



Ders Bilgi Formu

Ders Adı	Kodu	Yerel Kredi	AKTS	Ders (saat/hafta)	Uygulama (saat/hafta)	Laboratuar (saat/hafta)
Sistem Analizi ve Tasarımı	MKT4813	3	5	2	0	2

Önkoşullar	Yok
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Yarıyıl	Güz
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Dersin Dili	İngilizce, Türkçe
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Dersin Seviyesi	Lisans Seviyesi
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Ders Kategorisi	Temel Meslek Dersleri
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Dersin Veriliş Şekli	Yüz yüze
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Dersi Sunan Akademik Birim	Mekatronik Mühendisliği Bölümü
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Dersin Koordinatörü	Hüseyin Üvet
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Dersi Veren(ler)	Hüseyin Üvet
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Asistan(lar)ı	
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Dersin Amacı	<p>The word engineer originated in the eleventh century and is derived from the Latin origin “ingeniator” meaning one with “ingenium” or the clever one. Before the scientific revolution, ingenuity was demonstrated in many devices. These devices were built by using a simple principle of what works and why it works in this way. The design process holds within its structure an iterative procedure. As the engineer proceeds through the steps, new information may be discovered and new objectives may be specified, at which time the steps may require revisiting. The more time and effort an engineer spends on articulating the problem definition and understanding the needs statement, the less frequent the need for iteration. This lecture introduces the students to the concepts and skills of system analysis and design. It includes expanded coverage of prototyping, mechatronics systems, and process specifications. This module aims to as to introduce variety of new projects used by mechatronic engineers to manage projects, analyze and document systems, design new systems and prototype them according to their plans. It introduces also a recent coverage of UML, wireless technologies and ERP; cloud based systems</p>
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Dersin İçeriği	<p>This lecture is about inventing and testing of ideas. Of course, ideas don't just happen. They need to be engendered by some appropriate problem or problem situation. My main purpose then is to describe how to generate engaging and motivating problem situations within the skill ambit of young engineering students. It is hoped that many new ideas will be generated by this process. Week 1 is an overview of the design steps and serves as an introduction. Week 2 presents a few design tools that designers must master prior to the design process. Some of these tools serve as an introduction to courses. Week 3 through 9 present the steps of the mechatronics design process. Students are aware that the sequence of these steps can be changed according to instructor preference. Instructors can alter the presentation sequence without having to change the presentation material. Week 10 discusses issues relating to the design cost. Week 11 through 14 presents a list of project descriptions that can serve as an entry point to instructors' assignments.</p>
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Opsiyonel Program Bileşenleri	Yok
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Ders Öğrenim Çıktıları

1	Understand the principles and tools of systems analysis and design
2	Understand the application of computing in different context
3	Solve a wide range of problems related to the analysis, design and construction of mechatronics systems
4	Analysis and Design of systems of small sizes
5	Plan and undertake a major individual project, prepare and deliver coherent and structured verbal and written technical reports

Haftalık Konular ve İlgili Ön Hazırlık Çalışmaları

Hafta	Konular	Ön Hazırlık
1	System Analysis Fundamentals: Introducing SA&D	
2	SA&D concepts, Roles of mechatronic system analyst.	
3	The system development life cycle	
4	Depicting mechatronic system graphically, determining feasibility, activity planning and control	
5	Technical requirements analysis: Sampling and investigating electronic-mechanic systems	
6	Prototyping	
7	Describing process specifications and structured decisions; The system proposal.	
8	Midterm 1 / Practice or Review	
9	The essentials of design designing output; designing input	
10	The essentials of design designing output; designing input II	
11	System implementation Quality assurance through mechatronic engineering	
12	Ara Sınav 2	
13	Technology Readiness Levels on Product Development	
14	Case Study	
15	Konu Tekrarı ve Uygulamaları	
16	Final	

Değerlendirme Sistemi

Etkinlikler	Sayı	Katkı Payı
Devam/Katılım		
Laboratuar		
Uygulama		
Arazi Çalışması		
Derse Özgü Staj		
Küçük Sınavlar/Stüdyo Kritiği		
Ödev	4	30
Sunum/Jüri		
Projeler		

Seminer/Workshop		
Ara Sınavlar	2	30
Final	1	40
Dönem İçi Çalışmaların Başarı Notuna Katkısı		60
Final Sınavının Başarı Notuna Katkısı		40
TOPLAM		100

AKTS İşyükü Tablosu			
Etkinlikler	Sayı	Süresi (Saat)	Toplam İşyükü
Ders Saati			
Laboratuvar			
Uygulama			
Arazi Çalışması			
Sınıf Dışı Ders Çalışması			
Derse Özgü Staj			
Ödev	4	10	40
Küçük Sınavlar/Stüdyo Kritiği			
Projeler			
Sunum / Seminer			
Ara Sınavlar (Sınav Süresi + Sınav Hazırlık Süresi)	2	20	40
Final (Sınav Süresi + Sınav Hazırlık Süresi)	1	36	36
Toplam İşyükü			116
Toplam İşyükü / 30(s)			3.87
AKTS Kredisi			4

Diğer Notlar	Yok
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