TU11 TEKNİK ÜNİVERSİTE ÖĞRENCİLERİ
LİSANSÜSTÜ ORTAK SEÇMELİ DERS
DUYURUSU

Teknik Üniversiteler Birliği (TU11) kapsamında, 2025-2026 Eğitim Öğretim yılı Güz yarıyılı içerisinde tüm teknik üniversite lisansüstü öğrencileri için seçilebilir olan ve **çevrim içi** olarak okutulacak bir Türkçe ve iki İngilizce ders önerilmiştir.

Bu kapsamda, aşağıdaki tabloda dersin dili, kodu, adı, kontenjanları ve açılan üniversite isimleri verilen derslerden (Ekte, derse ait tüm bilgi paketlerine ulaşılabilmektedir) uygun görülenler danışman ve/veya anabilim dalının uygun görüşü doğrultusunda seçilebilecektir.

AÇILAN DERSLER

No	Dersin Kodu	Dersin Adı	Dersin Dili	Dersin Kontenjanı*	Dersi Açan Üniversite
1	MKT5095	Elektrikli Araçlarda Sürüş Dinamiği ve Konfor Analizleri	Türkçe	50	Bursa Teknik Üniversitesi
2	4300521	Distance Education: Theory Research and Practice	İngilizce	21	Ortadoğu Teknik Üniversitesi
3	9700557	Statistical Learning and Simulation	İngilizce	25	Ortadoğu Teknik Üniversitesi

* Kontenjan üniversiteler için dengeli olacak şekilde kullanılacaktır. Öğrencilerin derse kaydı başvurdukları gün/saat/dakika dikkate alınarak yapılacaktır.

Derse kaydolmak için aşağıda yer alan linke tıklayarak formu doldurmanız gerekmektedir.

Form Linki: https://forms.gle/9ik3HBWaKcXJMoLBA

Google form üzerinden ders seçimi yaptıktan sonra Ders Kayıt Formunu doldurarak **02.10.2025 tarihine kadar** Ana Bilim Dalı Başkanlığına teslim ediniz.

Ders Kayıt Dilekçesi için **TIKLAYINIZ**

SÜREÇ TAKVİMİ

No	Yapılacak İşlem	Tarih / Tarih aralığı
1	TU11 Teknik Üniversitelerde açılacak ortak derslerin duyurulması	27.09.2025
2	Öğrenci tarafından açılan dersler için online kayıt olunması (Google formun doldurulması)	27.09.2025-02.10.2025
3	Öğrenci Başvuru dilekçesi ile danışman ve ABD onayı ile enstitüye başvuru yapılması	27.09.2025-02.10.2025
4	Öğrencinin kayıtlı olduğu enstitü tarafından EYK ile ders izni verilmesi, ders verilen üniversiteye bildirilmesi	03 Ekim 2025
5	Dersi veren üniversite enstitüsü tarafından EYK ile Google formdaki listede yer alan öğrencilerin derse kaydedilmesi	06 Ekim 2025
6	Derslerin Başlangıcı	ODTU: 29.09.2025 BTU: 06.10.2025

Açılan lisansüstü ortak seçmeli dersler **çevrim içi** olarak işlenecek olup, hangi platformda derslerin işleneceği dersi veren öğretim üyesi tarafından belirlenecek ve derse kayıtlı öğrenciler ile paylaşılacaktır. Derslerin başlangıcından önce Google form listelerinde yer alan öğrenci bilgileri dersi veren öğretim üyeleri ile paylaşılacaktır. Derslerin işleyiş süreçlerinde tüm iletişim Google formlarda yer alan e-posta adreslerinden yapılacaktır. Bu nedenle, Google formlara girilen e-posta adreslerinin güncel ve kullanılan adresler olması gereklidir.

DERS PROGRAMI

No	Dersin Kodu	Dersin Adı	Dersin Gün ve Saati
1	MKT5095	Elektrikli Araçlarda Sürüş Dinamiği ve Konfor Analizleri	Cuma - 14:00-16:50
2	4300521	Distance Education: Theory Research and Practice	Pazartesi - 16:40-19:30
3	9700557	Statistical Learning and Simulation	Perşembe - 08:40 - 11:30

Başarılar dileriz.

Ders Adı: Elektrikli Araçlarda Sürüş Dinamiği ve Konfor Analizleri

Dersi Veren Öğretim Üyesi: Doç. Dr. Mehmet Onur GENÇ

Dersin Amacı

Dersin amacı, elektrikli araçların sürüş dinamikleri ve konfor kriterlerini mühendislik bakış açısıyla incelemek, öğrencilerin araç güvenliği, yol tutuşu, gürültü–titreşim (NVH) ve sürüş konforu gibi parametreleri analiz edebilme becerisi kazanmalarını sağlamaktır.

Dersin Türü: Seçmeli

Dersin Öğretim Şekli: Çevrim içi/Online

Dersin Dili: Türkçe

Ön Koşul: Yok

Kaynaklar:

*Advanced Hybrid and Electric Vehicles: System Optimization and Vehicle Integration, Michael Nikowitz

*Hybrid Electric Vehicle, Lecture Notes, P.Sindhu

*Matlab Simulink training notes

*Sektörel tecrübe ve bilgiler

*SCI / SCI-Expanded literatür bilgileri

Ders Planı

Hafta	Konu Başlığı	Açıklama
1	Dersin Tanıtımı ve Giriş	Dersin amacı, kapsamı ve değerlendirme kriterleri. Elektrikli araçların tarihçesi, içten yanmalı araçlarla temel farkları.
2	Araç Dinamiğine Giriş	Denge, ivmelenme, frenleme kavramları ve temel araç dinamiği prensipleri.
3	Yol Tutuş ve Süspansiyon Sistemleri	Süspansiyon tipleri, yol tutuş parametreleri ve sürüş konforuna etkileri.
4	Elektrikli Araçlarda Güç Aktarımı	Güç aktarım yapıları, redüktör, rejeneratif frenleme ve dinamik davranış farklılıkları.
5	Gürültü–Titreşim–Sertlik (NVH) Kavramı	NVH'nin tanımı, kaynakları ve araç mühendisliğindeki önemi.
6	Elektrikli Araçlarda NVH Farklılıkları	EV'lerde NVH kaynaklarının değişimi, ölçüm ve analiz yöntemleri.
7	Akustik ve Titreşim Konforu	Akustik konfor parametreleri, titreşim konforu değerlendirme yöntemleri.
	Ara Sınav	Ara Sınav
8	Dinamik Karşılaştırmalar	Elektrikli ve içten yanmalı araçlarda sürüş dinamiği ve konfor karşılaştırmaları.
9	Mikromobilite Araçları	E-bisiklet, scooter ve golf aracı gibi hafif elektrikli araçlarda sürüş dinamiği ve konfor analizi.
10	Simülasyon Yöntemleri-1	Temel simülasyon ve analiz yöntemleri (MATLAB/Simulink, multi-body modeller).

11	Simülasyon Yöntemleri-2	Temel simülasyon ve analiz yöntemleri (MATLAB/Simulink, multi-body modeller).
12	Uygulama Örnekleri I	Gerçek araçlardan elde edilen verilerle dinamik ve konfor analizleri.
13	Uygulama Örnekleri II	Dijital ikiz, yapay zeka tabanlı analiz yaklaşımları.
14	Genel Değerlendirme	Dersin genel tekrarının yapılması, proje sunumları ve final öncesi hazırlık.

Öğrenme Çıktıları

- Elektrikli araçların temel sürüş dinamiği prensiplerini (denge, yol tutuş, ivmelenme, frenleme) açıklayabilir.

- NVH parametrelerini (gürültü, titreşim, sertlik) tanımlar, ölçüm yöntemlerini kullanarak sürüş konforu üzerindeki etkilerini değerlendirebilir.

- Sürüş güvenliği ve konfor arasındaki ilişkiyi mühendislik bakış açısıyla analiz edebilir.

- Elektrikli ve içten yanmalı araçların dinamik ve konfor özelliklerini karşılaştırarak avantaj ve dezavantajlarını tartışabilir.

- MATLAB/Simulink veya çok cisimli (multi-body) modeller kullanarak araç dinamiği ve konfor analizlerine yönelik basit simülasyonlar gerçekleştirebilir.

- Mikromobilite araçları (e-bisiklet, scooter, golf aracı) için sürüş dinamiği ve konfor parametrelerini değerlendirebilir.

Değerlendirme Ölçütleri

Değerlendirme Yöntemi	Katkı Oranı (%)
Ara Sınav (Vize)	%30
Proje	%30
Final Sınavı	%40
	Toplam: %100

Course Information

Course Code: 4300521

Course Title: **DISTANCE EDUCATION: THEORY RESEARCH AND PRACTICE**
Course Credit: 3.0
Course ECTS: 8.0

Course Catalog Description

This course aims to explore the current research and development in distributed learning environments. This course also aims to discuss and evaluate the distance education landscape, success factors in distance education, and the future of distance education.

Schedule: Mondays, 16:40 - 19:30,   Office Hours: Tuesdays 16:30-17:30

Instructor Information

Assoc.Prof.Dr. Tarkan GÜRBÜZ   Office Address: EFC 117   Email: tarkan@metu.edu.tr   Office Phone: 210 4012

Course Objectives

The objectives of this course are to:

- Identify major trends in the distance education movement;
- Describe issues of particular importance to distance educators;
- Identify educators who have made important contributions to the field;
- Synthesize the use of various technologies used in distance education;
- Discuss the success factors in e-learning business, and the future of distance education.

Course Learning Outcomes

Student, who passed the course satisfactorily, will be able to:

- Tell the impact of digital transformation in distance education.
- Explain the key concepts of distance education and the issues surrounding those concepts
- Identify educational, organizational and strategic issues associated with developing and delivering distance learning
- Describe current leading-edge work in distance education in K-12, higher education, business, government, and other organizational settings.
- Depict the ways in which learning and teaching across barriers of distance and time are similar to -- and different from -- face-to-face instruction.
- Gain fluency in using various interactive media (asynchronous threaded discussion sites, synchronous multi-user virtual environments, groupware, interactive presentational media, and video-conferencing), instructional frameworks (e.g., Moodle) and e-learning applications (e.g., tele mentoring).
- Apply effective instructional design for various interactive media, instructional frameworks, and applications.
- Experience how each medium for interacting across distance shapes the cognitive, affective, and social dimensions of learning and indicate the range of individual responses to these media.
- Describe methods for evaluating the effectiveness of distance education and distributed learning approaches.
- List the synchronous and asynchronous desktop conferencing systems for distance education.
- Discuss how innovations such as multi-user virtual environments, collaborative learning environments, tele mentoring, and online communities are shaping the evolution of distance education and distributed learning.
- List the professional journals and resources in the area of distance education.
- Develop a conceptual framework for the topic of distance education–to view distance education programs as systems with closely interwoven elements
- Develop a conceptual framework for examining pedagogical issues in distance education
- Prescribe appropriate instructional strategies for different distance education learning situations.
- Write a concrete, high-quality accomplishment—a publishable paper, a topic for a thesis, a conference presentation, or the like.

Instructional Methods

Instructional methods to be used, teaching-learning activities, and flow of the lessons can be summarized as follows:

- Lecture by teacher, units of instruction organized by topics
- Use of technology and instructional resources
- Class discussion conducted by teacher
- Presentations by students
- Student reports
- Online course discussion forum and online learning activities
- Preparing assignments
- Use of slides, pictures, videos, internet sources
- Use of whiteboard by instructor in teaching
- Use of diagrams, tables, graphs, and charts by instructor in teaching
- Group project
- Coaching: assistance provided for students having difficulty in the course

Tentative Weekly Outline

Week	Topic	Readings	Assignments
1	Introduction and overview		
2	Foundations of Distance Education	Reading 1	Reflection Paper
3	Technologies and Distance Education	Reading 2	Reflection Paper
4	The impact of digital transformation in distance education.	Reading 3	Reflection Paper
5	Key concepts of distance education and the issues	Reading 4	Reflection Paper
6	Teaching and Learning at a Distance	Reading 5	Reflection Paper
7	Instructional Design for Distance Education	Reading 6	Reflection Paper
8	Materials and Visualization for Distance Education	Reading 7	Reflection Paper
9	Copyright and Distance Education.	Reading 8	Reflection Paper
10	Assessment and Evaluation in Distance Education	Reading 9	Reflection Paper
11	Managing and Leading a Distance Education Organization	Reading 10	Reflection Paper
12	Research and Distance Education	Reading 11	Reflection Paper
13	The Future of Distance Education	Reading 12	Reflection Paper
14	Review		

Course Textbooks

- Zawacki-Richter, E.O., & Jung, I. Handbook of Open, Distance and Digital Education: Parts I and II (2023).
- Michael Simonson, Sharon Smaldino, Susan M. Zvacek - Teaching and Learning at a Distance_ Foundations of Distance Education, 6th Edition-Information Age Publishing (2014)
- Additional readings and learning resources will be assigned and provided for the course in class.

Assessment of Student Learning

Homeworks and Assignments, Active participation and Presentations, Individual Project, Group Project, Midterm and final exams.

Course Grading

Evaluation and Grading	Percentage %
Midterm Exam 1	10%
Midterm Exam 2	10%
Final Exam	15%
Attendance (4)+Active Participation (6)	4+6 %
Homework (5)+ Assignments (10)	15 %
Reflection papers	10 %
Individual Project (Report (4) + Presentation (6))	10%
Group Project (Proposal Report (3)+Final Report (7)+Presentation (10))	3+7+10%
Total	100 %

The grades that are earned during the semester will not be curved. That is:
90-100: AA; 85-89.9: BA; 80-84.9: BB; 75-79.9: CB; 70-74.9: CC; 65-69.9: DC; 60-64.9: DD; 50-59.9: FD; 0-49.9: FF

Course Policies

Class Attendance

You should attend all classes on a regular basis so that you can benefit from the course at maximum level. Attendance will be taken in each class. If you are not able to attend the class due to some important reasons, then inform me certainly before the class via e-mail. Do not forget to compensate for notes, assignments, or tasks. If you are ill, report it to me officially.

Class Participation

Active participation in class is strongly encouraged and you should keep in mind that the definition of participation includes relevant contributions to class discussion, and participation in-class activities

Late Submission of Assignments

Late assignments cannot be accepted without penalty. 20% per day late will be docked from late assignment submissions. Extensions without penalty will only be provided in the medical circumstances in case a medical note is provided within one week of the absence. Medical notes will not be accepted after the course has concluded.

Make up for Exams

No make-up exam is possible.

Communication

Main communication channel is e-mail. Please use the following phrase for the *Subject* line of your e-mail while sending e-mails related to the course.

        CEIT521_your name_the subject of your email

Program Outcomes Matrix

Master's (with thesis)

	Program Outcomes	**Level of Contribution**			
		0	**1**	**2**	**3**
1	Design, run and report scientific research.				X
2	Publish research findings in national and international conferences and scientific journals.				X
3	Design, develop, implement and evaluate instructional systems.			x	
4	Explain and use the theories, concepts and terminology of the instructional technology field in place.				X
5	Use the literature in accordance with the ethical rules.				X
6	Collect quantitative and qualitative data by using the appropriate methods.				x
7	Analyze quantitative and qualitative data by using appropriate tools.				x
8	Design, develop, implement and evaluate educational software.			x	
9	Design, develop, implement and evaluate technology enhanced learning environments.			x	
10	Design, implement and evaluate the process of integration of technology in education.			x	
11	Develop and implement creative and innovative theories and concepts in the instructional technology field.		x		
12	Share the theories, concepts, processes and research findings with the national and international community.				x
13	Leads the improvements in the instructional technology field.			x	
14	Entrepreneur and innovative.			x	
15	Contribute to the development of relationship with other disciplines related to the field.			x	
16	Develop self-regulation skills in the learning process and use them effectively.				x

Doctoral

	Program Outcomes	0	1	2	3
			Level of Contribution		
1	Design, run and report scientific research.				x
2	Publish research findings in national and international conferences and scientific journals.				x
3	Design, develop, implement and evaluate instructional systems.				x
4	Explain and use the theories, concepts and terminology of the instructional technology field in place.				x
5	Use the literature in accordance with the ethical rules.				x
6	Collect quantitative and qualitative data by using the appropriate methods.				x
7	Analyze quantitative and qualitative data by using appropriate tools.				x
8	Design, develop, implement and evaluate educational software.				x
9	Design, develop, implement and evaluate technology enhanced learning environments.			x	
10	Design, implement and evaluate the process of integration of technology in education.			x	
11	Develop and implement creative and innovative theories and concepts in the instructional technology field.		x		
12	Share the theories, concepts, processes and research findings with the national and international community.				x
13	Leads the improvements in the instructional technology field.			x	
14	Entrepreneur and innovative.			x	
15	Contribute to the development of relationship with other disciplines related to the field.			x	
16	Develop self-regulation skills in the learning process and use effectively.				x

Information for Students with Disabilities

To obtain disability related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the ODTÜ Disability Support Office as soon as possible. If you need any accommodation for this course because of your disabling condition, please contact me. For detailed information, please visit the website of Disability Support Office: http://engelsiz.metu.edu.tr/

Academic Honesty

The METU Honour Code is as follows: *"Every member of METU community adopts the following honour code as one of the core principles of academic life and strives to develop an academic environment where continuous adherence to this code is promoted. The members of the METU community are reliable, responsible and honourable people who embrace only the success and recognition they deserve, and act with integrity in their use, evaluation and presentation of facts, data and documents."*

Course Information

Course Code	9700557
Course Section	1
Course Title	STATISTICAL LEARNING AND SIMULATION
Course Credit	3
Course ECTS	8.0
Course Catalog Description	All students of the Institute are welcome to this course. Various methods from statistics, discrete mathematics, numerics and information theory are presented and combined from the view-point of modern algorithms and applications. The computational aspect is taken into account. Throughout the course, we discuss and perform the practical means of simulation and learning. The purpose of the exercises is to familiarize the student with the most usual numerical techniques and their applications.
Prerequisites	No prerequisites
Consent of Dept./Inst.	Consent of the instructor
Corequisites	Linear Algebra and Advanced Calculus
Schedule	Not available
Lab Hours & Location	This is an online course; however, we will virtually meet regularly
Course Website	https://odtuclass.metu.edu.tr
Learning Management System	https://odtuclass.metu.edu.tr

Instructor Information

Name/Title	Prof.Dr. ÖMÜR UĞUR
Office Address	Middle East Technical University, Institute of Applied Mathematics, S-227
Email	ougur@metu.edu.tr
Personal Website	http://ougur.iam.metu.edu.tr
Office Phone	210 5617
Office Hours	Fridays, 10:40 - 12:30 (tentative)

Course Objectives

At the end of the course, the student will learn:

- the fundamentals of Statistical Learning, regression and classification
- linear and nonlinear regressions including splines
- Generalised Additive Models for both regression and classification problems
- regularisation techniques including Ridge regression and the Lasso
- the tree-based methods for regression and classification
- Support Vector Machine which is highly appreciated among Data Science and Machine Learning Community
- the difference between supervised and unsupervised learning methods

Course Learning Outcomes

Student, who passed the course satisfactorily will be able to:

- present the data and its descriptive analysis
- distinguish between regression and classification problems
- apply regression or classification algorithms to solve related problems
- code their own algorithms for specific applications in Statistical and Machine Learning
- understand the fundamentals of Support Vector Machine and be able to apply to specific problems
- distinguish between supervised and unsupervised learning methods in related applications

Instructional Methods

The following instructional methods will be used to achieve the course objectives: Lecture, questioning, discussion, group work, simulation.

Tentative Weekly Outline

Week	Topic	Relevant Reading	Assignments
1	Brief introduction to Statistical Learning a) Regression versus Classification		
2	Linear Regression a) simple and multiple Linear Regression		

3	Classification
	    a) Logistic Regression
	    b) Discriminant Analysis (Linear and Quadratic)		

4	Resampling Methods
	    a) Cross-Validation
	    b) the Bootstrap		

5	Regularisation
	    a) Subset Selection
	    b) Ridge Regression
	    c) the Lasso
	    d) Principle Components Regression
	    e) Partial Least Squares Regression		

6	Nonlinear Models
	    a) Polynomial and Splines
	    b) Generalised Additive Models		

7	Tree-Based Models
	    a) Decision Trees
	    b) Random Forest
	    c) Boosting		

8	Support Vector Machines		

9	Unsupervised Learning
	    a) Principle Component Analysis
	    b) Clustering Methods		

Course Textbook(s)

Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani, An Introduction to Statistical Learning - with Applications in R, Springer, 2013 (Corrected at 8th printing 2017)

Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani, An Introduction to Statistical Learning - with Applications in R, Second Edition. Springer, 2021

Course Material(s) and Reading(s)

Material(s)

Books (Textbook):

- Trevor Hastie, Robert Tibshirani, Jerome Friedman, The Elements of Statistical Learning: Data Mining, Inference, and Prediction, 2nd ed., Springer, 2009 (Corrected at 12th printing 2017)

Reading(s)

Books (Supplementary):

- Kevin P. Murphy, Machine Learning: A Probabilistic Perspective, The MIT Press, 2012
- Peter Harrington, Machine Learning in Action, Manning Publications Co., 2012
- Charu C. Aggarwal, Neural Networks and Deep Learning: A Textbook, Springer, 2018
- G. Jay Kerns, Introduction to Probability and Statistics Using R, 1st ed., 2015
- Robert V. Hogg, Elliot A. Tanis, Dale Zimmerman, Probability and Statistical Inference, 9th ed., 2015
- Larry Wasserman, All of Statistics - A Concise Course in Statistical Inference, 2004
- W. N. Venables, D. M. Smith, and the R Core Team, An Introduction to R - Notes on R: A Programming Environment for Data Analysis and Graphics, Version 3.4.2 (2017-09-28)

Other

Resources:

- *The R Project for Statistical Computing*: https://www.r-project.org/
- *python*: https://www.python.org/
- *RStudio*: https://www.rstudio.com/
- *Anaconda*: https://www.anaconda.com/

Supplementary Readings / Resources / E-Resources

Readings

It is suggested that you should read the *documentations* of each resource below:

- *The R Project for Statistical Computing*: https://www.r-project.org/
- *python*: https://www.python.org/

Assessment of Student Learning

Assessment	Dates or deadlines
Assignments & Quizzes: The homework assignments and quizzes will be designed to help you learn specific skills covered in class. Mostly, they will be available on the course pages on ODTUClass (Moodle) system. The assignments and quizzes must be completed by the student ALONE; unless otherwise is explicitly stated/permitted, NO collaboration is allowed!	
Exams: There will be *one or two* exams that you have to write in this course. The structure of each exam may change: although it might change, the exams will be an online and possibly be an open-book one.	
Final Project: This is a take-home exam that will be given to you before the last day of classes. The final project will involve programming as well as reporting the findings of your assigned project and will be regarded as your final exam. You may be asked to **present your works** as well in class (possibly via online meeting).	

Course Grading

Deliverable	Grade Points
Assignments & Quizzes	50
Exams	30
Final Project	20

Deliverable	Grade Points
Total	100

Course Policies

Class Attendance

Students taking the course must fulfill the requirements stated in the course website. You may feel free to attend the regular meetings weekly (schedule), where we will discuss the topics of the week.

Late Submission of Assignments

Late assignments will not be graded!

Make up for Exams and Assignments

There will be no make-ups for assignments and the projects in this course.

Information for Students with Disabilities

Students who experience difficulties due to their disabilities and wish to obtain academic adjustments and/or auxiliary aids must contact ODTU Disability Support Office and/or course instructor and the advisor of students with disabilities at academic departments (for the list: http://engelsiz.metu.edu.tr/en/advisor-students-disabilities) as soon as possible. For detailed information, please visit the website of Disability Support Office: https://engelsiz.metu.edu.tr/en/

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