The Hashemite University

Faculty of Engineering
Curriculum for the Degree of Bachelor of Science in
Computer Engineering (CPE)
<u>PLAN 2011</u>

Requirements the Degree of Bachelor of Science in Computer Engineering:
- In order to obtain the Degree of Bachelor of Science in Computer Engineering, the student should successfully complete (160) credit hours according to the instructions of this plan.

- The required credit hours are distributed as shown in the Table given below:

Number of credit hours	Requirements
1.University Requirements	27
A. Compulsory	12
B. Elective	15
2.College Requirements	33
A. Compulsory	33
B. Elective	-
3.Department Requirements	97
A. Compulsory	82
B. Elective	15
4.University Free Elective	3
Total	160

To facilitate course numbering, the second digit in a course number is related to a study field as follows:

Field's Code	Field's Title
0	General engineering topics
1	Computer programming
2	Digital logic and digital systems
3	Microprocessors
4	Computer organization, architecture and maintenance
5	Computer networks and operating systems
6	Computer systems and performance evaluation
7	Computer controlled systems
8	Practical Training
9	Special topics, Projects

For example:

110408220			Digital Logic				
11	0	4	0	8	2	2	0
Plan Year	College		Department		Level	Field	Sequence

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

1. Compulsory University Requirements (12) twelve credit hours, as follows:

Course No	Course title	Credit hours	Weekly Hours		Pre-request or Co-request or parallel
			Lecture	Practical	
111404117	Military Science	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

2. Elective university requirements are (15) fifteen credit hours and the student chooses them from the courses that are listed as 3 groups in the tables shown below. At least one course from each group or a maximum of two courses from each group must be taken. The groups include the following three fields:
   1. Field of humanities.
   2. Field of social and economic sciences.
   3. Field of sciences, technology, agriculture, and health.

a. From (3-6) credit hours selected from the field of humanities:

Course No	Course title	Credit hours	Weekly Hours		Pre-request or Co-request or parallel
			Lecture	Practical	
111404113	Fundamentals of Art and Literature Aestheticism	3	3	-	-
111404111	Islamic Thought	3	3	-	-
111404114	Jordan's History and Civilization	3	3	-	-
111405102	Applied Arabic Language	3	3	-	-
111405111	Applied English Language	3	3	-	-
111404112	Jerusalem's History and Civilization	3	3	-	-

Course No	Course title	Credit hours	Lecture	Practical	Pre-request or Co-request or parallel
111404110	Islam and contemporary Issues	3	3	-	-
111405112	Artistic Interpretation	3	3	-	-

b. From (3-6) credit hours selected from the field of social and economic sciences:

Course No	Course title	Credit hours	Weekly Hours		Pre-request or Co-request or parallel
			Lecture	Practical	
111404115	Science of Sociology	3	3	-	-
111404121	Law and the Ordering of our Life	3	3	-	-
111404101	University Life of Student	3	3	-	-
111404102	Introduction to Psychology	3	3	-	-
111404103	Life Skills	3	3	-	-
111404104	Family and Child Rearing	3	3	-	-
111404120	Economic and Management Science	3	3	-	-
111404116	Archeology and tourism	3	3	-	-

c. From (3-6) credit hours selected from the field of sciences, technology, agriculture, and health:

Course No	Course title	Credit hours	Weekly Hours		Pre-request or Co-request or parallel
			Lecture	Practical	
110108104	Energy Sources	3	3	-	-
110108113	Biotechnology and Society	3	3	-	-
110108114	The basics of car mechanics	3	3	-	-
110108115	Computer Ethics	3	3	-	-
110108130	Health Promotion and Nutrients	3	3	-	-
110108131	Health Education and First Aid	3	3	-	-
110108132	Sport and Health	3	3	-	-

Course No	Course title	Credit hours	Weekly Hours		Pre-request or Co-request or parallel
			Lecture	Practical	
110108133	Environmental Awareness	3	3	-	-

Second: College Requirements: (33) thirty three credit hours which include the following:

Course No	Course title	Credit hours	Weekly Hours		Pre-request or Co-request or parallel
			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)	3	–	3	–
110102102	General Physics (2)	3	–	3	110102101
110102103	General Physics Lab	1	-	3	110102101 –Parallel
110103107	Basics of General Chemistry	3	–	3	–
110103108	Basics of General Chemistry Laboratory	1	–	3	–
110108101	Calculus (1)	3	3	–	–
110108112	Computer Programming	3	3	–	Level test in computer skills or 110108099
110400101	Engineering Workshop	1	0.5	2	-
110400201	Manual Engineering Drawing	2	1	3	-
110400202	Computer Aided Engineering Drawing	1	-	3	110400201
110400203	Ethics and Communication Skills	3	3	-	111405110

Third: Department Requirements: (97) ninety seven credit hours distributed as follows:

a. Compulsory Courses with total of (82) eighty two credit hours as shown below:-

Course Number	Course Title	Credit Hours	Weekly Hours		Prerequisites
			Lecture	**Practical**	
110101152	Discrete Mathematics	3	3	0	---
110402303	Numerical Analysis	3	3	0	110101203 and 110108112
110403242	Statistics and Probabilities	3	3	0	110101102
110405331	Automatic Control	3	3	0	110101203
110406229	Fundamentals of Electrical Circuits	3	3	0	110101102 and 110102102
110408213	Data Structure	3	2	2	110108112
110408220	Digital Logic	3	3	0	110101102 or 110101152
110408221	Digital Logic Lab	1	0	3	110408220
110408300	Algorithms	3	3	0	110408213 and 110101152
110408303	Fundamentals of Communications	3	3	0	110403242 and 110409322
110408326	Digital Integrated Circuits and Embedded Systems Lab	1	0	3	110408362 -Parallel
110408327	Digital Electronics and Integrated Circuits	3	3	0	110409240 and 110408220
110408332	Assembly Language and Microprocessor Systems	3	3	0	110409240 and 110408220
110408333	Microprocessors Lab	1	0	3	110408332 and 110408221
110408340	Computer Organization	3	3	0	110408332
110408362	Embedded Systems	3	2	2	110408332 and 110408327
110408423	VLSI Design	3	2	2	110408327
110408442	Computer Maintenance Lab	1	0	3	110409240 and 110408340
110408443	Computer Architecture	3	3	0	110408340
110408450	Computer Networks	3	3	0	110408303
110408454	Computer Networking Lab	1	0	3	110408450
110408455	Operating Systems	3	2	2	110408340
110408456	Computer Security	3	3	0	110408450 and 110408300
110408457	Wireless Networks	3	2	2	110408450

Course Number	Course Title	Credit Hours	Lecture	Practical	Prerequisites
110408480	Practical Training	0	–	–	Completing at least (112) credit hour successfully (including 110400203 and excluding remedial courses)
110408591	Graduation Project (1)	1	–	3	Completing at least (120) credit hour successfully (excluding remedial courses)
110408592	Graduation Project (2)	2	–	6	110408591
110409240	Electronics (1)	3	3	0	110406229 or 110409201
110409260	Fundamentals of Electrical Circuits Lab	1	0	3	110102103 and (110409203 or (110406229
110409322	Signals and Systems	3	3	0	110406260 or (11101152 and (110101203
110409326	Applied Electromagnetics	3	3	0	110101201 and 110102102
110409341	Electronics (2)	3	3	0	110409240
110409342	Electronics Lab	1	0	3	110409300 and (110409341 or (110406320
111002240	Introduction to Database Systems	3	3	0	111001250 or 110408213

b. Elective Courses with total of (15) fifteen credit hours as shown below:-

Course Number	Course Title	Credit Hours	Weekly Hours		Prerequisites
			Lecture	Practical	
110408510	Systems Programming	3	0	3	110408213 and 110408332
110408520	Analog Integrated Circuits	3	0	3	110408327
110408522	Digital System Design	3	0	3	110408327
110408530	Microprocessors Based Systems	3	0	3	110408332
110408553	Wireless Networks Security and Protocols	3	0	3	110408457 and 110408456
110408557	Internet Protocols	3	0	3	110408450
110408560	Networks Modeling and Simulation	3	0	3	110408450
110408561	Information Systems and Network Infrastructure Protection	3	0	3	110408456
110408565	Real-Time Systems	3	0	3	110408455 and 110408362

110408572	Cryptographic Systems	3	0	3	110408456
110408573	Networks and Internet Security	3	2	2	110408456
110408576	Design of Testability	3	0	3	110408327
110408577	VLSI Systems	3	0	3	110408423
110408578	Implementation of Digital Signals Processing Systems	3	0	3	110409322 and 110408327
110408593	Special Topics in Computer Engineering	3	0	3	Department consent

Fourth: Free Courses:

Three (3) credit hours selected by the student from the courses offered by the university colleges (e.g. Principles of Mathematics 110108102).

Fifth: Practical Training:

Passing the practical training is a requirement to get the Bachelor Degree in Computer Engineering Department, where the period of the training is 8 continues weeks either inside or outside Jordan and with a total of (40) working hours. The students are provided with good training opportunities in both governmental and private institutions and companies given the approval of the department.

- Must Complete at least (112) credit hour successfully (including 110400203 and excluding remedial courses)