



THE HASHEMITE UNIVERSITY
Faculty of Engineering
Department of Electrical Engineering

Study Plan 2011

The requirements for conferring of the Bachelor's degree in Electrical Engineering are:

- The minimum requirements for EE is (160) credit hours for graduation completion.
- The detailed distribution of the minimum credit hours required in EE is shown below:

	Credit Hours
1- University Requirements	27
a. Compulsory	12
b. Electives	15
2- College Requirements	33
a. Compulsory	33
b. Electives	0
3- Department Requirements	97
a. Compulsory	82
b. Electives	15
4-Free Elective	3
Total	160

The indications of the course subject's digits

Field Title	Field No.
Mathematics and Basic Courses	0
Mathematics and Basic Courses	1
Communications	2
Communications	3
Electronics	4
Electronics	5
Power Systems	6
Power Systems	7
Others	8
Others	9

Example

Electronics(1)						110409240	
11	0	4	0	9	2	4	0
Plan Year	Faculty		Department		Level	Field	Sequence

First: University Requirements: (27) Twenty seven credit hours as follows:

- a. University Compulsory Requirements: (12) Twelve credit hours as shown in the following table:**

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
111404117	Military Sciences	3	-	3	-
111404118	National Education	3	-	3	-
111405101	Arabic Language	3	-	3	Level test in Arabic language or 111405098
111405110	English Language	3	-	3	Level test in English language or 111405099

b. Elective Requirements: (15) Fifteen Credit Hours selected from the following table. Students should study one course at least and two at most from each category. Categories include the following fields:

1. Human Sciences
2. Social and economic sciences
3. Science, Technology, Agriculture and Health.

First Field: Human Sciences

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
111404110	Islam and contemporary Issues	3	-	3	-
111404111	Islamic Thought	3	-	3	-
111404112	Jerusalem's History and Civilization	3	-	3	-
111404113	Fundamentals of Art and Literature	3	-	3	-
111404114	Jordan's History and Civilization	3	-	3	-
111405102	Applied Arabic Language	3	-	3	-
111405111	Applied English Language	3	-	3	-
111405112	Technical Translation	3	-	3	-
141603101	Italian Language	3	-	3	-
141404193	Palestinian Cause	3	-	3	-

Second Field: Social and Economic Sciences

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
111404101	University life of student	3	-	3	-
111404102	Psychology	3	-	3	-
111404103	Life Skills	3	-	3	-
111404104	Family and child education	3	-	3	-
111404115	Science of Sociology	3	-	3	-
111404116	Archeology and tourism science	3	-	3	-
111404120	Economic Science and Management	3	-	3	-
111404121	Law And The Ordering of Our Life	3	-	3	-

Third Field: Science and Technology and Agriculture and Health

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
110108104	Energy Resources	3	-	3	-
110108113	Biotechnology and society	3	-	3	-
110108114	Automobile Essentials	3	-	3	-
110108115	Computer Ethics	3	-	3	-
110108130	Health promotion and nutrition	3	-	3	-
110108131	Health Education and First Aids	3	-	3	-
110108132	Sport and Health	3	-	3	-
110108133	Environmental awareness	3	-	3	-

Second: College Requirements: (33) Thirty Three Credit Hours as shown in the following table:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
110101102	Calculus 2	3	3	–	110108101
110101201	Calculus (3)	3	-	3	110101102
110101203	Ordinary Differential Equations (1)	3	-	3	110101102
110102101	General Physics (1)				–
110102102	General Physics (2)	3	-	3	110102101
110102103	General Physics Lab 1	1	–	3	110102101 – Co-requisite
110103107	Basics of General Chemistry	3	3	-	–
110103108	Basics of General Chemistry Lab.	1	–	3	110103107 -Co-requisite
110108101	Calculus 1	3	3	–	–
110108112	Computer Programming	3	3	–	Level Test in Computer Skills or 110108099
110400201	Manual Engineering Drawing	2	1	3	–
110400202	Computer Aided Engineering Drawing	1	–	3	110400201
110400101	Engineering Workshop	1	0.5	2	–
110400203	Ethics and Communication Skills	3	3	–	111405110

Third: Department Requirements: (97) Ninety Seven Credit Hours as Follows:

a. Compulsory Requirements: (82) Eighty Two Credit Hours as shown in the following table:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
110402303	Numerical Analysis	3	-	3	110108112 and 110101203
110405331	Automatic Control	3	-	3	110101203
110405332	Automatic Control Lab	-	3	1	110405331
110406260	Applied Mathematics	3	0	3	110101203
110408220	Digital Logic	3	-	3	110101102 or 110101152
110408221	Digital Logic Lab.	-	3	1	110408220
110408332	Assembly Language and Microprocessors	3	-	3	112408220 and 110409240
110408333	Microprocessors Lab	-	3	1	110408221 and 110408332
110408530	Microprocessors Based Systems	3	-	3	110408332
110409201	Electrical Circuits (1)	3	-	3	110101102 and 110102102
110409203	Electrical Circuits (2)	3	-	3	110409201
110409221	Electromagnetic (1)	3	-	3	110101201 and 110102102
110409240	Electronics (1)	3	-	3	110409201 or 110406229
110409300	Electrical Circuits Lab	-	3	1	110102103 and (110409203 or 110406229)
110409321	Probability and Random Processes	3	-	3	110101102
110409322	Signals and Systems	3	-	3	110406260 or (110101152 and 110101203)
110409324	Electromagnetic (2)	3	-	3	110409221
110409325	Analog Communications	3	-	3	110409322
110409341	Electronics (2)	3	-	3	110409240
110409342	Electronics Lab	-	3	1	110409300 and (110409341 or 110406320)
110409343	Digital Electronics	3	-	3	110409240 and 110408220
110409361	Electrical Machines (1)	3	-	3	110409221

110409400	Practical Training	-	-	-	The Completion of (112) Credit Hours at least including 110400203 without the Courses from outside the curriculum
110409421	Communication Lab	-	3	1	110409432
110409422	Digital Signal Processing	3	-	3	110409322 or 110406370
110409432	Digital Communications	3	-	3	110409325 and 110409321
110409433	Wireless Communications Systems	3	-	3	110409432
110409461	Electrical Power Systems	3	-	3	110409361
110409470	Electrical Machines and Electrical Power Systems Lab	-	3	1	110409461
110409520	Communications Electronics	3	-	3	110409325 and 110409341
110409560	Power Electronics	3	-	3	110409341
110409561	Renewable Power Generation	3	-	3	110409461
110409581	Graduation Project (1)	-	3	1	The Completion of (120) Credit Hours at least without the Courses from outside the curriculum and Department consent
110409582	Graduation Project (2)	-	6	2	110409581

b. Elective Requirements: (15) Fifteen credit hours to be chosen from one of the following two fields.

Important Notes:

First: The student should pass (100) One Hundred credit hours before studying his/her elective courses.

Second: The student should choose (15) Fifteen credit hours of the elective requirements from one of the two fields been chosen.

Third: When the field is chosen, the student is not allowed to study elective courses from the other field.

1. Power Engineering:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
110409464	Electrical Machines (2)	3	-	3	110409361
110409466	Power System Analysis	3	-	3	110409461
110409562	Power System Reliability	3	-	3	110409461
110405531	Advanced Control	3	-	3	110405331 and (110405426 or 110409322)
110409563	Smart Grid Technology	3	-	3	110409561
110409564	Power System Stability	3	-	3	110409461
110409565	Special Topics in Power Engineering	3	-	3	Dept. Consent
110409566	Advanced Smart Grid Technology	3	-	3	110409561 and 110409433
110409567	Power System Protection	3	-	3	110409461
110409568	Electric Drive	3	-	3	110409361 and 110409560

2. Communication and Electronics Engineering:

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
110409424	Digital Communication Networks	3	-	3	110409432
110409425	Optical Communications	3	-	3	110409325 and 110409324
110409428	Satellite Communications	3	-	3	110409432
110409429	Antennas and Wave Propagation	3	-	3	110409324
110409431	Special Topics in Communications and Electronics Engineering	3	-	3	Dept. Consent
110409444	Analog Filter Design	3	-	3	110409341
110409445	Electronics (3)	3	-	3	110409341
110409448	Microwave Electronics Systems	3	-	3	110409341 and 110409324
110409521	Advanced Wireless Communications	3	-	3	110409433
110409540	Opto-Electronics	3	-	3	110409341
110409541	Solid State Electronics	3	-	3	110409341

Fourth: Free Electives of three (3) credit hours which can be taken from any of the courses provided by the faculties of the University with Dept. Consent.

Fifth: The duration for practical training is eight continuous weeks inside or outside Jordan in specialized institutions, public or private with total of (40) credit hours of weekly training. With Dept. Consent (The Completion of (112) Credit Hours at least including 110400203 without the Courses from outside the curriculum).

Courses Offered for Electrical Engineering Students

Course No.	Course Title	Detailed Distribution of Credit Hours		Credit Hours	Prerequisite or Co-requisite
		Lecture	Practical		
110409201	Electrical Circuits (1)	3	-	3	110101102 and 110102102
110409203	Electrical Circuits (2)	3	-	3	110409201
110409221	Electromagnetic (1)	3	-	3	110101201 and 110102102
110409240	Electronics (1)	3	-	3	110409201 or 110406229
110409300	Electrical Circuits Lab	-	3	1	110102103 and (110409203 or 110406229)
110409321	Probability and Random Processes	3	-	3	110101102
110409322	Signals and Systems	3	-	3	110406260 or (110101152 and 110101203)
110409324	Electromagnetic (2)	3	-	3	110409221
110409325	Analog Communications	3	-	3	110409322
110409341	Electronics (2)	3	-	3	110409240
110409342	Electronics Lab	-	3	1	110409300 and (110409341 or 110406320)
110409343	Digital Electronics	3	-	3	110409240 and 110408220
110409361	Electrical Machines (1)	3	-	3	110409221
110409400	Practical Training	-	-	-	The Completion of (112) Credit Hours at least successfully including 110400203 without the Courses from outside the curriculum
110409421	Communications Lab	-	3	1	110409432
110409422	Digital Signal Processing	3	-	3	110409322 or 110406370
110409424	Digital Communication Networks	3	-	3	110409432
110409425	Optical Communications	3	-	3	110409325 and 110409324

110409428	Satellite Communications	3	-	3	110409432
110409429	Antennas and Wave Propagation	3	-	3	110409324
110409431	Special Topics in Communications and Electronics Engineering	3	-	3	Dept. Consent
110409432	Digital Communications	3	-	3	110409325 and 110409321
110409433	Wireless Communications Systems	3	-	3	110409432
110409444	Analog Filter Design	3	-	3	110409341
110409445	Electronics (3)	3	-	3	110409341
110409448	Microwave Electronics Systems	3	-	3	110409341 and 110409324
110409461	Electrical Power Systems	3	-	3	110409361
110409464	Electrical Machines (2)	3	-	3	110409361
110409466	Power System Analysis	3	-	3	110409461
110409470	Electrical Machines and Electrical Power Systems Lab	-	3	1	110409461
110409520	Communications Electronics	3	-	3	110409325 and 110409341
110409521	Advanced Wireless Communications	3	-	3	110409433
110409540	Opto-Electronics	3	-	3	110409341
110409541	Solid State Electronics	3	-	3	110409341
110409560	Power Electronics	3	-	3	110409341
110409561	Renewable Power Generation	3	-	3	110409461
110409562	Power System Reliability	3	-	3	110409461
110409563	Smart Grid Technology	3	-	3	110409561
110409564	Power System Stability	3	-	3	110409461
110409565	Special Topics in Power Engineering	3	-	3	Dept. Consent
110409566	Advanced Smart Grid Technology	3	-	3	110409561 and 110409433
110409567	Power System Protection	3	-	3	110409461
110409568	Electric Drive	3	-	3	110409361 and 110409560
110409581	Graduation Project (1)	-	3	1	The Completion of (120) Credit Hours at least successfully without the Courses from outside the curriculum and Department consent
110409582	Graduation Project (2)	-	6	2	110409581

Courses Offered for non EE Students:

Course No.	Course Title	Detailed Distribution of Cr. Hr.		Credit Hours	Pre-requisite or Co-requisite (P)
		Lecture	Practical		
110409326	Applied Electromagnetic	3	-	3	110101201 and 110102102
110409344	Electronics Fundamentals Lab	-	3	1	110409300 and 110409240
110409348	Introduction to Electronics	2	-	2	110406229
110409363	Principles of Electrical Machines	2	-	2	110406229
110409364	Electronics and Electrical Machines Lab	-	3	1	110409348 and 110409363