

2024-2025 FALL SEMESTER ENG 499 MULTI DISCIPLINARY PROJECT LIST

Şube No (Group No)	Akademisyen (Lecturer)	Proje Adı (Project Name)	Proje Bölümü (Project Department)	Projeyi Alabilecek Öğrencilerin Bölümleri (Departments of students Who will register for the project)
1	PROF.DR. SADETTİN KAPUCU	Design a device that reduces tremors. Users of wearable shaking reduction devices experience less trembling by internally creating forces that cancel out or lessen the amount of trembling they experience. The gadget can be fastened to the leg, arm, wrist, or ankle. The apparatus might consist of several housings that are able to be joined in a flexible manner. Every component of the housing has a weight that can be translated along the proximity and distal proximity axes as well as the neutral point between the two. A biasing mechanism restores the mass to the neutral position after imposing a force with a component along the axis (for further details, refer to the WO 2018/044381 patent). It is necessary to design and construct a wearable tremor reduction device (different from the one outlined in WO 2018/044381) in order to accomplish a comparable task in order to address such a problem. (This project may require some purchases in order to construct a prototype. This should be made clear to anyone who are willing to research this project.) It is required from the ENG 499 group of students (2 from mechanical engineering and 2 student from electrical and electronics engineering) to work on an open-ended multidisciplinary design problem and finish at the end of semester by presenting a physical prototype and a formal report.	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.
2	PROF.DR. SADETTİN KAPUCU	Design a polypropylene fibers bundle chopper Use of micro synthetic or macro synthetic fiber based reinforcement materials in composite structures is known in the industry. Such materials can be introduced into cement mixtures at reinforced concrete production. The present project is about a method for cutting into cylindrical form of a synthetic fiber based reinforcement material comprising packaging of the reinforcement material in a packaging material which is dispersible in water for use in concrete mixtures. The water-soluble wrapped polypropylene fibers bundle (a mainly circular cross-section having a mean diameter of D) should be chopped in form of cylinder (discontinuous bundles having certain lengths of L) with a length per diameter (L/D) ratio within the range between 0.25 and 5, or between 1.5 and 3. To satisfy this requirement ; • propose chop off mechanism types (it is required find possible alternatives), • evaluate which is the best method, • design the selected mechanism in all aspect (size, dimension, shape, material, etc) • design driver for your system (flywheel, motor/actuator). It is required from the ENG 499 group of students (2 from mechanical engineering and 2 student from electrical and electronics engineering) to work on an open-ended multidisciplinary design problem and finish at the end of semester by presenting a detailed formal report.	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.
3	PROF.DR.A. İHSAN KUTLAR PROF.DR. NİHAT YILDIRIM	Design and construction of a prototype load cell based on strain gage technology	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.
4	PROF.DR.A. İHSAN KUTLAR PROF.DR. NİHAT YILDIRIM	Development of a defect detection system based on AI coding	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng. Industrial Eng. Engineering Physics
5	DR.ÖĞR. ÜYESİ ALI KILIÇ	Conceptual and Architectural Design of Autonomous Warehouse Robots	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng. Industrial Eng.
6	PROF.DR. Ö. YAVUZ BOZKURT	Filament dryer storage box for 3D printers This project covers the construction of a 5-axis 3D printer. The necessary parts will be given by the supervisor.	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng. Metallurgical and Materials Eng.
7	DOÇ.DR. FUAT YILMAZ	Design and construction of a Bladeless Vortex Hydro Turbine Departments	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.
8	DOÇ.DR. FUAT YILMAZ	Fingerprint Sensor System Production for Different Purposes Departments	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.
9	DR. ÖĞR. ÜYESİ SADIK OLGUNER	Defect detection on material surface with image processing	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng. Industrial Eng.

10	DR. ÖĞR. ÜYESİ SADIK OLGUNER	Ultrasonic welding of polypropylene nonwoven fabric composites	Mech. Eng.	Mech. Eng. Textile Engineering Metallurgical and Materials Eng.
11	PROF.DR. AHMET ERKLİĞ	Design and Fabrication of Hand Operated Injection Molding Machine	Mech. Eng.	Mech. Eng. Textile Engineering Metallurgical and Materials Eng. Electrical and Electronics Eng. Engineering Physics
12	PROF.DR. AHMET ERKLİĞ	carbon dot synthesis from pistachio shell and usage	Mech. Eng.	Mech. Eng. Food Eng.
13	PROF.DR. A. TOLGA BOZDANA	Titanium Dioxide: Properties and Uses in Industrial Applications	Mech. Eng.	Mech.Eng. Food Eng.
14	DR.ÖĞR. ÜYESİ M. ERKAN KÜTÜK	Design, Manufacturing and Control of a 2 DOF Planar Parallel Manipulator	Mech. Eng.	Mech.Eng. Electrical and Electronics Eng.
15	DOÇ.DR. HÜSEYİN YAĞLI	Off-grid smart green city design considering energy, building and food sustainability	Mech. Eng.	Mech. Eng. Civil eng. Food Eng. Electrical and Electronics Eng.
16	PROF.DR. NECİP FAZİL YILMAZ	innovative smart works on additive manufacturing: case studies on metals, polymers, machine learning, image processing, material characterization and coating materials	Mech. Eng.	Mech. Eng. Textile Engineering Metallurgical and Materials Eng. Electrical and Electronics Eng.

17	PROF.DR. EMRAH ÖZAHİ	A System Restructuring Study by Using Lean Manufacturing Principles to Increase Production Efficiency by Reducing Waste Energy.	Mech. Eng.	Mech. Eng. Industrial Eng.
18	Prof. Dr. Ergun Erçelebi	Development of a Smart Agriculture Robot	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng. Electrical and Electronics Eng.
19	Prof. Dr. Ergun Erçelebi	Design and Implementation of a Renewable Energy System	Electrical and Electronics Eng.	Mech. Eng.
20	Prof. Dr. Ergun Erçelebi	Development of Smart Building Management System	Electrical and Electronics Eng.	Electrical and Electronics Eng. Civil eng.
21	Prof. Dr. Ergun Erçelebi	Development of Food Processing and Packaging Automation	Electrical and Electronics Eng.	Electrical and Electronics Eng. Food Eng.
22	Doç.Dr. Tolgay Kara	Sensor-free Mobile Robot with Visual Feedback: The project involves design, construction and testing of a mobile robot equipped with a camera. Motion control with obstacle avoidance and object detection functions should be performed via visual feedback.	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
23	Prof. Dr. Arif N'ACAROĞLU	Design and construction of the voice follower.	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
24	Prof. Dr. A. Mete VURAL	Design and Implementation of an Electric Crane	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
25	Dr. Öğr. Üyesi Musa Bute	Design of solid granule pumping machine	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
26	Prof Dr. Nuran Doğru	Remote controlled smart trolley	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
27	Dr. Öğr. Üyesi Ali Osman Arslan	PV Panel Cleaner.	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
28	Doç. Dr. Serkan ÖZBAY	Investigating the conductivity of stretchable fabrics for different bending levels	Electrical and Electronics Eng.	Electrical and Electronics Eng. Textile Engineering
29	Prof. Dr. Sema Kayhan	Development of Student Attendance System Based on Fingerprint Biometrics	Electrical and Electronics Eng.	Electrical and Electronics Eng. Industrial Eng.
30	Doç.Dr. Taner İnce	Hand Motion Controlled Robotic Vehicle	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
31	Dr. Öğr. Üyesi Mahmut AYKAÇ	Smart Transmission	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
32	Prof. Dr. Uğur Cem Hasar	Olive Oil Characterization by Microwave Signal	Electrical and Electronics Eng.	Electrical and Electronics Eng. Food Eng.
33	Dr. Öğr. Üyesi SEYDİ KAÇMAZ	Smart Food Storage and Monitoring System	Electrical and Electronics Eng.	Electrical and Electronics Eng. Food Eng.
34	Prof. Dr. Medeni MASKAN	Use of ultrasound in detection of maturity level of fruits and vegetables.	Food Eng.	Food Eng. Engineering Physics Optic and Ac. Eng. Industrial Eng.
35	Prof.Dr. Fahrettin GÖĞÜŞ	Color measurement of solid food materials	Food Eng.	Food Eng. Optic and Ac. Eng.
36	Prof.Dr. A. Coşkun DALGIÇ	Process simulation in food industry	Food Eng.	Food Eng. Industrial Eng. Mech. Eng.
37	Prof.Dr. Sevim KAYA	Evaluation of consumer preferences about dairy and dairy products	Food Eng.	Food Eng. Industrial Eng. Mech. Eng.
38	Prof. Dr. Emine ERÇELEBİ	Application of industrial engineering techniques for cost reduction in frozen foods	Food Eng.	Food Eng. Industrial Eng.
39	Prof. Dr. Sibel FADİLOĞLU	Design of electrophoresis instrumental system for protein purification	Food Eng.	Food Eng. Mech. Eng. Electrical and Electronics Eng.
40	Prof. Dr. Hüseyin BOZKURT	Mathematical modelling of experimental data	Food Eng.	Food Eng. Industrial Eng. Electrical and Electronics Eng.
41	Prof.Dr. Mustafa BAYRAM	Food Consumption Trends	Food Eng.	Food Eng. Industrial Eng. Computer Eng. Mech. Eng. Software Eng. Economics. Social Sciences Departments. Gastronomy Department,

42	Prof.Dr. Çiğdem AYKAÇ	Research on historical foods	Food Eng.	Food Eng. History Gastronomy Department,
43	Prof. Dr. Esra İBANOĞLU	Exploring Polymorphic structures in chocolate on the production line	Food Eng.	Food Eng. Optic and Ac. Eng
44	Prof. Dr. Ahmet KAYA	Design of enzyme/oxygen indicator.	Food Eng.	Food Eng. Engineering Physics Optic and Ac. Eng
45	Dr.Öğr.Üyesi Hasane KESKİN ÇAVDAR	Design of automated titration system for determination of enzyme activity	Food Eng.	Food Eng. Mech. Eng. Electrical and Electronics Eng.
46	Dr. Öğr. Üyesi Fatih BALCI	Elektrospinning ile Gıda Atıklarından Biyoplastik Lif Üretimi ve Tekstil Uygulamaları	Food Eng.	Food Eng. Textile Engineering
47	Prof.Dr.Bülent GÖNÜL	Quantum Philosophy of Life	Engineering Physics	Engineering Physics Mech. Eng. Electrical and Electronics Eng.
48	Doç. Dr. R.Güler YILDIRIM	Engineering Applications of Excel	Engineering Physics	Engineering Physics Electrical and Electronics Eng. Civil eng.
49	Prof.Dr.Ömer F. Bakkaloğlu	Design of solar cell	Engineering Physics	Engineering Physics Mech. Eng. Electrical and Electronics Eng.
50	Assist. Prof. Dr. Mehmet KOÇAK	Wireless Transmission of Electricity	Engineering Physics	Engineering Physics Electrical and Electronics Eng.
51	Dr. Öğr. Üyesi Serap Çelik	Efficiency calculations of half-cut solar panels under shaded conditions	Engineering Physics	Engineering Physics Optic and Ac. Eng Electrical and Electronics Eng.
52	Prof. Dr. Okan Özer	A Case Study: Thermodynamic-based Simulation of Akkuyu Nuclear Power Plant	Engineering Physics	Engineering Physics Mech. Eng. Electrical and Electronics Eng. Industrial Eng.
53	Prof. Dr.Beşire GÖNÜL	An investigation of band gap tuning in semiconductors for photonic devices	Engineering Physics	Engineering Physics Optic and Ac. Eng Metallurgical and Materials Eng.
54	Prof.Dr.Eser OLGAR	Design and construction of absorptive acoustic panels	Engineering Physics	Engineering Physics Optic and Ac. Eng Civil eng. Mech. Eng. Architecture

55	Prof.Dr.A.Necmeddin YAZICI	Investigation of luminaire and road properties on uniform lighting in road examples.	Engineering Physics	Engineering Physics Optic and Ac. Eng Electrical and Electronics Eng.
56	Prof. Dr. Hüseyin TOKTAMIŞ	Investigation energy accumulation in samples taken from the foundations of collapsed buildings after the 6 February Kahramanmaraş earthquake.	Engineering Physics	Engineering Physics Civil eng. Industrial Eng.
57	Prof.Dr.E.Vural KAFADAR	Applications of thermal imaging camera	Engineering Physics	Engineering Physics Optic and Ac. Eng Electrical and Electronics Eng.
58	Prof.Dr.Hayriye TÜTÜNCÜLER	Investigation of dye sensitized solar cells	Engineering Physics	Engineering Physics Electrical and Electronics Eng. Food Eng.
59	Prof.Dr.Ayda BEDALL	Prototype automatic glass-plastic bottle sorter for a recycling plant.	Engineering Physics	Engineering Physics c
60	Doç.Dr.Mustafa YILMAZ	Water harvesting from moisture in the air by 3D mesh nets.	Engineering Physics	Engineering Physics Optic and Ac. Eng Mech. Eng.
61	Prof.Dr.Ramazan KOÇ	Paper and Water based battery design	Engineering Physics	Engineering Physics Optic and Ac. Eng Electrical and Electronics Eng. Food Eng. Chemistry department
62	Prof. Dr. Nihat Atmaca	Design of Structural System, Mechanical Installation and Electrical System of Reinforced Concrete Buildings	Civil eng.	Civil eng. Mech. Eng. Mech. Eng.
63	Prof. Dr. Abdulkadir Çevik	Artificial Intelligence Applications in Engineering	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng. Industrial Eng.
64	Prof. Dr. Esra Mete Güneysi	Design of a steel transmission tower based on safety, efficiency and sustainability	Civil eng.	Civil eng. Electrical and Electronics Eng. Mech. Eng. Industrial Eng.
65	Doç. Dr. Mehmet Eren Gülşan	Design of a reinforced concrete factory by the consideration of both energy savings and vibration resistance	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng.
66	Prof. Dr. Mehmet İshak Yüce	Design and optimization of renewable energy sources and investigation of structural integrity	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng.
67	Prof.Dr. Mustafa Özaka	Design of the future house (Energy efficient, Water efficient, Social responsibility and innovative design)	Civil eng.	Civil eng. Electrical and Electronics Eng. Mech. Eng. Industrial Eng. Architecture Students from departments other than those listed can take part
68	Prof. Dr. Hamza Güllü	Post-Earthquake Damage Evaluation of Buildings	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng.
69	Prof. Dr. Talha Ekmekyapar	Design of an Industrial Steel Building with Sprinkler Fire Extinguishing System	Civil eng.	Civil eng. Mech. Eng.
70	Dr. Öğr. Üyesi Esra Eylem Karataş	Design of ecological and sustainable buildings	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng. Architecture
71	Prof.Dr.Mustafa Günal	Flood Prediction and Disaster Risk Analysis using GIS	Civil eng.	Civil eng. Mech. Eng.
72	Dr. Öğr. Üyesi Ayşe Yeter GÜNAL	Flood Prediction and Disaster Risk Analysis using Artificial Intelligence	Civil eng.	Civil eng. Mech. Eng.
73	Doç. Dr. Mehmet Tolga GÖÇÜŞ	Design of extensometer for tensile testing of metals	Civil eng.	Civil eng. Mech. Eng.
74	Prof Dr Ali Firat ÇABALAR	Sustainable materials for road pavement designs	Civil eng.	Civil eng. Metallurgical and Materials Eng.
75	Prof. Dr. Nildem Taşçı	Optimum design and cost analysis of electrical transmission towers	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng. Industrial Eng.
76	Prof. Dr. Aytaç Güven	Design of Efficient and Passive Buildings	Civil eng.	Civil eng. Mech. Eng. Electrical and Electronics Eng. Industrial Eng.
77	Prof.Dr.Serap U SEÇKİNER	Planning building and district energy systems considering simulate districts with heating and cooling networks, renewable energies, hydrogen technologies, heat pumps and seasonal storages	Industrial Eng.	Industrial Eng. Mech. Eng.

78	Prof. Dr. Eren ÖZCEYLAN	Green Supplier Selection and Evaluation	Industrial Eng.	Industrial Eng. Food Eng.
79	Doç. Dr. Süleyman METE	Supply Chain Optimization and Data Analytics	Industrial Eng.	Industrial Eng. Mech. Eng.
80	Dr. Öğretim Üyesi Pınar KOCABEY ÇİFTÇİ	Investigation of circular economy and symbiotic relationship opportunities to increase the sustainability of the industry	Industrial Eng.	Industrial Eng. Mech. Eng.
81	Dr. Öğretim Üyesi Yunus EROĞLU	Wind Farm Layout Optimization using Heuristics	Industrial Eng.	Industrial Eng. Electrical and Electronics Eng. Mech. Eng.
82	Prof. Dr. Mehmet Topalbekiroğlu	Preparation of software for stepper motors for use in textile machines	Textile Engineering	Textile Engineering Mech. Eng. Electrical and Electronics Eng.
83	Prof. Dr. Cem Güneşoğlu	Web based testing laboratory search portal	Textile Engineering	Textile Engineering Electrical and Electronics Eng. Computer Engineering
84	Prof. Dr. Halil İbrahim Çelik	Design and production of conductive knitted fabric	Textile Engineering	Textile Engineering Electrical and Electronics Eng.
85	Prof. Dr. Hatice Kübra Kaynak	Investigation of conductive yarn production	Textile Engineering	Textile Engineering Metallurgical and Materials Eng.
86	Prof. Dr. Züleyha Değirmenci	Designing of thermoregulated textile structures	Textile Engineering	Textile Engineering Electrical and Electronics Eng.
87	Doç. Dr. Mehmet Erdem INCE	The use of JUMP® statistical software package in engineering data analyses.	Textile Engineering	Textile Engineering All engineering departments
88	Doç. Dr. Halil İbrahim ÇİDOĞLU	Production and characterization of electrospun ceramic nanofibers	Textile Engineering	Textile Engineering Metallurgical and Materials Eng.
89	Dr. Öğr. Üyesi Hatice İbili	Production of functional textile surfaces	Textile Engineering	Textile Engineering Food Eng.
90	Doç. Dr. Abdulaziz KAYA	Design Of A Pilot Water Treatment Plant For The Removal Of Anionic Dyes From Textile Wastewater With The Use Of Cationic Adsorbent Materials	Metallurgical and Materials Eng.	Metallurgical and Materials Eng. Mech. Eng. Industrial Eng. Textile Engineering
91	Doç. Dr. Abdülcabbar YAVUZ	Fabrication of Flexible Electrode for Water Purification	Metallurgical and Materials Eng.	Metallurgical and Materials Eng. Textile Engineering Food Eng.
92	Doç. Dr. Derya KAPUSUZ YAVUZ	Design and cost analysis of a dental restorative production plant based on QCD principles	Metallurgical and Materials Eng.	Metallurgical and Materials Eng. Mech. Eng. Industrial Eng.
93	Doç. Dr. Mikail Aslan	Nanoclay reinforced Al-Cu composites	Metallurgical and Materials Eng.	Metallurgical and Materials Eng. Mech. Eng. Industrial Eng.
94	Doç. Dr. Mustafa Güven GÖK	Designing an automation system for Jominy-end quench testing machine	Metallurgical and Materials Eng.	Metallurgical and Materials Eng. Mech. Eng. Industrial Eng.

