



**Faculty of Engineering and Natural
Sciences**

**Mechanical Engineering
Department**

2024/2025

**INTRODUCTION TO
MECHANICAL
ENGINEERING**

#BilimleBirlikte

#BilimleBirlikte



- Antalya Bilim University was established in **2012** as a Foundation University.
- ABU has a student body of over **7000** students and a faculty of over **300** professors, associate professors, assistant professors.
- The university is committed to providing students with a high-quality education that prepares them for success in their chosen careers. ABU also emphasizes the importance of **research** and **innovation**, and its faculty members are actively engaged in a variety of **research projects**.



- ABU has a modern campus with state-of-the-art facilities, including **libraries, laboratories, computer labs,** and **sports facilities.** The university also has a strong **international focus** and has **partnerships with universities in over 30 countries.**
- ABU is a young and growing university with a strong commitment to providing students with a high-quality education.
- It is a good option for students who are looking for a private university with **a modern campus** and **a strong international focus.**



7 Faculties 1 Institute 5 Vocational School 8 Research and Application Centers

Faculties

- > Faculty of Dentistry
- > Law School
- > Faculty of Engineering and Natural Sciences
- > Faculty of Economics, Administrative and Social Sciences
- > Faculty of Fine Arts and Architecture
- > School of Tourism
- > Faculty of Health Sciences

Institute

- > Institute of Postgraduate Education

Vocational School

- > Vocational School of Health Services
- > Vocational School of Justice
- > Vocational School
- > Civil Aviation Vocational School



Location and Contacts

CAMPUS

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+90 242 245 01 00

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Çıplaklı Mah. Akdeniz Bulvarı No:290
A Döşemealtı/Antalya

MARKANTALYA CAMPUS

+90 242 245 02 45 (SEM)

+90 242 245 01 30 (Institute)

+90 242 245 01 00

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Tahilpazarı Mh. Adnan Menderes
Bulv. No:84 Muratpaşa/ANTALYA
(Markantalya)

GULLUK CAMPUS

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Language School)

+90 242 245 01 00

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Üçgen Mh. Tonguç Cd. No : 31
Muratpaşa/ANTALYA (Birim AVM Üzeri)

PERGE CAMPUS

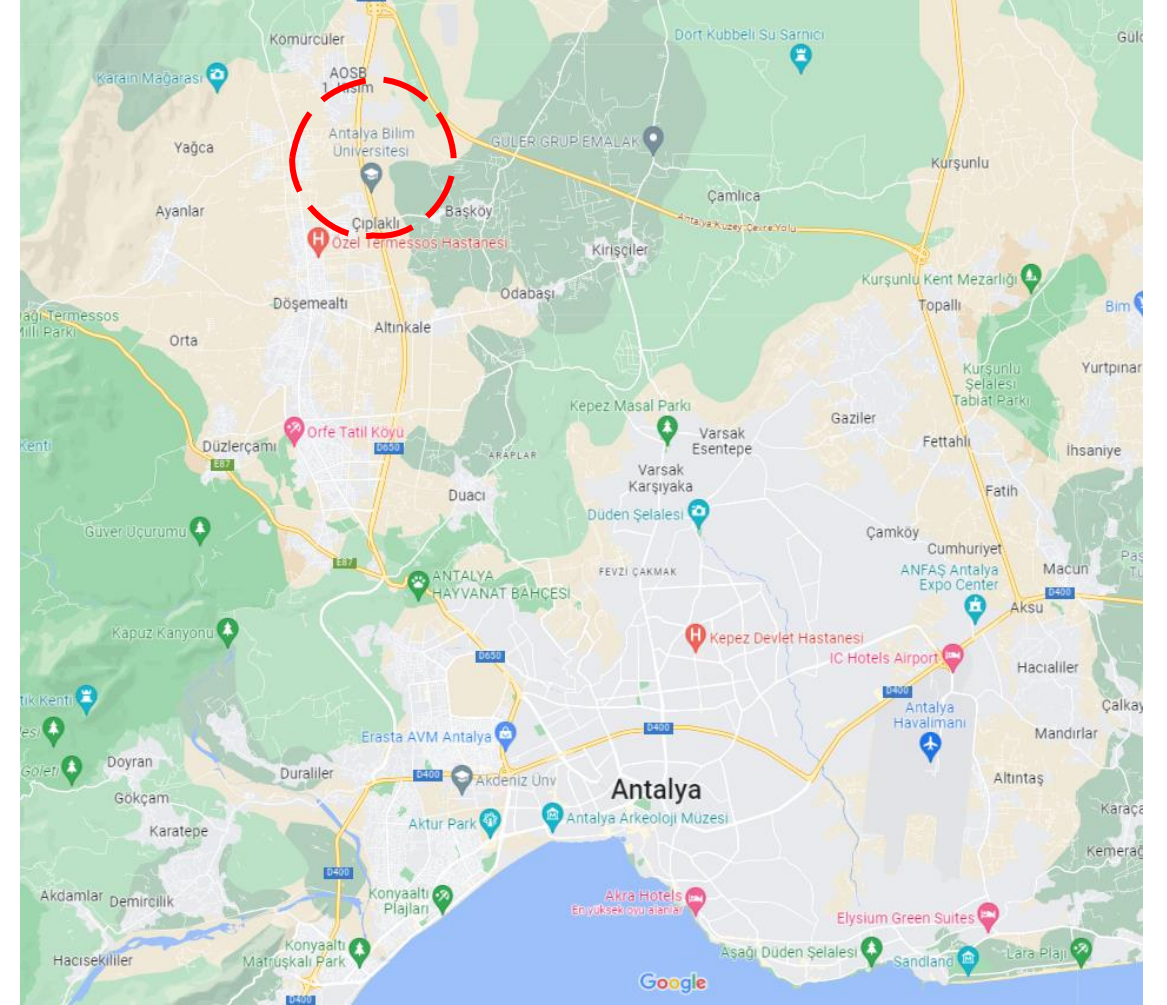
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Department)

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Department)

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Tarım Mahallesi Perge Bulvarı 53/C
Muratpaşa/ANTALYA



Rector

Prof. Dr. Semih Ekercin
(Geomatics Engineer)



Dean of the Faculty

Prof. Dr. Cafer Çalışkan
(Computer Engineer)



Head of the Department

Prof. Dr. M. Fatih Bay
(Physicist)



Important Contact Adresses and Links for Students

- Student Information System / <https://ubs.antalya.edu.tr//>
- Erasmus Program / <https://erasmus.antalya.edu.tr/en>
- Dormitory / <https://hcs.antalya.edu.tr/en/dormitories-1>
- ECTS / <https://antalya.edu.tr/en/akts>
- Student Affairs Directorate / <https://antalya.edu.tr/en/administrative-units/student-affairs-directorate>
 - studentaffairs@antalya.edu.tr / oidb@antalya.edu.tr
- Library / <https://antalya.edu.tr/en/administrative-units/directorate-of-library-and-documentation>
- Complaint Management System / <http://sikayet.antalya.edu.tr/portal>
- Learning Management System / <https://lms.antalya.edu.tr/>



Faculty of Engineering and Natural Sciences incorporates the main fields of engineering including

- Computer Engineering,
- Electric-Electronic Engineering,
- Industrial Engineering,
- Civil Engineering,
- **Mechanical Engineering.**

Our main objective is to increase the quality of undergraduate education provided in our departments and train you as qualified engineers. We want to contribute to our students in terms of both providing a good education and preparing them to the business life with the help of our ever-improving institutional structure.



❑ Aissa Houdjedj, **Bilgisayar Mühendisliği**,

1. **TÜBİTAK Projesi**, 2022 *Mart*, PersonaDrive: A Computational Approach for Prioritization of Patient-specific Cancer Drivers

❑ Orhan Deniz GENÇAĞA, **Elektrik - Elektronik Mühendisliği**,

1. **TÜBİTAK Projesi**, 2022 *Mart*, Beyin odaklı gürültü sinyallerinin nöronlar arasındaki etkileşimdeki rolünün enformasyon teorisi kullanılarak incelenmesi
2. **TÜBİTAK Projesi**, 2021 *Mayıs*, FPGA Sistemi İçin Gelişmiş Makine Öğrenme Tekniği Entegre Edilmesi

❑ Engin ARSLAN, **Elektrik-Elektronik Mühendisliği**

1. **Kamu Kurumu Projesi**, 2022 *Nisan*, ASELSAN GaN tabanlı yüksek güç yüksek frekans projesi
2. **Patent**, 2022 *Mayıs*, Nanoparçacık Formunda Bir Dielektrik Tabaka İçeren Bir Yarıiletken Aygıt Yapısı Ve Bunu Elde Etme Yöntemi

❑ Hilal KAZAN, **Bilgisayar Mühendisliği**,

- **TÜBİTAK Projesi**, 2022 *Mart*, Nöroimmun Rehberlik İşaretleri, mikroRNAlar ve İltihabi Tepki: Kardiyovasküler Hastalıklarda Cinsiyet Farklılıkları

❑ Jehad Mahmoud HAMAMREH, **Elektrik - Elektronik Mühendisliği**,

- **TÜBİTAK Projesi**, 2022 *Nisan*, Novel Advanced Non-Orthogonal Multiple Access Schemes For Enhancing Communication Security And Reliability Of Future Low-Complexity, Massive Machine Type Communications
- **Patent**, 2021 *Temmuz*, 11,075,710, “Automatic repeat-request system for providing absolute safety and authentication in wireless networks” J. M. Hamamreh, H. Arslan, 2021. (US Patent)
- **Patent**, 2021 *Mart*, 2018 21298, UYARLANABİLİR MODÜLASYON KATSAYILI BİR DİKEY FREKANS BÖLMELİ ÇOKLAMA YÖNTEMİ, H. M. Furqan, J. M. Hamamreh and H. Arslan, 2021. (Turk Patent Office)

❑ Mustafa İlker BEYAZ, **Elektrik - Elektronik Mühendisliği**,

1. **TÜBİTAK Projesi**, 2022 Ocak, Damar yolu açmak için damar konumunu hassas olarak tespit eden kol bandı
2. **TÜBİTAK Projesi**, 2021 Ocak, Hava kalitesi ve nem oranı ölçen UV ışınlarla temizlenen akıllı maske
3. **TÜBİTAK Projesi**, 2021 Ağustos, Damar Basıncını Tespit Eden İmplant Edilebilir Biyotelemetri Sistemi Geliştirilmesi ve Deneysel Hepatik Arter Anastomozu Yapılan Domuzlarda Uygulanması

❑ Cafer ÇALIŞKAN, **Bilgisayar Mühendisliği**,

1. **TÜBİTAK Projesi**, 2021 Ocak, Çevrimiçi Bilişsel Tanıya Dayalı İzleme Modelinin Üst Düzey Düşünme Becerilerine Etkisi

❑ Cesim Erten, **Bilgisayar Mühendisliği**,

1. TÜBİTAK Projesi, 2021 Aralık, Tek Hücre Veri Setlerinin Entegrasyonu İçin Ağ Hizalama Tabanlı Yenilikçi Yaklaşımlar

❑ Seda DEMİREL TOPEL **Elektrik - Elektronik Mühendisliği**,

1. TÜBİTAK Projesi, 2021 Mayıs, Elektromanyetik Ekranlama Özelliğine Sahip Doğal Shungite Taşı içerikli Prototip Ürünlerin Geliştirilmesi

❑ Selami ÜLGEN, **Endüstri Mühendisliği**,

1. TÜBİTAK Projesi, 2021 Kasım, Antalya'daki Karaciğer/Böbrek Organ Bağıışı Bekleme Listesinin Maxsat ve Çizge Modeli Kullanarak Optimize Edilmesi

❑ Yusuf ÖZTÜRK, **Elektrik - Elektronik Mühendisliği**,

1. Kamu Kurumu Projesi, 2020 Şubat, GaN ALD projesi

❑ Hamit Kenan, **Makine Mühendisliği**

1. Tübitak Projesi, 2022 Kasım, Depreme Maruz Asansör Ray-Karşı Ağırlık Sistemleri İçin Sarsma Masası Testleriyle Doğrulanmış Nonlineer Matematik Model Geliştirilmesi

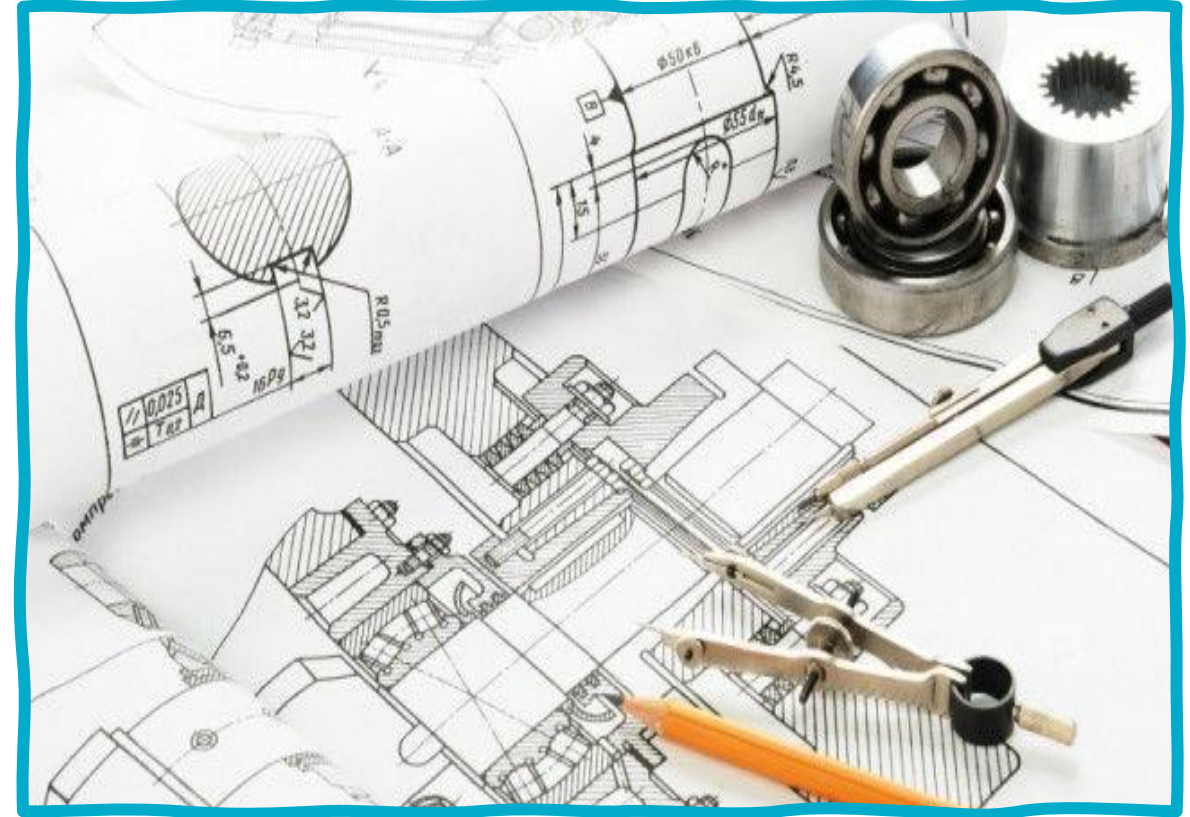
Department of Mechanical Engineering consists of five branches such as;

1. “Design and Manufacturing”,
2. “Mechanics”,
3. “Energy”,
4. “Thermodynamics”,
5. “Machine Theory and Dynamics”.



The undergraduate curriculum leading to the degree of Bachelor of Science in Mechanical Engineering is spread over eight semesters **in four years.**

The departmental electives starting from the 6th semester in the curriculum provide the students the opportunity to get specialized in the field of their interest. All undergraduate students of Mechanical Engineering are required to spend a minimum of four weeks, twice during their undergraduate study, in industry to gain practical experience during summers.



- **Mechanics** branch of Mechanical Engineering Department is concerned with the study of forces and motion, as well as its applications to the design and analysis of mechanical systems. It is a vast field that includes many distinct issues, such as:
 - Applied mechanics is the application of physics ideas to engineering problems.
 - Dynamics is the study of how forces impact object motion.
 - Kinematics is the study of object motion without considering the forces that cause them to move.
 - Statics is the study of objects that are at rest or in equilibrium under the influence of forces.
 - Strength of Materials is the study of how materials perform under load.

- **Design and Manufacturing** branch of Mechanical Engineering Department is involved with the design, development, and manufacture of mechanical products. It is a broad field that encompasses many different topics, including:
 - Product design is the process of developing new items that fulfill the needs of customers and are easily made.
 - Manufacturing engineering is the design and operation of manufacturing systems, which includes equipment, processes, and materials selection.
 - Materials science is the study of material qualities and behavior.
 - The use of software to develop and analyze items is known as computer-aided design (CAD).
 - The use of software to control manufacturing equipment is known as computer-aided manufacturing (CAM).

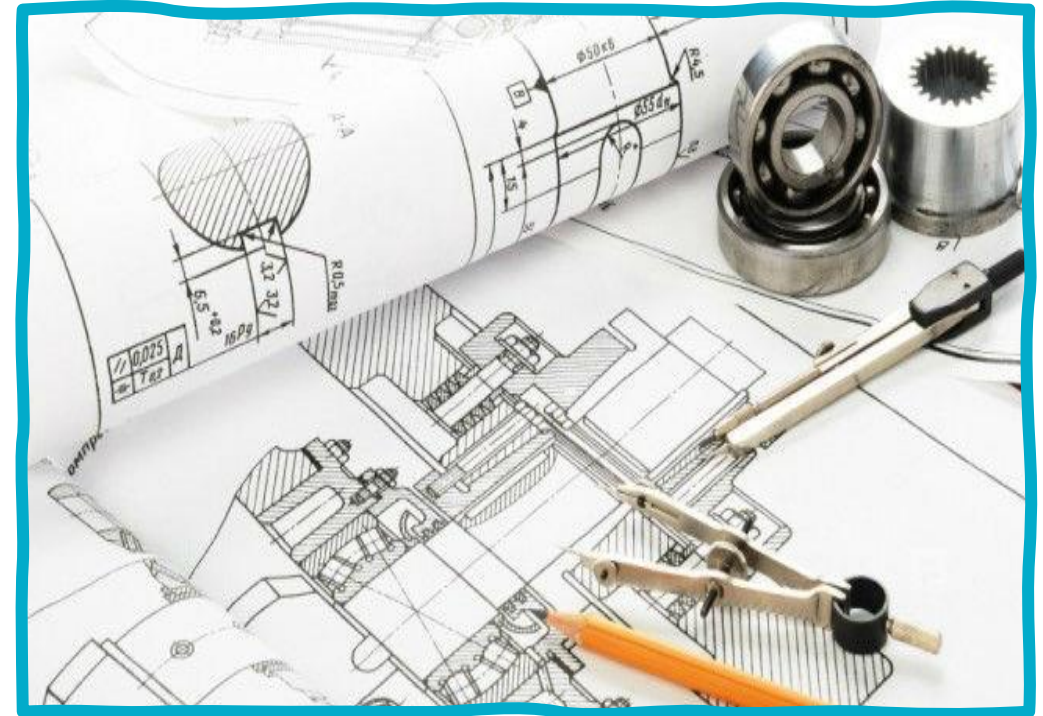
- **Energy** branch of Mechanical Engineering Department is concerned with the generation, conversion, and usage of energy. It is a vast field that includes many distinct issues, such as:
 - Design and operation of power plants that generate electricity from fossil fuels, nuclear energy, and renewable energy sources such as solar and wind power.
 - Energy conversion is the process of converting energy from one form to another, such as chemical energy in fuel to mechanical energy in a turbine.
 - Energy efficiency is the design and operation of energy-efficient systems such as heat exchangers, insulation, and energy-efficient appliances.
 - Renewable energy is the research and development of technologies that produce energy from renewable sources such as sun, wind, and hydroelectric power.

- **Thermodynamics** is a branch of Mechanical Engineering Department that studies heat and its link to energy. It is a fundamental science that directs the entire universe's energy. Many systems are developed and analyzed in the discipline of thermodynamics, concentrating on the following concepts.
 - The fundamentals of thermodynamics include thermodynamic laws, thermodynamic characteristics, and thermodynamic cycles.
 - Conduction, convection, and radiation are the three ways of heat transport.
 - Fluid mechanics is the study of the statics and dynamics of fluids.
 - Mass transfer refers to the movement of mass from one phase to another.

- **Machine Theory and Dynamics** branch of Mechanical Engineering Department is concerned with the study of machine motion and the forces that operate on them. It is a foundational science that employs various ideas utilized in the design, analysis, and operation of a wide variety of mechanical systems.
 - Kinematics: the study of the motion of objects without considering the forces that cause them to move
 - Dynamics: the study of how forces affect the motion of objects
 - Mechanisms: the study of the design and analysis of machine components and linkages
 - Vibrations: the study of the motion of objects that are oscillating back and forth
 - Control theory: the study of how to control the behavior of systems using feedback

What Does a Mechanical Engineer Do?

- **Mechanical Engineering** is the **oldest type of engineering** and has the **widest field of study**.
- **Mechanical Engineering** education allows students to solve problems within the **shortest time** and at a **low cost**.
- **Mechanical Engineers** deal with *machines, energy, and manufacturing methods*. Additionally, they design and manufacture machines and equipment for all branches of industry.
- The factors that **Mechanical Engineers** consider most in design as **practicality** and **cheapness**.



What qualifications should graduate mechanical engineering students have?



- Receiving a decent **engineering education**,
- Ability to **use design programs** such as AutoCAD and SolidWorks well,
- Ability to **express oneself well in at least one foreign language** such as English,
- Ability to **work in groups** and so on.

Employment Portals



- **Kariyer.net:** <http://www.kariyer.net/website/index.aspx>
- **Yenibiriş:** <http://www.yenibiris.com/>
- **Secret CV:** <http://www.secretcv.com/>
- **Careerjet:** <http://www.careerjet.com.tr/>
- **Government Institutions:** <http://www.ab-ilan.com/>,
<http://www.memurlar.net/>
- **Linkedin:** www.linkedin.com

What can I do after graduating from Mechanical Engineering?



Mechanical Engineers have many career opportunities such as

- Automotive Industry,
- Aerospace Industry,
- Defense Industry,
- Maritime Industry,
- Biotechnology,
- Manufacturing Industry.
- Construction Industry
- Chemical, Food, and Pharmaceutical Industries,
- Energy Industry,
- Textile Industry.

You can **submit a petition** or **send an e-mail** to the department chair for requests and applications such as,

- ☐ Volunteer internship application,
- ☐ Request to take summer school from another university,
- ☐ Extending the internship period,
- ☐ Internship application during the semester (**only for graduate students**), etc.



5 Steps of Preparation an E-Mail and Petition

1. Write a brief and clear subject

*Please avoid sending a blank email with your problem written in the subject line.

2. Start your email with a formal greeting,

*Please start your email with a kind 'Dear or Hello' followed by your professor's name/title (Dear Dr. ABC, Hello Professor ABC, etc.)

3) Introduce yourself,

*Write your name, surname, major, year, and student number.

4) Write your situation/request/application briefly in formal language,

* Use the correct grammar and spelling.

4) Conclude your e-mail with formal language.

*Use a formal closing such as 'Best regards', 'Sincerely', 'Thanks in advance', etc.



Prof. Dr. M.Fatih BAY

Head of Department



Asst. Prof. Dr. Hamit KENAN

Vice Head of Department



**Asst. Prof. Dr. Ömer Etka
HATİP**

Academician



Asst. Prof. Dr. Ahmet KIRLI

Academician



Asst. Prof. Dr. Saeed SOLTANI



**Asst. Prof. Dr. Sezgi KOÇAK
SOYLU**

Academician



Asst. Prof. Dr. Kayra KURŞUN

Academician



**Research Assistant Seren
Öykü YAZGAN**

Academician



**Research Assistant Fatih
ÇÖKMEZ**

Academician



**Research Assistant Mevlüt
ŞAHİN**

Study Fields



Prof. Dr. M.Fatih BAY

Academician

- Head of Department

- ❖ Experimental Particle Physics
- ❖ Development of Particle And Radiation Detectors
- ❖ Neutrino Physics



Asst. Prof. Dr. Hamit KENAN

Vice Head of Department

- Vice Head of Department
- Erasmus Department Coordinator

- ❖ Structural Analysis with Finite Element Method
- ❖ Machine Elements
- ❖ Transport Technique
- ❖ Computer-Aided Design

Study Fields



Asst. Prof. Dr. Kayra KURŞUN

Academician

- ❖ Engineering Mechanics
- ❖ Mechanical Vibrations
- ❖ Engineering Acoustics



Asst. Prof. Dr. Ömer Etkâ
HATİP

Academician

- ❖ Measurement Techniques
- ❖ Mechanics
- ❖ Machine Elements



Asst. Prof. Dr. Sezgi KOÇAK
SOYLU

Academician

- ❖ Heat Transfer
- ❖ Thermodynamics
- ❖ Nanotechnology

Study Fields



- ❖ Thermodynamics
- ❖ Heat Transfer
- ❖ Fluid Dynamics
- ❖ Engineering Mathematics



Research Assistant Fatih
ÇÖKMEZ
Academician

- ❖ Heat Transfer
- ❖ Nanotechnology
- ❖ Thermodynamics



Research Assistant Seren
Öykü YAZGAN
Academician

- ❖ Heat Transfer
- ❖ Thermodynamics
- ❖ Computational Fluid Dynamics



Research Assistant Mevlüt
ŞAHİN

- ❖ Engineering Mechanics
- ❖ Finite Element Method Analysis
- ❖ Composite Materials

Mechanical Engineering - Courses and Credits

FRESHMAN								
1 Fall Semester		Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
MATH 101	CALCULUS I	4	2	0	5	6	-	-
PHYS 101	PHYSICS I	3	0	0	3	4	-	-
PHYS 101L	PHYSICS I LABORATORY	0	0	2	1	2	-	-
CHEM 101	GENERAL CHEMISTRY	3	2	0	4	6	-	-
ME 121	ENGINEERING DRAWING I	3	0	0	2	3	-	-
CS 101	INTRODUCTION TO PROGRAMMING I	3	0	2	4	6	-	-
ENEN 101	ENGLISH FOR ENGINEERS I	4	0	0	4	4	-	-
TURK 101	TURKISH LANGUAGE I	2	0	0	2	2	-	-
TOTAL		22	4	4	25	33		

2 Spring Semester		Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
MATH 102	CALCULUS II	4	2	0	5	6	-	-
PHYS 102	PHYSICS II	3	0	0	3	4	-	-
PHYS 102L	PHYSICS II LABORATORY	0	0	2	1	2	-	-
MATH 201	LINEAR ALGEBRA	4	0	0	4	5	-	-
ME 122	ENGINEERING DRAWING II	0	1	2	2	3	ME 121	-
ME 112	STATICS (MECHANICS I)	3	0	0	3	5	-	-
ENEN 102	ENGLISH FOR ENGINEERS II	4	0	0	4	4	-	-
TURK 102	TURKISH LANGUAGE II	2	0	0	2	2	-	-
TOTAL		20	3	4	24	31		



Mechanical Engineering - Courses and Credits

SOPHOMORE										
3 Fall Semester			Theory	Practice	Lab	Credits	ECTS		Pre-requisite	Co-requisite
MATH 202	DIFFERANTIAL EQUATIONS		4	0	0	4	5		-	-
ME 201	FUND. OF ELECTRICAL AND ELECTRONICS ENGINEERING		2	0	1	3	4		-	-
ME 211	STRENGTH OF MATERIALS I		3	0	0	3	5		-	-
ME 213	DYNAMICS (MECHANICS II)		3	0	0	3	5		ME 112	-
ME 221	MATERIALS SCIENCE		2	0	2	3	5		-	-
ME 241	THERMODYNAMICS I		3	0	0	3	5		-	-
HIST 101	ATATURK'S PRINCIPLES AND REVOLUTION HISTORY I		2	0	0	2	2		-	-
		TOTAL	19	0	3	21	31			

4 Spring Semester			Theory	Practice	Lab	Credits	ECTS		Pre-requisite	Co-requisite
ME 202	PROGRAMMING FOR ENGINEERS		2	0	2	3	5		CS 101	-
ME 204	MEASUREMENT TECHNIQUES		2	1	0	3	5		-	-
ME 212	STRENGTH OF MATERIALS II		3	0	0	3	5		ME 211	-
ME 214	FLUID MECHANICS I		3	0	0	3	5		-	-
ME 222	DESIGN AND MANUFACTURING I		3	0	0	3	5		-	-
ME 242	THERMODYNAMICS II		3	0	0	3	5		ME 241	-
HIST 102	ATATURK'S PRINCIPLES AND REVOLUTION HISTORY II		2	0	0	2	2		-	-
		TOTAL	18	1	2	20	32			



Mechanical Engineering - Courses and Credits

JUNIOR								
5 Fall Semester		Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
ME 311	FLUID MECHANICS II	3	0	0	3	5	ME 214	-
ME 321	MACHINE ELEMENTS I	3	0	0	3	5	-	-
ME 323	DESIGN AND MANUFACTURING II	3	0	0	3	5	ME 222	-
ME 341	HEAT TRANSFER I	3	0	0	3	5	-	-
ME 300	SUMMER INTERNSHIP I	0	0	0	0	0	-	-
MATH 211	PROBABILITY AND STATISTICS FOR ENGINEERING	3	0	0	3	5	-	-
MATH 300	NUMERICAL ANALYSIS FOR ENGINEERING	4	0	0	4	5	-	-
TOTAL		19	0	0	19	30		

6 Spring Semester		Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
ME 322	MACHINE ELEMENTS II	3	0	0	3	5	ME 321	-
ME 342	HEAT TRANSFER II	3	0	0	3	5	ME 341	-
ME 352	MECHANICAL VIBRATIONS	3	0	0	3	5	-	-
ME 354	MECHANISMS	3	0	0	3	5	-	-
AE 4XXX	AREA ELECTIVES (DEPARTMENT ELECTIVE)	3	0	0	3	5	-	-
AE 4XXX	AREA ELECTIVES (DEPARTMENT ELECTIVE)	3	0	0	3	5	-	-
TOTAL		18	0	0	18	30		



Mechanical Engineering - Courses and Credits

SENIOR									
7 Fall Semester			Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
ME 451		SYSTEM DYNAMICS AND CONTROL	3	0	0	3	5	-	-
ME 400		SUMMER INTERNSHIP II	0	0	0	0	0	ME 300	-
GEN 200		ENGINEERING ECONOMICS	3	0	0	3	4	-	-
GEN 401		WORKER'S HEALTH AND WORK SAFETY I	2	0	0	2	2	-	-
AE 4XXX		AREA ELECTIVES (DEPARTMENT ELECTIVE)	3	0	0	3	5	-	-
AE 4XXX		AREA ELECTIVES (DEPARTMENT ELECTIVE)	3	0	0	3	5	-	-
AE 4XXX		AREA ELECTIVE	3	0	0	3	5	-	-
NAE 401		NON AREA ELECTIVE	3	0	0	3	5	-	-
TOTAL			20	0	0	20	31		

8 Spring Semester									
			Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
ME 402		SENIOR PROJECT	0	6	0	0	6	Explained below.	
GEN 402		WORKER'S HEALTH AND WORK SAFETY II	2	0	0	2	2	-	-
GEN 404		INOVATION AND ENTREPRENEURSHIP	2	0	0	2	2	-	-
NAE 402		NON AREA ELECTIVE	3	0	0	3	5	-	-
AE 4XXX		AREA ELECTIVE	3	0	0	3	5	-	-
AE 4XXX		AREA ELECTIVE	3	0	0	3	5	-	-
AE 4XXX		AREA ELECTIVE	3	0	0	3	5	-	-
TOTAL			16	6	0	16	30		



- Students are required to register for **48 mandatory courses** and **10 elective courses** over the course of 4 years.
- Out of the 10 elective courses, 8 of them must be **in-field electives**, and 2 of them must be **out-of-field electives**.
- Students are required to complete a total of **240 credits**.



COURSES	COURSE COUNT	CREDITS	ECTS
FUNDAMENTALS OF SCIENCE (FS)	8	26	35
FUNDAMENTALS OF ENGINEERING (FE)	4	11	17
ENGINEERING DESIGN (ED)	-	-	-
HUMAN AND SOCIETY SCIENCE (HSS)	4	12	12
ART (ART)	-	-	-
1st YEAR OVERALL	16	49	64

COURSES	COURSE COUNT	CREDITS	ECTS
FUNDAMENTALS OF SCIENCE (FS)	1	4	5
FUNDAMENTALS OF ENGINEERING (FE)	11	33	54
ENGINEERING DESIGN (ED)	-	-	-
HUMAN AND SOCIETY SCIENCE (HSS)	2	4	4
ART (ART)	-	-	-
2nd YEAR OVERALL	14	41	63

COURSES	COURSE COUNT	CREDITS	ECTS
FUNDAMENTALS OF SCIENCE (FS)	2	7	10
FUNDAMENTALS OF ENGINEERING (FE)	8	24	40
ENGINEERING DESIGN (ED)	3	6	10
HUMAN AND SOCIETY SCIENCE (HSS)	-	-	-
ART (ART)	-	-	-
3rd YEAR OVERALL	13	37	60

COURSES	COURSE COUNT	CREDITS	ECTS
FUNDAMENTALS OF SCIENCE (FS)	2	6	10
FUNDAMENTALS OF ENGINEERING (FE)	2	6	9
ENGINEERING DESIGN (ED)	8	18	36
HUMAN AND SOCIETY SCIENCE (HSS)	3	6	6
ART (ART)	-	-	-
4th YEAR OVERALL	15	36	61

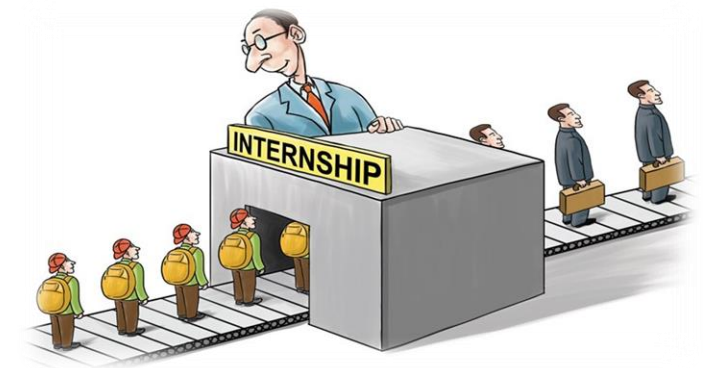


AREA ELECTIVES		Theory	Practice	Lab	Credits	ECTS	Pre-requisite	Co-requisite
0 - GENERAL COURSES								
ME 4001	INTRODUCTION TO FINITE ELEMENT METHODS	3	0	0	3	5	-	-
ME 4002	FINITE DIFFERENCE AND FINITE VOLUME METHODS	3	0	0	3	5	-	-
ME 4003	INTRODUCTION TO BOUNDARY ELEMENT METHODS	3	0	0	3	5	-	-
ME 4004	ELECTRIC MACHINERY	3	0	0	3	5	-	-
ME 4005	DATA STRUCTURES AND ALGORITHMS C / C++	3	0	0	3	5	-	-
ME 4006	ENVIRONMENT	3	0	0	3	5	-	-
ME 4007	COMPUTER GRAPHICS	3	0	0	3	5	-	-
MATH 4001	LOGIC I	3	0	0	3	5	-	-
MATH 4002	LOGIC II	3	0	0	3	5	-	-
MATH 4003	ADVANCED ENGINEERING MATHEMATICS	3	0	0	3	5	-	-

1 - MECHANICS								
ME 4101	INTRODUCTION TO HYDRODYNAMICS	3	0	0	3	5	-	-
ME 4102	INTRODUCTION TO AERODYNAMICS	3	0	0	3	5	-	-
ME 4103	INTRODUCTION TO STRUCTURAL DYNAMICS	3	0	0	3	5	-	-
ME 4104	EXPERIMENTAL STRESS ANALYSIS	3	0	0	3	5	-	-
ME 4105	STRUCTURAL ANALYSIS	3	0	0	3	5	-	-
ME 4106	INTRODUCTION TO SHELLS AND PLATES	3	0	0	3	5	-	-
ME 4107	INTRODUCTION TO FRACTURE MECHANICS	3	0	0	3	5	-	-
ME 4108	INTRODUCTION TO CONTACT MECHANICS	3	0	0	3	5	-	-
ME 4109	INTRODUCTION TO IMPACT AND COLLISION	3	0	0	3	5	-	-
ME 4110	INTRODUCTION TO ELASTICITY	3	0	0	3	5	-	-
ME 4111	INTRODUCTION TO PLASTICITY	3	0	0	3	5	-	-
2 - DESIGN AND MANUFACTURING								
ME 4201	COMPOSITES AND POLYMERS	3	0	0	3	5	-	-
ME 4202	TRANSPORT TECHNIQUES	3	0	0	3	5	-	-
ME 4203	COMPUTER AIDED MODELLING	3	0	0	3	5	-	-
ME 4204	CUTTING TOOLS	3	0	0	3	5	-	-
ME 4205	NON-DESTRUCTIVE TESTING METHODS	3	0	0	3	5	-	-
ME 4206	COMPUTER AIDED MANUFACTURING	3	0	0	3	5	-	-
ME 4207	WELDING TECHNIQUES	3	0	0	3	5	-	-
ME 4208	PHYSICAL METALLURGY	3	0	0	3	5	-	-
ME 4209	HYDRAULICS & PNEUMATICS	3	0	0	3	5	-	-
ME 4210	CASTING PROCESSES	3	0	0	3	5	-	-
ME 4211	ADDING MANUFACTURING (RAPID PROTOTYPING)	3	0	0	3	5	-	-
ME 4212	INTRODUCTION TO BIOMEDICAL ENGINEERING	3	0	0	3	5	-	-

3 - ENERGY									
ME 4301	HEATING VENTILATION AND AIR CONDITIONING	3	0	0	3	5	-	-	-
ME 4302	SOLAR ENERGY	3	0	0	3	5	-	-	-
ME 4303	ENERGY TECHNOLOGIES AND ECONOMICS	3	0	0	3	5	-	-	-
ME 4304	HEAT ECONOMY	3	0	0	3	5	-	-	-
ME 4305	NANOTECHNOLOGY	3	0	0	3	5	-	-	-
ME 4306	RENEWABLE ENERGY	3	0	0	3	5	-	-	-
ME 4307	NUCLEAR ENERGY AND SYSTEMS	3	0	0	3	5	-	-	-
4 - THERMODYNAMICS									
ME 4401	COMBUSTION ENGINES I	3	0	0	3	5	-	-	-
ME 4402	COMBUSTION ENGINES II	3	0	0	3	5	-	-	-
ME 4403	HEAT EXCHANGES	3	0	0	3	5	-	-	-
ME 4404	STEAM BOILERS	3	0	0	3	5	-	-	-
ME 4405	TURBINES	3	0	0	3	5	-	-	-
ME 4406	INTRODUCTION TO GAS DYNAMICS	3	0	0	3	5	-	-	-
5 - MACHINE THEORY AND DYNAMICS									
ME 4501	DYNAMICS OF MACHINERY	3	0	0	3	5	-	-	-
ME 4502	INTRODUCTION TO ROBOTICS	3	0	0	3	5	-	-	-
ME 4503	GROUND VEHICLE DYNAMICS	3	0	0	3	5	-	-	-
ME 4504	MECHATRONICS	3	0	0	3	5	-	-	-
ME 4505	NUCLEAR POWER PLANT DYNAMICS CONTROL	3	0	0	3	5	-	-	-
ME 4506	AEROSPACE DYNAMICS	3	0	0	3	5	-	-	-

- An internship period is at least 20 working days. The student must complete **at least two internships** in order to graduate. Regarding internships are as follows;
 - ME 300 Summer Internship I – Manufacturing
 - ME 400 Summer Internship II – Management and Organization
- Prerequisite for “ME 400 Summer Internship II” is “ME 300 Summer Internship I”



When is the graduation project taken?

- Students can undertake a graduation project in the 4th grade.
- To obtain a grade other than “FX” in ME-coded courses within the first 6 semesters.

(In the case where there are ME-coded courses that could not be taken or in which a grade of F/FX was received starting from the 4th grade, the Graduation Project and the ME-coded courses of the relevant semester can be taken simultaneously.)

Değiştirilen Eski Koşullar	Değiştirilmiş Durumu
2022 Müfredatı Ön koşul: ME 402 Bitirme Projesi dersinin ön koşulu Makine Mühendisliği Bölümü (ME 301 ve ME 401 Yaz Stajı dersleri hariç) ME Kodlu bölüm temel derslerini almış ve başarmış olmak.	Ön koşul: İlk 6 yarıyıldaki ME kodlu derslerden FX dışında bir not almış olmak. (4. sınıf itibariyle alınamayan veya F / FX ile kalınan ME kodlu ders olduğu durumda Bitirme Projesi ve ilgili dönemdeki ME kodlu dersler aynı anda alabilirler.)
2020 Müfredatı Ön koşul: ME 402 Bitirme Projesi dersinin ön koşulu Makine Mühendisliği bölümü temel zorunlu derslerini (ME kodlu) almış ve başarmış olmak.	Ön koşul: İlk 6 yarıyıldaki ME kodlu derslerden FX dışında bir not almış olmak. (4. sınıf itibariyle alınamayan veya F / FX ile kalınan ME kodlu ders olduğu durumda Bitirme Projesi ve ilgili dönemdeki ME kodlu dersler aynı anda alabilirler.)

Who determines the subject of the Graduation Project?

- The topics are determined by the academics who teach the relevant course.



Prof. Dr. M. Fatih BAY	
<i>Basic Fields of Study</i>	• Experimental Particle Pyhsics • Development of Particle And Radiation Detectors • Neutrino Pyhsics
<i>Graduation Project Topics</i>	• Design And Development of Radiation Detectors (Hardware or Software) • Topics that students want to develop together in the field of Mechanical Enginnering
<i>The Necessary Conditions for Graduation Project</i>	

https://admin.antalya.edu.tr/files/418/MK-FR-0003_Graduation_Project_Basic_Fields_and_Topics.pdf



Asst. Prof. Sezgi KOÇAK SOYLU	
<i>Basic Fields of Study</i>	• Heat Transfer • Thermodynamics • Nanotechnology
<i>Graduation Project Topics</i>	• Heat Exchanger Design • Evaporative Cooling • Cold Storage Design
<i>The Necessary Conditions for Graduation Project</i>	In order to select the graduation project from this branch, • The students have to pass the ME 241 Thermodynamics I, ME 242 Thermodynamics II, ME 341 Heat Transfer I and ME 342 Heat Transfer II courses with at least C grade.

Asst. Prof. Ömer Etki HATİP	
<i>Basic Fields of Study</i>	• Measurement Techniques • Mechanics • Machine Elements
<i>Graduation Project Topics</i>	• Design and Manufacture of a Miniature Experimental Set for Mechanical and Electrical Power Equivalence and Efficiency Measurement.
<i>The Necessary Conditions for Graduation Project</i>	In order to select the graduation project from this branch, • The students must have received or be currently enrolled in the following courses: ME 204 Measurement Techniques, ME 322 Machine Elements II, and ME 212 Strength II.

https://admin.antalya.edu.tr/files/418/MK-FR-0003_Graduation_Project_Basic_Fields_and_Topics.pdf

Asst. Prof. Üyesi Hamit KENAN	
<i>Basic Fields of Study</i>	• Structural Analysis with Finite Element Method • Machine Elements • Transport Technique • Computer-Aided Design
<i>Graduation Project Topics</i>	• Design, Static and Dynamic Analysis of Structural Elements • Design of Transport Systems (Elevator, Crane vs.) • Seismic Analysis of Transport Systems • Seismic Isolator Design
<i>The Necessary Conditions for Graduation Project</i>	

Asst. Prof. Üyesi Kayra KURŞUN	
<i>Basic Fields of Study</i>	• Engineering Mechanics • Mechanic Vibrations • Engineering Acoustics
<i>Graduation Project Topics</i>	• Vibration Analysis of A Cantilever Beam • Handheld Ultrasonic Camera Design For The Detection of Living Things Under The Wreckage • Prototype Building Earthquake Simulator Design
<i>The Necessary Conditions for Graduation Project</i>	In order to select the graduation project from this branch, • The students have to pass the ME 352 Mechanic Vibrations course with at least C grade.

https://admin.antalya.edu.tr/files/418/MK-FR-0003_Graduation_Project_Basic_Fields_and_Topics.pdf



To graduate, in accordance with Article 40 of the University's Regulation;

- Students who have **successfully** completed **all the courses** in our Department's curriculum,
- Students whose GPA is **at least 2.00** out of 4.00,
- Students who have completed **at least 70/100 points** from internships,
- Students whose total course loan is **at least 240 ECTS**,

are entitled to obtain a bachelor's degree from our faculty



When are summer internships conducted?

- In order to do “ME 300 Summer Internship I”, students must complete **at least four semesters**. This period can be reduced to three semesters for irregular students.
- In order to do “ME 400 Summer Internship II” students must complete **at least five semesters**. This period can be reduced to four semesters for irregular students.
- Mechanical engineering students can do their internships between the end date of the final exams of spring semester and the first day of the fall semester (summer term).
- Students who are qualified for graduation must apply to the head of the department to do their internships besides the summer term.



ME 300 Summer Internship I - Manufacturing

- In this internship, the aim is for students to examine basic production processes and learn the processes of drawing workpieces and machining on machine tools.



ME 400 Summer Internship II – Management and Organization

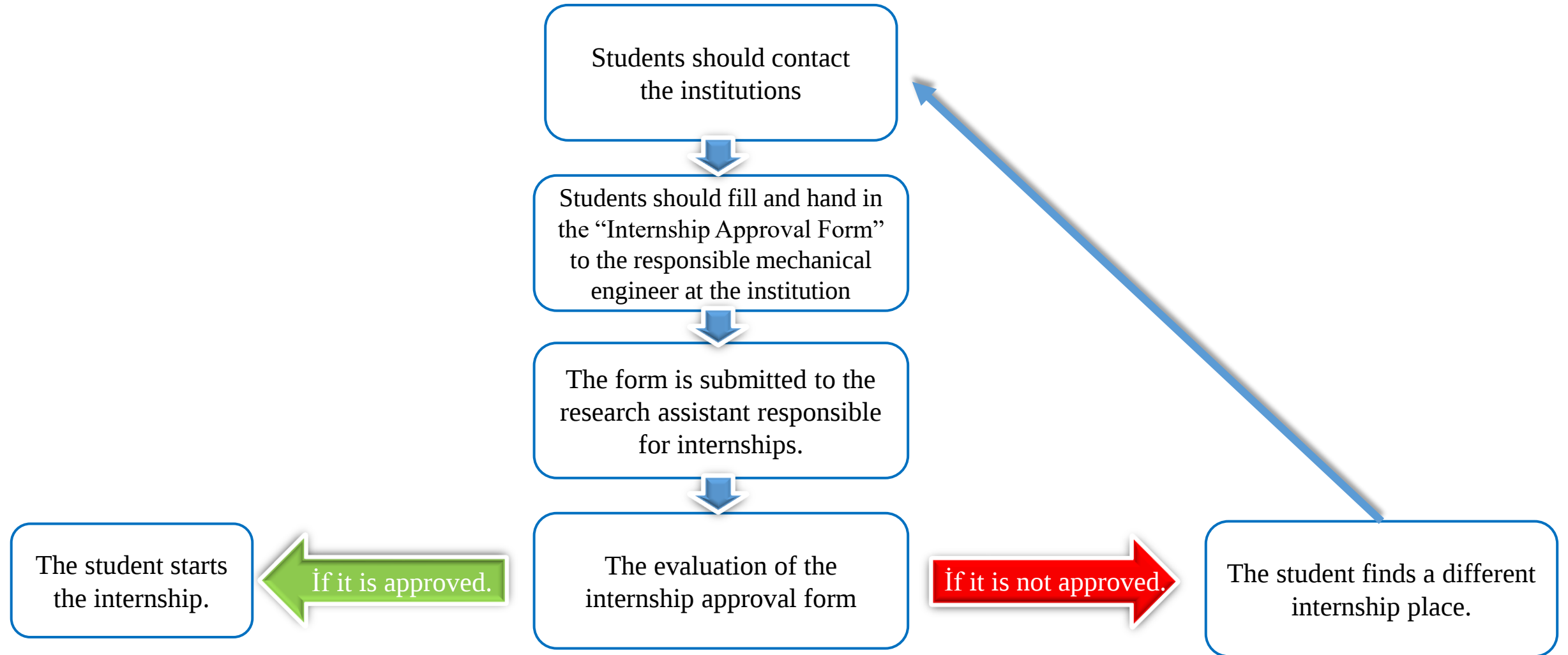
- The aim within the scope of this internship is for students to learn activities such as feasibility studies, cost analysis, quality control, and time studies at the internship site.



The conditions for success in the internship

- In order to be successful at “Summer Internship I and II” courses, students should have more than an overall score of **70/100** and there must be relevant information in their report for each of the sections. Additionally, failure to fulfill any of the internship requirements will be resulted in a fail from “ME300-Summer Internship I” and “ME400- Summer Internship II courses.
- Prerequisite for “ME 400 Summer Internship II” is “ME 300 Summer Internship I





Erasmus Exchange Program: A Cultural Enrichment and Academic Development Opportunity

What is the Erasmus Exchange Program?

The Erasmus Exchange Program is a program supported by the **European Union** that encourages student exchanges **among universities in Europe**. Its main aim is to provide students with the opportunity to **study abroad** and **experience different cultures**. The program is named after Desiderius Erasmus, the famous philosopher and humanist of the 16th century.

What Are the Advantages of the Erasmus Exchange Program?

1. Cultural Enrichment and Language Skills:

Erasmus offers the chance to live and work in different countries and cultures. This experience allows you to meet new people, learn new languages, and enrich yourself culturally. It enhances your personal development and provides a significant advantage for your future career.

Erasmus Exchange Program: A Cultural Enrichment and Academic Development Opportunity

What Are the Advantages of the Erasmus Exchange Program?

2. Academic Development:

The Erasmus program allows you to take courses at universities abroad. Studying at a different university enables you to experience different teaching methods and gain diverse perspectives. This expands your academic knowledge and helps you further develop yourself.

3. Personal Growth:

Erasmus boosts your self-confidence, independence, and problem-solving skills. Living and studying abroad will enhance your ability to cope with challenges

It also provides the opportunity to make new friends and gain a deeper cultural understanding.

4. Career Opportunities:

An Erasmus experience can enhance your resume and be an attractive feature for future employers. The time spent abroad can give you a global perspective and increase your access to international job opportunities.

Erasmus Exchange Program: A Cultural Enrichment and Academic Development Opportunity

How Can You Participate in the Erasmus Exchange Program?

To participate in the Erasmus Exchange Program, you should first contact the **Erasmus Coordinator** at your own university. Then, you need to learn about the program requirements and the application process. Many students take advantage of this opportunity every year, and you can also experience this exciting journey.

**Department Erasmus Coordinator : Dr. Hamit KENAN (hamit.kenan@antalya.edu.tr)*

MECHANICAL ENGINEERING

University of Nis	RS NIS01	Serbia
University of Life Sciences in Lublin	PL LUBLIN04	Poland
Alytaus Kolegija / University of Applied Sciences	LT ALYTUS 01	Lithuania
Cuiavian University in Wloclawek	PL WLOCLAW01	Poland
Technical University Of Varna	BG VARNA 02	Bulgaria
ENIT Ecole Nationale d'Ingenieurs de Tarbes	F TARBES 03	France

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Q/A