

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	<p>Design a device that reduces tremors.</p> <p>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.)</p> <p>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.</p>	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.
2	PROF.DR. SADETTİN KAPUCU	<p>Design a polypropylene fibers bundle chopper</p> <p>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 ;</p> <ul style="list-style-type: none"> 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). <p>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.</p>	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.
8	DOÇ.DR. FUAT YILMAZ	Fingerprint Sensor System Production for Different Purposes Departments	Mech. Eng.	Mech. Eng. Electrical and Electronics Eng.

10	DR. ÖĞR. ÜYESİ SADIK OLGUNER	Ultrasonic welding of polypropylene nonwoven fabric composites	Mech. Eng.	Mech. Eng. Textile Engineering Metallurgical and Materials Eng.
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.
16	PROF.DR. NECİP FAZIL 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.
18	Prof. Dr. Ergun Erçelebi	Development of a Smart Agriculture Robot	Electrical and Electronics Eng.	Electrical and Electronics Eng. Mech. Eng.
19	Prof. Dr. Ergun Erçelebi	Design and Implementation of a Renewable Energy System	Electrical and Electronics Eng.	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 NACAROĞLU	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.
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
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.
35	Prof.Dr. Fahrettin GÖĞÜŞ	Color measurement of solid food materials	Food Eng.	Food Eng. Optic and Ac. Eng.

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 Hasene 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
48	Doç. Dr. R.Güler YILDIRIM	Engineering Applications of Excel	Engineering Physics	Engineering Physics Electrical and Electronics Eng. Civil eng.
50	Assist. Prof. Dr. Mehmet KOÇAK	Wireless Transmission of Electricity	Engineering Physics	Engineering Physics Electrical and Electronics Eng. Optic and Ac. 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.
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.

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.
58	Prof.Dr.Hayriye TÛTÛNCÛLER	Investigation of dye sensitized solar celled	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.
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 GÛnal	Flood Prediction and Disaster Risk Analysis using GIS	Civil eng.	Civil eng. Mech. Eng.
72	Dr. Öğr. Üyesi Ayşe Yeter GÛNAL	Flood Prediction and Disaster Risk Analysis using Artificial Intelligence	Civil eng.	Civil eng. Mech. Eng.
73	Doç. Dr. Mehmet Tolga GÖÇÛŞ	Design of extensometer for tensile testing of metals	Civil eng.	Civil eng. Mech. Eng.
74	Prof Dr Ali Fırat ÇABALAR	Sustainable materials for road pavement designs	Civil eng.	Civil eng. Metallurgical and Materials 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.
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.
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.
88	Doç. Dr. Halil İbrahim İÇOĞLU	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.
91	Doç. Dr. Abdülcabbar YAVUZ	Fabrication of Flexible Electrode for Water Purification	Metallurgical and Materials Eng.	Metallurgical and Materials Eng. Textile Engineering Food Eng.