

**T.C. YEDİTEPE UNIVERSITY**  
**ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT**  
**UNDERGRADUATE PROGRAM INFORMATION PACKAGE**

**OBJECTIVES:**

Graduates of the Electrical and Electronics Engineering Undergraduate Program are expected to reach the following career goals in the field of electrical and electronics engineering:

- Those who aim the industry get acceptance from governmental or private firms and become productive engineers,
- Those who aim further education get acceptance from the distinguished universities of Turkey and the world, and are able to graduate from them.

**GOALS:**

To produce engineers in the field of Electrical and Electronics Engineering who:

- 1- can make the right decisions independently,
- 2- have developed a high sense of responsibility,
- 3- are reliable and productive,
- 4- can communicate effectively.

**PROGRAM LEARNING OUTCOMES:**

**1a-** Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline,

**1b-** Ability to use theoretical and applied knowledge in these areas in complex engineering problems.

**2a-** Ability to identify, formulate, and solve complex engineering problems,

**2b-** Ability to select and apply proper analysis and modeling methods for this purpose.

**3a-** Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result,

**3b-** Ability to apply modern design methods for this purpose.

**4a-** Ability to devise, select and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice.

**4b-** Ability to employ information technologies effectively.

**5a-** Ability to design experiments for investigating complex engineering problems or discipline specific research questions,

**5b-** Ability to conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.

**6a-** Ability to work efficiently in intra-disciplinary teams,

**6b-** Ability to work efficiently in multi-disciplinary teams,

**6c-** Ability to work individually.

**7a-** Ability to communicate effectively in Turkish, both orally and in writing,

**7b-** Knowledge of a minimum of one foreign language,

**7c-** Ability to write effective reports and comprehend written reports, prepare design and production reports,

**7d-** Ability to make effective presentations,

**7e-** Ability to give and receive clear and intelligible instructions.

**8a-** Recognition of the need for lifelong learning, ability to access information, ability to follow developments in science and technology,

**8b-** Ability to continue to educate him/herself.

**9a-** Consciousness to behave according to ethical principles and professional and ethical responsibility.

**9b-** Knowledge on standards used in engineering practice.

**10a-** Knowledge about business life practices such as project management, risk management, change management.

**10b-** Awareness in entrepreneurship and innovation.

**10c-** Knowledge about sustainable development.

**11a-** Knowledge about the global and social effects of engineering practices on health, environment, and safety,

**11b-** Knowledge about contemporary issues of the century reflected into the field of engineering.

**11c-** Awareness of the legal consequences of engineering solutions.

### Teaching and Learning Methods

Teaching and learning methods and strategies are chosen to improve the student's skills such as self learning, lifelong learning, observation, presentation, critical thinking, team working and IT.

Also, to achieve a better learning with students having different learning styles, the program is supported by convenient methodologies given below\*:

Teaching and Learning Methods	Major Learning Activities	Tools
Course (lecturing, discussion, question-answer)	Listening, thinking, understanding, interpretation, writing, observation, critical thinking, question development	Standard class ware, text book and class-notes, multimedia, data projector, computer, overhead projector
Problem Solving	Listening, thinking, understanding, interpretation, question development	Standard class ware, solutions manual, multimedia, data projector, computer, overhead projector
Simulation	IT skills, observation, thinking, understanding, verification	Computer, special software
Seminar	Listening, understanding, interpretation, question development, critical thinking, following advancements in EE, lifelong learning	Standard class ware, multimedia, data projector, computer, overhead projector, special equipment
Interdisciplinary team work	Research, critical thinking, question development, report writing, organizational skills, teamwork, IT skills, lifelong learning	Internet database, library database, e-mail, online discussion, Web-based discussion, special equipment
Laboratory	Observation, measurement, recording of measurement results, interpretation, report writing, IT skills, organizational skills, teamwork	Special equipment
Term paper	Research, investigation, thinking, interpretation, report writing, following advancements in EE, lifelong learning	Computer, internet database, library database
Guest Speaker	Listening, understanding, interpretation, critical thinking, question development, following advancements in EE, lifelong learning	Standard class ware, multimedia, data projector, computer, overhead projector, special equipment
Sample Project Study	Research, investigation, thinking, interpretation, report writing, following advancements in EE, lifelong learning	Computer, special software, internet database, library database

(\*) Depending on the course specifications, one or more teaching and learning methods might be implemented

Course Code	Program Sub-Outcomes																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	6c	7a	7b	7c	7d	7e	8a	8b	9a	9b	10a	10b	10c	11a	11b	11c
EE102	X			X							X		X	X	X	X	X		X	X	X		X	X	X	X	X	X
EE211	X			X			X			X	X		X			X		X				X						
EE212	X		X	X		X	X	X				X	X	X		X	X						X					
EE226	X			X				X					X						X	X	X							
EE232	X		X	X			X																					
EE323	X	X	X	X						X			X															
EE333	X	X	X	X	X				X	X	X					X		X					X					
EE334	X		X	X	X	X		X		X																		
EE354	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X		X	X	X	X					
EE361	X		X	X						X						X												
EE371	X	X	X	X			X	X			X		X		X	X		X		X	X							
EE372	X	X	X	X			X	X			X		X		X	X						X						
EE384	X		X	X						X						X												
EE421	X	X	X	X			X	X		X	X			X		X	X											
EE426	X	X	X	X			X	X					X	X	X	X	X											
EE429	X	X	X	X			X	X		X	X		X			X	X											
EE433		X	X	X	X	X		X																				
EE434	X	X	X	X				X																				
EE477	X	X	X	X	X	X							X		X	X						X	X					
EE481	X	X	X	X	X	X	X						X		X	X	X					X	X				X	X

<b>Course Categories</b>	<b>AKTS</b>
<b>SUPPORT COURSES</b>	
AFE 131 – Academic English I	5
AFE 132 – Academic English II	5
ES 112 – Algorithms and Computer Programming	6
HUM 103 – Humanities	3
MATH 131 – Calculus I	6
MATH 132 – Calculus II	6
MATH 221 – Linear Algebra	6
MATH 241 – Differential Equations	6
MATH 281 - Probability	5
ES 272 – Numerical Analyses	6
PHYS 101 – Physics I	6
PHYS 102 – Physics II	6
CHEM 101 – General Chemistry	6
FE XX1 – Free Elective I	5
FE XX2 – Free Elective II	5
FE XX3 – Free Elective III	5
<b>Total</b>	<b>87</b>
<b>COMPULSORY COURSES</b>	
EE 102 – Introduction to Electrical and Electronics Engineering	3
EE211 – Electric Circuits	7
EE241 – Digital Circuits	6
EE212 – Circuits and Systems	7
EE232 – Introduction to Electronics	6
EE226 – Fundamentals of Electromagnetic Fields	6
EE 242 – Microprocessor Systems	6
EE 323 – Electromagnetic Waves and Transmission Lines	8
EE 333 – Analog Electronic Circuits	8
EE 361 – Introduction to Digital Signal Processing	7
EE 371 – Electromechanical Energy Convergence	7
EE 334 – Digital Electronic Circuits	8
EE 354 – Communication Systems	8
EE 372 – Fundamentals of Power Systems	7
EE 384 – Introduction to Control Systems	7
EE 421 – Antennas and Propagation	7
EE 492 – Engineering Project	8
EE 400 – Summer Practice	1
<b>Total</b>	<b>117</b>
<b>FIELD COURSES</b>	
EE XX1 – Technical Elective I	5
EE XX2 – Technical Elective II	5
EE XX3 – Technical Elective III	5
EE XX4 – Technical Elective IV	5
EE XX5 – Technical Elective V	5
EE XX6 – Technical Elective VI	5
<b>Total</b>	<b>30</b>

<b>Other Courses</b>	
HTR101-102 - ATATÜRK'S PRINCIPLES AND HISTORY OF TURKISH REVOLUTION I and II	4
TKL201-202 - TURKISH LANGUAGE I and II	4
<b>Total</b>	<b>8</b>
<b>Total ECTS for all courses</b>	<b>242</b>

### **Level of Qualification:**

Students who complete the program successfully and acquire the program competencies receive an “undergraduate degree” in the area of Electrical and Electronics Engineering.

### **Admission Requirements:**

In line with the academic and legal procedures of the university, the students who apply for admission into the program should follow the process governed by ÖSYM and succeed in the university entrance examination. Students who have started an equivalent program in Turkey or abroad may apply for transfer to the program. Application of the student is evaluated before the semester starts considering the credentials of the student and the degree for which s/he is applying. Detailed information regarding admission to the university is available in the university catalogue and the university web site.

Students, who come to the university from abroad through exchange programs whose conditions have been drawn by an agreement and approved by the university, may take the courses offered in the program. To take a course, the student should demonstrate that s/he has completed its prerequisite courses or their equivalents. All courses in the program curriculum are conducted in English.

### **Occupational Profiles and Continued Advance Education:**

There are a wide range of job, advanced degree and academic career opportunities for our graduates. They will be able to find jobs in the disciplines of electronics, communication, signal processing, power and energy, electromagnetic fields and waves, control and automation. Our graduates have proficiency in both electrical and electronic engineering. They are employed in public and private sectors, and doing research towards advanced degrees in the world's prestigious institutions, in the area of Electrical and Electronics Engineering and related fields.

### **Graduation Requirements:**

In order to graduate from the program, a student is required complete a total of 44 courses including 35 compulsory, 3 free elective and 6 technical elective courses to receive a total of 140 course credits and 242 ECTS and obtain a CGPA of at least 2.00/4.00. Among these courses, EE492 Graduation Project allows the student to apply the knowledge he/she has acquired during the program to a real-life engineering project. Moreover, each student is required to work as an intern in an institution which is approved by the department for a total of 20 working days. This compulsory internship report must pass the department's requirements and it is listed with a course code of EE400.

### **Assessment Methods:**

Exams (Quiz, Midterm, Final), Experiment, Homework, Project

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