
ELEKTRİK - ELEKTRONİK MÜHENDİSLİĞİ
ÖZELLEŞİLEN ALANLAR

ÖZELLEŞİLEN ALAN TAMAMLAMAK BİR MEZUNİYET ŞARTIDIR.

2021-2022 akademik yılında ve sonrasında üniversiteye kaydolan öğrenciler için, dört Özelleşilen Alan'dan en az birinin iki paketinden (Paket 1 veya Paket 2) birini tamamlamak zorunludur.

Ancak, 2021-2022 akademik yılından önce kaydolan öğrenciler için, bu alanların tamamlanması mezuniyet için zorunlu değildir.

Özelleşilen Alanlara ait ders listesini aşağıda bulabilirsiniz.

Sinyal İşleme ve Haberleşme (SPC)

Devreler ve Sistemler (CAS)

Dijital Sistemler & Yazılım (DSS)

Güç & Enerji Sistemleri (PES)

Her alan, seçim yapabileceğiniz iki farklı ders paketi sunmaktadır.

Özelleşilen Alan Belgesi Alma Kuralları:

Herhangi bir Özelleşilen Alan'ın Paket 1'indeki zorunlu ve seçmeli dersleri tamamlayan ve Paket 1'den alınan derslerden en yüksek not ortalamalı üç dersten en az 2.00 not ortalamasına sahip öğrencilere mezuniyet diplomasına ek olarak Özelleşilen Alan Belgesi verilecektir.

Herhangi bir Özelleşilen Alan'ın Paket 2'indeki zorunlu ve seçmeli dersleri tamamlayan öğrencilere, not ortalaması başarı kriteri aranmaksızın, mezuniyet diplomasına ek olarak Özelleşilen Alan Belgesi verilecektir.

COMPLETING A SPECIALIZED AREA IS A GRADUATION REQUIREMENT

For students enrolled in the university in the 2021-2022 academic year and thereafter, it is mandatory to complete one of the two packages (Package 1 or Package 2) from at least one of the four Specialized Areas.

However, for students who enrolled before the 2021-2022 academic year, completing these areas is not required for graduation.

You can find the course list of the Specialized Areas below:

Signal Processing & Communication (SPC)

Circuits & Systems (CAS)

Digital Systems & Software (DSS)

Power & Energy Systems (PES)

Each area offers two different course packages to choose from.

Rules for Obtaining a Specialized Area Certificate:

Students who complete the compulsory and elective courses in Package 1 of any Specialized Area, and who achieve a minimum GPA of 2.00 in the three highest-graded courses taken from Package 1, will be awarded a Specialized Area Certificate in addition to their graduation diploma.

Students who complete the compulsory and elective courses in Package 2 of any Specialized Area will be awarded a Specialized Area Certificate in addition to their graduation diploma, without any GPA requirement.

	PAKET / PACKAGE 1 (SPC)	PAKET / PACKAGE 2 (SPC+)
	Sinyal İşleme ve Haberleşme **Signal Processing And Communications** **1 Zorunlu/Required + 2 Seçmeli/Electives**	**İleri Sinyal İşleme ve Haberleşme** **Advanced Signal Processing And Communications** **1 Zorunlu/Required + 5 Seçmeli/Electives**
	Özelleşilen Alan Belgesi Almak için Başarı kriterleri / **Satisfaction Criterion for Receiving a Specialized Area Letter:** Tamamladığı dersler arasından en yüksek harf notlu üç dersin not ortalaması en az 2.00 olan öğrenciler bu özelleşilen alan belgesini hak ederler. / Students who have a GPA of at least 2.00 in the three highest letter grades among the courses they have completed are eligible for this specialization certificate.)	**Özelleşilen Alan Belgesi Almak için Başarı kriterleri /** **Satisfaction Criterion for Receiving a Specialized Area Letter:** Aşağıdaki listeden 6 ders tamamlamak/ Complete at least 6 courses from the list below.
Özelleşilan Alan / Specialized Area **1** **Signal Processing and Communications**	**EE 302 (M) AI Based Digital Signal Processing** EE 421 Digital Image Processing EE 422 Digital Speech Processing EE 423 Deep Learning for Signal Processing EE 432 Advanced MATLAB for Signal Processing EE 444 Wireless Communications EE 450 Wireless Networks EE 452 Introduction to Internet of Things CS 447 Computer Networks CS 423 Computer Vision	**EE 302 (M) AI Based Digital Signal Processing** EE 421 Digital Image Processing EE 422 Digital Speech Processing EE 423 Deep Learning for Signal Processing EE 432 Advanced MATLAB for Signal Processing EE 444 Wireless Communications EE 450 Wireless Networks EE 452 Introduction to Internet of Things CS 447 Computer Networks CS 423 Computer Vision EE 411 Numerical Methods EE 442 Introduction to Digital Communication CS 440 ML in Finance CS 446 Security for Network Technologies CS 454 Introduction to ML & ANN CS 466 Introduction to Deep Learning CS 468 Contemporary Topics in Networking CS 304 Introduction to Artificial Intelligence, Machine Learning, and Data Science *(Please see the * note below)* * CS304 dersi yalnızca EE101 dersini 6 kredi olarak almış öğrenciler tarafından uzmanlık alan dersi olarak saydırılabilir. EE101 dersini 2 kredi olarak almış öğrenciler için ise bu ders zorunlu ders olup, uzmanlık alanı kapsamında kullanılamaz. / CS304 may be counted as a specialization course only by students who have taken EE101 as a 6-credit course. For students who have taken EE101 as a 2-credit course, this course is a compulsory course and cannot be used as part of their specialization area.

	PAKET / PACKAGE 1 (CAS)	PAKET / PACKAGE 2 (CAS+)
	Circuits And Systems **Devreler ve Sistemler** **1 Zorunlu/Required + 2 Seçmeli/Electives**	**Advanced Circuits And Systems** **İleri Devreler ve Sistemler** **2 Zorunlu/Required+ 4 Seçmeli/Electives**
	Özelleşilen Alan Belgesi Almak için Başarı kriterleri / **Satisfaction Criterion for Receiving a Specialized Area Letter:** Tamamladığı dersler arasından en yüksek harf notlu üç dersin not ortalaması en az 2.00 olan öğrenciler bu özelleşilen alan belgesini hak ederler. / Students who have a GPA of at least 2.00 in the three highest letter grades among the courses they have completed are eligible for this specialization certificate.)	**Özelleşilen Alan Belgesi Almak için Başarı kriterleri /** **Satisfaction Criterion for Receiving a Specialized Area Letter:** Aşağıdaki listeden 6 ders tamamlamak/ Complete at least 6 courses from the list below.
Özelleşilan Alan / Specialized Area 2 **Circuits & Systems**	**EE 350 (M) Electronics II** EE 302 AI Based Digital Signal Processing EE 367 Introduction to Optics EE 457 System Level RF design EE 480 Advanced Optoelectronics: Innovative Design EE 483 Microwave Circuits and Devices EE 484 Antennas EE 486 Quantum Information Technologies EE 488 Photonics	**EE 350 (M) Electronics II** **EE 302 (M) AI Based Digital Signal Processing** EE 367 Introduction to Optics EE 457 System Level RF design EE 480 Advanced Optoelectronics: Innovative Design EE 483 Microwave Circuits and Devices EE 484 Antennas EE 486 Quantum Information Technologies EE 488 Photonics EE 411 Numerical Methods EE 423 Deep Learning for Signal Processing EE 442 Introduction to Digital Communication EE 444 Wireless Communications EE 452 Introduction to Internet of Things EE 458 Circuit Level RF design CS 304 Introduction to Artificial Intelligence, Machine Learning, and Data Science *(Please see the * note below)* * CS304 dersi yalnızca EE101 dersini 6 kredi olarak almış öğrenciler tarafından uzmanlık alan dersi olarak saydırılabilir. EE101 dersini 2 kredi olarak almış öğrenciler için ise bu ders zorunlu ders olup, uzmanlık alanı kapsamında kullanılamaz. / CS304 may be counted as a specialization course only by students who have taken EE101 as a 6-credit course. For students who have taken EE101 as a 2-credit course, this course is a compulsory course and cannot be used as part of their specialization area.

	PAKET / PACKAGE 1 (DSS)	PAKET / PACKAGE 2 (DSS+)
	Digital Systems & Software **Dijital Sistemler ve Yazılım** **2 Zorunlu/Required + 1 Seçmeli/Electives**	**Advanced Digital Systems & Software** **İleri Dijital Sistemler ve Yazılım** **2 Zorunlu/Required + 4 Seçmeli/Electives**
Özelleşilan Alan / Specialized Area	**Özelleşilen Alan Belgesi Almak için Başarı kriterleri /** **Satisfaction Criterion for Receiving a Specialized Area Letter:** Tamamladığı dersler arasından en yüksek harf notlu üç dersin not ortalaması en az 2.00 olan öğrenciler bu özelleşilen alan belgesini hak ederler. / Students who have a GPA of at least 2.00 in the three highest letter grades among the courses they have completed are eligible for this specialization certificate.)	**Özelleşilen Alan Belgesi Almak için Başarı kriterleri /** **Satisfaction Criterion for Receiving a Specialized Area Letter:** Aşağıdaki listeden 6 ders tamamlamak/ Complete at least 6 courses from the list below.
3 **Digital Systems & Software**	**EE 462 (M) Digital Electronics and FPGA Design (eski kodu EE 362)** **CS 201 (M) Data Structures and Algorithms** EE 302 AI Based Digital Signal Processing EE 421 Digital Image Processing EE 422 Digital Speech Processing EE 491 Control Systems EE 497 Introduction to Automotive Embedded Software ME 417 Mechatronics CS 240 Computer Architecture CS 320 Software Engineering One from CS Minor Course List (CS202, CS321, CS333, CS350, CS410, CS447) **Not:** Paket 1'in tamamlanması için CS201 zorunlu derstir. CS105 dersi CS201 dersinin önkoşuludur. CS105 dersi Paket 1'in içerisinde değerlendirilmemiştir. Öğrencilerin Paket 1 listesinden bir başka dersi alması gerekmektedir. **Note:** CS201 is a mandatory course for completion of Package 1. The CS105 course is the prerequisite for the CS201 course. The CS105 course is not included in Package 1. Students must take another course from the Package 1 list.	**EE 462 (M) Digital Electronics and FPGA Design (eski kodu EE 362)** **CS 201 (M) Data Structures and Algorithms** EE 302 AI Based Digital Signal Processing EE 421 Digital Image Processing EE 422 Digital Speech Processing EE 491 Control Systems EE 497 Introduction to Automotive Embedded Software ME 417 Mechatronics CS 240 Computer Architecture CS 320 Software Engineering One from CS Minor Course List (CS202, CS321, CS333, CS350, CS410, CS447) EE 208 Fundamental Programming Concepts in C EE 452 Introduction to Internet of Things CS 105 OR CS 102 Object-Oriented Programming (*Only one of them can be considered)* CS 304 Introduction to Artificial Intelligence, Machine Learning, and Data Science *(Please see the * note below)* * CS304 dersi yalnızca EE101 dersini 6 kredi olarak almış öğrenciler tarafından uzmanlık alan dersi olarak saydırılabilir. EE101 dersini 2 kredi olarak almış öğrenciler için ise bu ders zorunlu ders olup, uzmanlık alanı kapsamında kullanılamaz. / CS304 may be counted as a specialization course only by students who have taken EE101 as a 6-credit course. For students who have taken EE101 as a 2-credit course, this course is a compulsory course and cannot be used as part of their specialization area.

	PAKET / PACKAGE 1 (PES)	PAKET / PACKAGE 2 (PES+)
Özelleşilan Alan / Specialized Area **4** **Power & Energy Systems**	**Power & Energy Systems** **Güç ve Enerji Sistemleri** **1 Zorunlu/Required + 2 Seçmeli/Electives**	**Advanced Power & Energy Systems** **İleri Güç ve Enerji Sistemleri** **2 Zorunlu/Required + 4 Seçmeli/Electives**
	Özelleşilen Alan Belgesi Almak için Başarı kriterleri / **Satisfaction Criterion for Receiving a Specialized Area Letter:** Tamamladığı dersler arasından en yüksek harf notlu üç dersin not ortalaması en az 2.00 olan öğrenciler bu özelleşilen alan belgesini hak ederler. / Students who have a GPA of at least 2.00 in the three highest letter grades among the courses they have completed are eligible for this specialization certificate.)	**Özelleşilen Alan Belgesi Almak için Başarı kriterleri /** **Satisfaction Criterion for Receiving a Specialized Area Letter:** Aşağıdaki listeden 6 ders tamamlamak/ Complete at least 6 courses from the list below.
	EE 303 (M) Fundamentals of Power Systems EE 302 AI Based Digital Signal Processing EE 372 Basics of Electric Machines EE 473 Energy Systems EE 474 Optimization for Engineers EE 475 E-Mobility Ecosystem EE 476 Energy Markets and Policies EE 493 Power Electronics ME 417 Mechatronics ME 419 Computational Methods for Engineers	**EE 303 (M) Fundamentals of Power Systems** **EE 473 (M) Energy Systems** EE 302 AI Based Digital Signal Processing EE 372 Basics of Electric Machines EE 474 Optimization for Engineers EE 475 E-Mobility Ecosystem EE 476 Energy Markets and Policies EE 493 Power Electronics ME 417 Mechatronics ME 419 Computational Methods for Engineers EE 411 Numerical Methods CS 440 ML in Finance CS 454 Introduction to ML & ANN IE 203 Engineering Economics IE 357 Energy Insights CS 304 Introduction to Artificial Intelligence, Machine Learning, and Data Science *(Please see the * note below)* * CS304 dersi yalnızca EE101 dersini 6 kredi olarak almış öğrenciler tarafından uzmanlık alan dersi olarak saydırılabilir. EE101 dersini 2 kredi olarak almış öğrenciler için ise bu ders zorunlu ders olup, uzmanlık alanı kapsamında kullanılamaz. / CS304 may be counted as a specialization course only by students who have taken EE101 as a 6-credit course. For students who have taken EE101 as a 2-credit course, this course is a compulsory course and cannot be used as part of their specialization area.