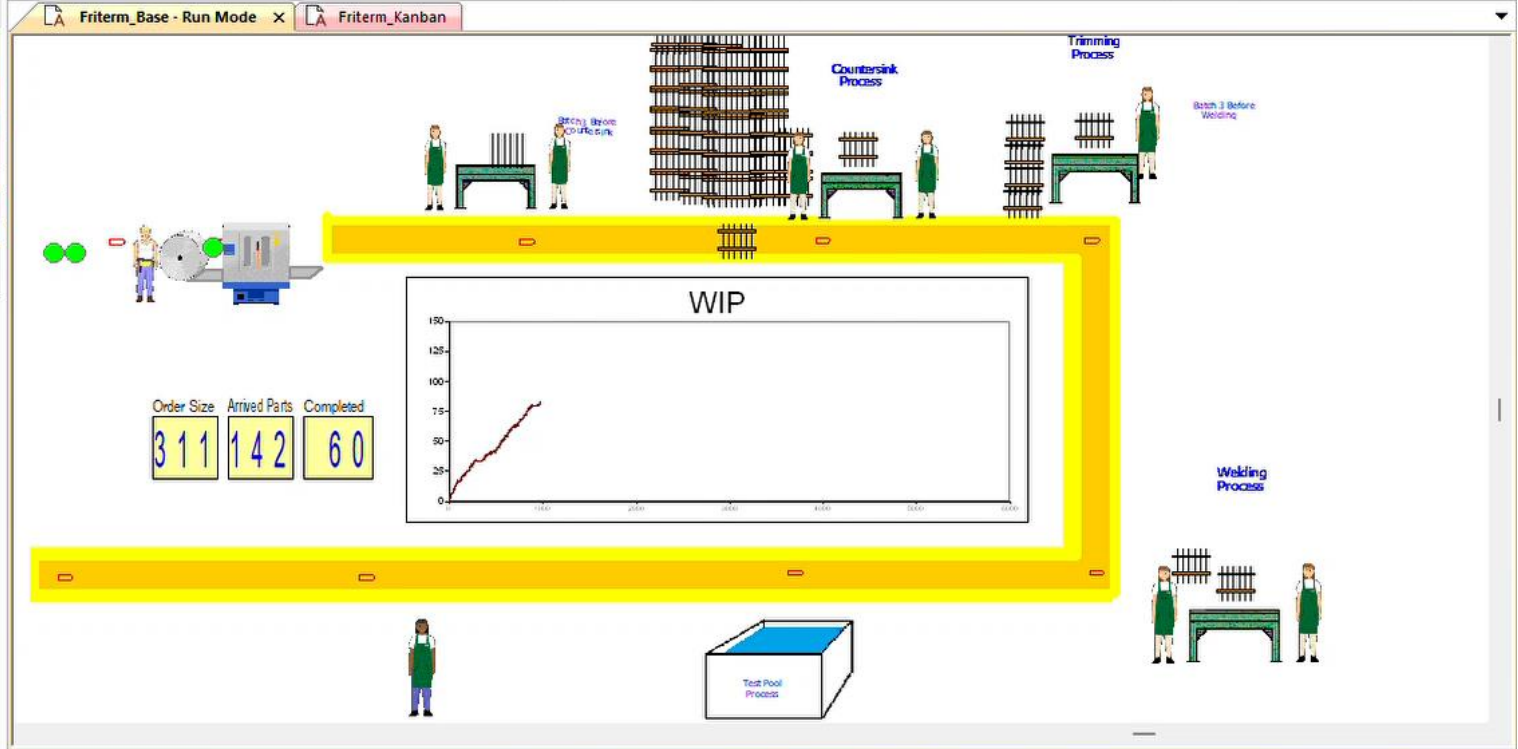
Run

Arena Help Release Notes Arena Product Manuals Help and Manuals

Project Bar

- Discrete Processing
- Animation
- Decisions
- Blocks
- Grouping
- Data Definition
- Input Output
- Material Handling
- Reports
- Navigate

Top-Level  
 anime (a)



**FILE** Home Animate Draw Run View Tools Developer

Attach Detach Paste Copy Cut  
 Select and Zoom Find...  
 Template Clipboard Navigation

19% AB VAC Replace...  
 Submodel Layers...  
 Connect

Auto-Connect  
 Smart Connect  
 Connector Arrows  
 Connections

Select All Expression Builder Arrange  
 Editing

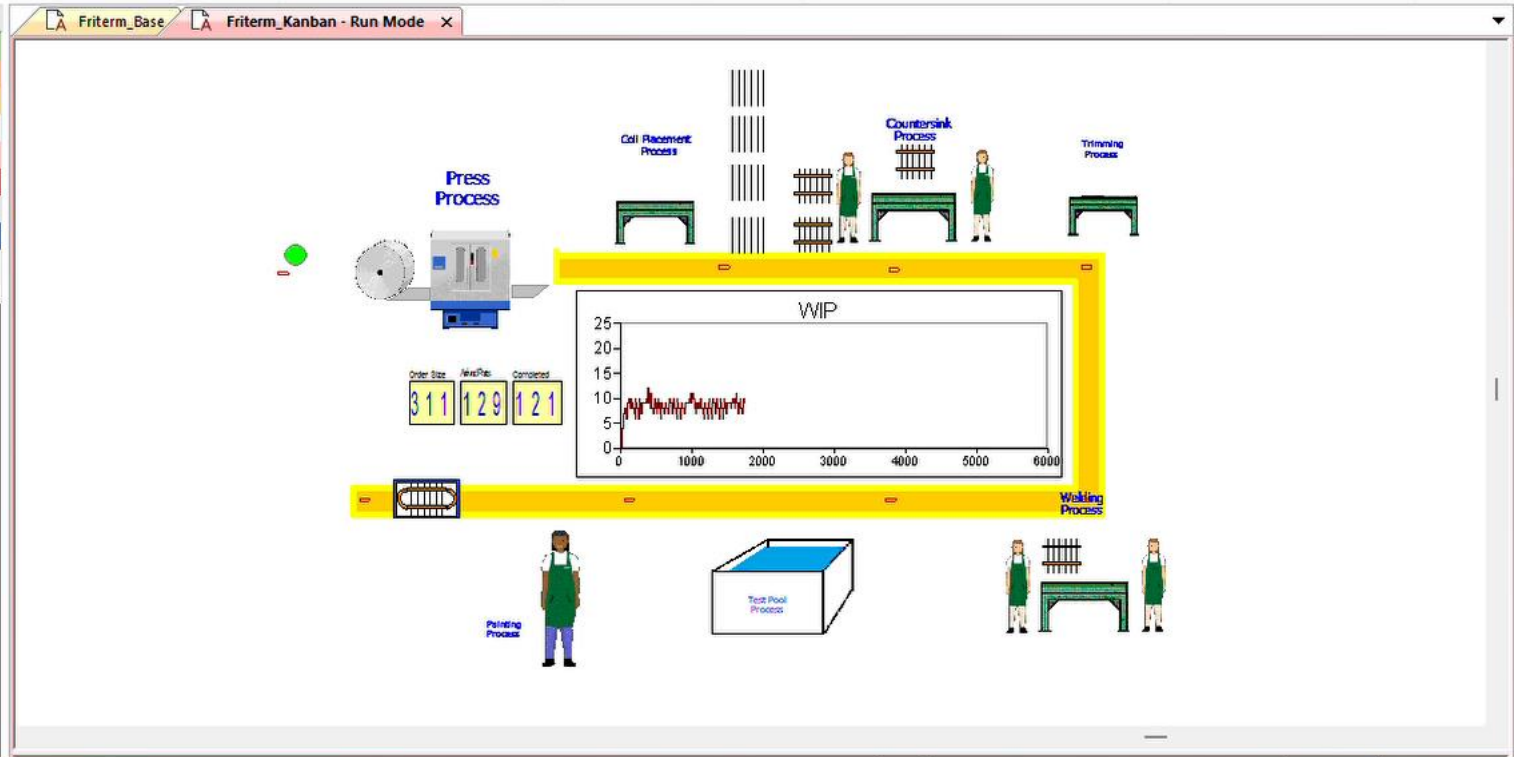
Check Model  
 Review Errors  
 Run

Arena Help Release Notes Arena Product Manuals  
 Help and Manuals

Project Bar

- Discrete Processing
- Animation
- Decisions
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- Grouping
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- Reports
- Navigate

Top-Level  
 anime (a)



FILE Home Animate Draw Run View Tools Developer

Attach Detach Template Clipboard Paste Copy Cut Select and Zoom Find... Submodel Navigation 27% Replace... Layers... Connect Auto-Connect Smart Connect Connector Arrows Select All Expression Builder Arrange Check Model Review Errors Run Arena Help Release Notes Arena Product Manuals Help and Manuals

Project Bar Friterm\_Base Friterm\_Kanban 04\_Advanced - Run Mode

Discrete Processing Animation Decisions Blocks Grouping Data Definition Input Output Material Handling Basic Process Advanced Transfer Advanced Process Reports Navigate

Topkapi Aksaray Sirkeci

Average Waiting Time  
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No objects selected. 1 / 1 | (83.5211 Minutes) Monday, November 27, 2023 | Running... | (17916, -907)

FILE Home Animate Draw Run View Tools Developer

Attach Detach Paste Copy Cut Template Clipboard

Select and Zoom Find... Submodel Navigation

26% Replace... Layers... Connect

Auto-Connect Smart Connect Connector Arrows Connections

Select All Expression Builder Editing

Arrange

Check Model Review Errors Run

Arena Help Release Notes Help and Manuals

Arena Product Manuals

Project Bar

Otokar\_Base Otokar\_Optimum - Run Mode

Animation

Data Definition

Discrete Processing

Blocks

Decisions

Grouping

Input Output

Elements

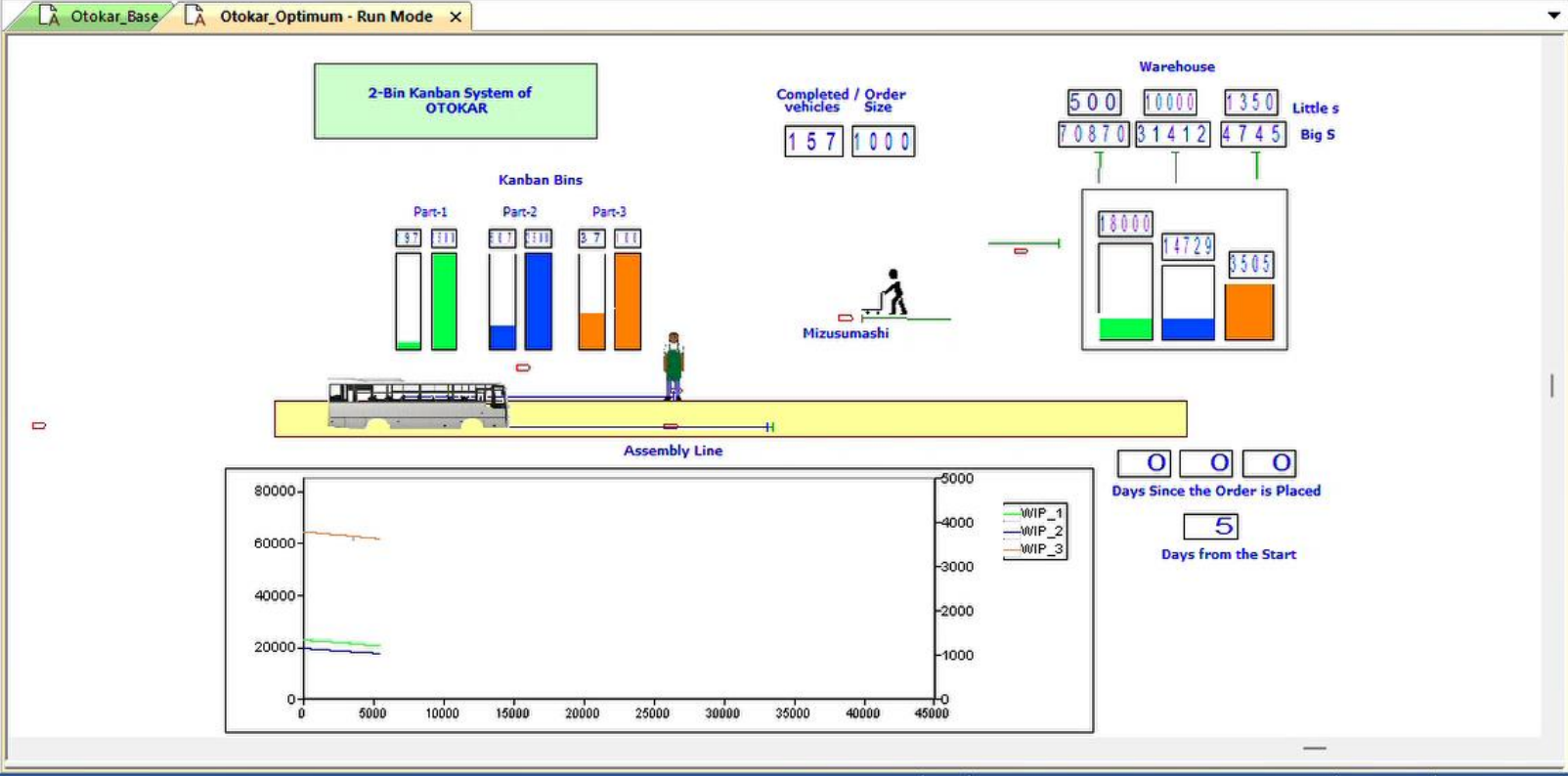
Material Handling

Reports

Navigate

Top-Level

- Animation1 (a)
- Assembly Submodel
- Bus Submodel
- Inventory Control Submodel
- Mizusumashi Submodel
- Submodel for Kanban Box
- Submodel for Part Replen





**Assist. Prof. Dr.  
Duygun Fatih Demirel**

# Research Area:

- Facility Location and Network Design Problem
- Disaster management
- Optimization problems in wastewater management
- System dynamics and systems engineering applications
- Fuzzy modeling
- Time series analysis
- Demographic modeling and forecasting

# Ongoing Studies

- Analyzing the Dynamic Impacts of the Expected Istanbul Earthquake on the Economy of Istanbul:An Input-Output Economic Model Integrated to a System Dynamics Model (TÜBİTAK-1001 project)
- Examining the Effects of Mucilage in the Sea of Marmara on Fisheries, Tourism and Maritime Transportation via System Dynamics Approach (IKU-BAP project)
- A Dynamic Model for Wastewater Treatment Facility Location and Network Design Problem
- Designing A Forward and Reverse Geocoding System Tool for a Cargo Company (Conculty service for a TÜBİTAK-1707 project)
- Examining the Impacts of Military Expenditures on Economic Productivity:A System Dynamics Approach
- Determining the Earthquake Debris Collection Areas for the European Side of Istanbul (under consideration for İKU-BAP project)

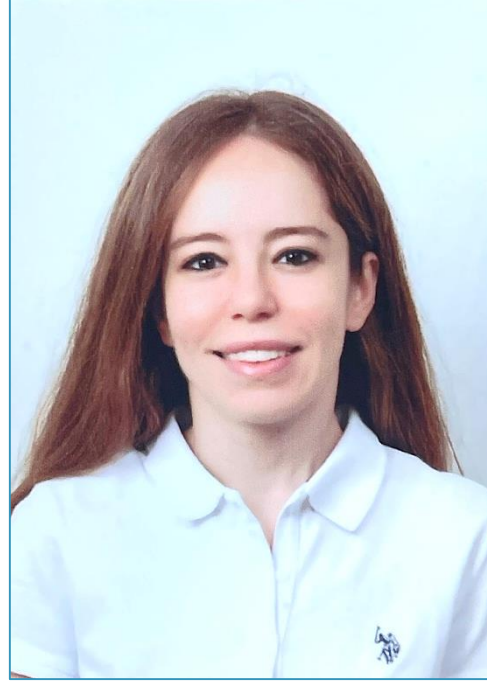
# Previous IE8900 Graduation Projects:

- Warehouse Layout Optimization at Mesan
- Wastewater Treatment Plant Location and Network Optimization in Antalya
- Sales Forecasting and Production Planning at Toraman Tekstil
- Lot Sizing and Timing at AK-AR A.Ş.
- An Employee Assignment Model for Grant Thornton Turkey
- Implementation of Lean Manufacturing Techniques at Altınbaş Ayakkabı Sanayi Ltd Şti
- Determining A New Warehouse Location Selection for A Logistics Company (TÜBİTAK-2209-B project, YAEM 2021)



# Previous IE8900 Graduation Projects:

- Value Stream Mapping at Sun-Set Emprime (YAEM 2021)
- Facility Location in the Public Sector: A Case from Bread Distribution Sector
- Determining the Locations of New Delivery Points for Yurtiçi Cargo
- Lot Sizing in adL with Wagner-Whitin Algorithm (YAEM2022)
- Determining a New Warehouse Location for an Electrical Appliances Company (ISPR 2023, YAEM 2023)
- Optimization of the Distribution Process of Renault Passenger Cars in Turkey
- Lot Sizing for a Key Strategic Customer of an Apparel Manufacturer



**Dr. Tuğçe Apaydın**

## Process Management / Process Improvement

- Simulation and Modelling

## Quality Management

- Quality Function Deployment, Process Control

## Supply Chain Management

- Green Supply Chain Management

## Decision Making

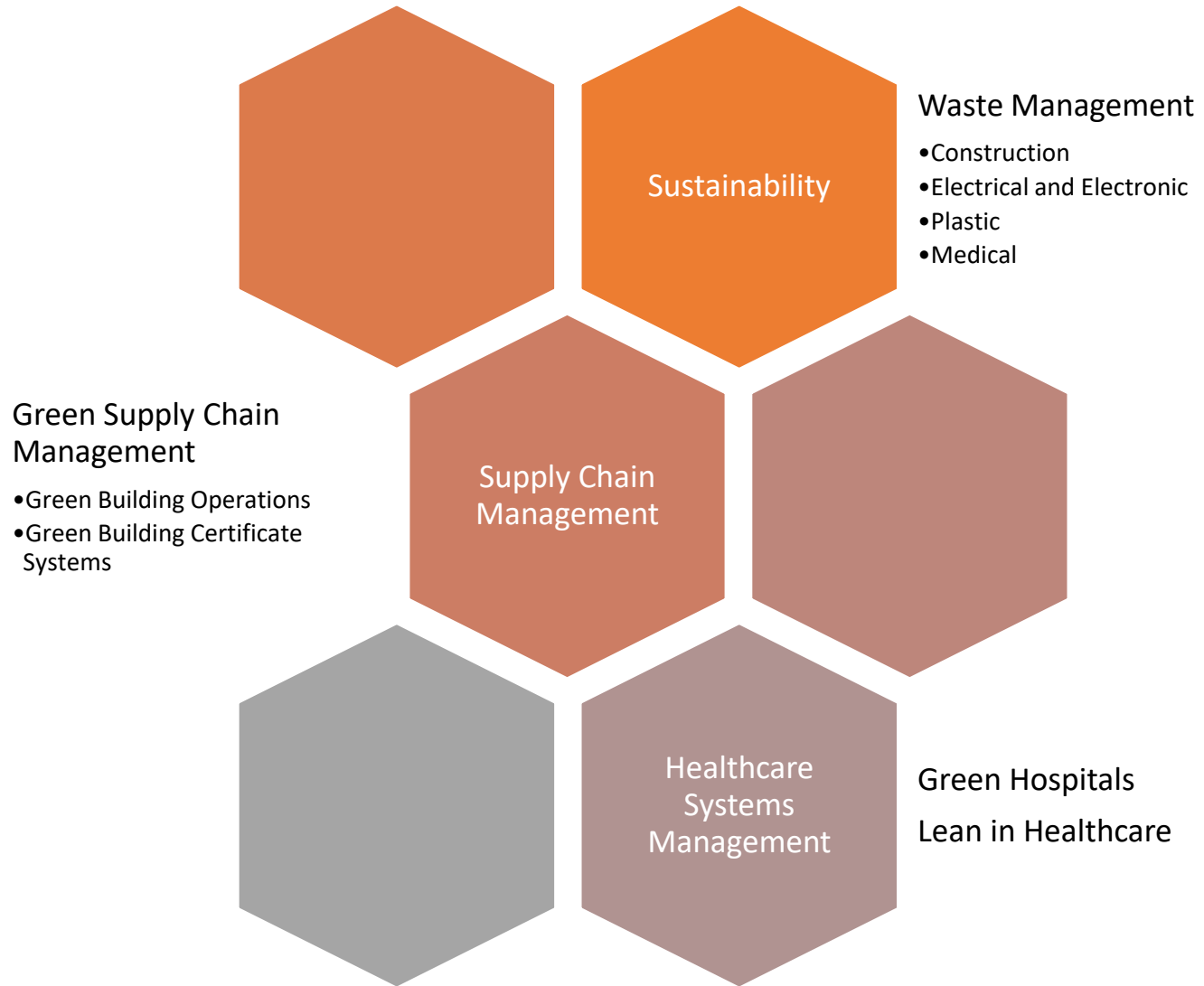
- Multi Criteria Decision Making / Fuzzy Methods

## Lean Thinking

- Value Stream Mapping, 5S, A3, Waste Elimination

## Facility Planning

- Capacity Planning, Layout Design



## Graduation Projects\_2022-2023 Fall

Implementation of Lean Principles in a Cosmetic Company: A Value Stream Mapping Approach on Personal Care Production Line

- Erte Cosmetics

A Performance Measurement Dashboard Design for a Supply Chain Logistics Company

- Getir



Thank  
You