

University of Diyala

جامعة ديالى



First Cycle – Bachelor's degree (B.Sc.) – Computer Engineering

بكالوريوس – هندسة الحاسوب



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1. **Mission & Vision Statement**

Vision Statement

The computer engineering department is a "distinct" model for the production and development of engineering and technological knowledge to prepare qualified engineering cadres capable of supporting and developing society in the fields of computing, information technology, and software.

Mission Statement

Develop the engineering cadres by providing them with modern technological knowledge in various branches of computer engineering sciences to enable them to carry out the various engineering projects efficiently and professionally with high accuracy and perfection as required by the labor market and to continue scientific and academic progress by keeping abreast of the accelerating global developments.

2. **Program Specification**

Programmed code:	BSc-CPE	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

The program typically provides students with a solid foundation in computer engineering. This program aims to prepare students for careers in a variety of fields, including hardware design, software engineering, embedded systems, and computer networking.

Level 1 exposes students to the fundamentals of electrical circuits, logic systems, programming, mathematics, electronic physics, and engineering drawing. The program also typically includes general education courses in areas such as English, and human rights.

This program provides students with a well-rounded education that prepares them for leadership positions in various fields and industries.

3. **Program Objectives**

1. Developing specialized engineering programs that conform to international quality standards in the field of computer engineering, through which they can provide engineering cadres able to prove their worth in the field of work.
2. Developing the abilities and skills of the teaching staff and the staff to improve the educational and research realities in the department.
3. Serving the local and international community through the development of applied and academic research to solve various problems in the industrial and engineering fields.
4. To provide an advanced learning and research environment suitable for the students and teaching staff and to produce high-quality educational and engineering leaders.

4. Student Learning Outcomes

The BSc. program in Computer Engineering aims to prepare students to become competent and ethical professionals who can contribute to the development of computer systems and software applications for various engineering fields and industries. Through the program, students should be able to acquire the following learning outcomes:

Outcome 1

Identification of Complex Relationships

Graduates will be able to illustrate the structure and function of computer components and explain how they interact with each other.

Outcome 2

Oral and Written Communication

Graduates should be able to communicate their ideas effectively in both oral and written forms. They should be able to prepare technical reports, give presentations, and communicate effectively with their colleagues.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4

Scientific Knowledge

Graduates will acquire knowledge of basic computer engineering concepts. They should be able to analyze and design digital circuits and computer systems. They should be able to write and debug software programs at different levels ranging from low-level machine code to high-level application code.

Outcome 5

Data Analyses

Graduates should be able to analyze and solve engineering problems related to computer systems and software development.

Outcome 6

Critical Thinking

Graduates should be able to apply their knowledge of computer engineering, mathematics, and science to solve problems in different engineering fields.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Diyala University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs. student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Cumulative Grade Point Average (CGPA)

- The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$CGPA = [(1^{st} \text{ module score} \times ECTS) + (2^{nd} \text{ module score} \times ECTS) +] / 240$$

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
E 101	Mathematics I	78	72	6	B	
CPE 101	Fundamentals of Programming	94	81	7	C	
CPE 103	Fundamentals of Electrical Circuits 1	79	71	6	C	
CPE 105	Principles of Logic Systems	63	87	6	C	
CPE 107	Engineering Drawing Using AutoCAD	48	27	3	B	
U 104	English Language	33	17	2	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
E 102	Mathematics II	78	72	6	B	E 101
CPE 102	Computer Programming	94	56	6	C	CPE 101
CPE 104	Fundamentals of Electrical Circuits II	79	71	6	C	CPE 103
CPE 106	Digital Logic Circuits Design	79	71	6	C	CPE 105
CPE 108	Electronic Physics	48	52	4	C	
U 101	Human Rights and Democracy	33	17	2	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CPE 201	Applied Mathematics I	48	52	4	B	E 102
CPE 203	Analogue Electronics	48	77	5	C	CPE 108
CPE 204	Digital Electronics	78	47	5	C	CPE 106
CPE 205	Data Structures and Algorithms	78	72	6	C	CPE 102
CPE 206	Software Engineering	63	87	6	C	
UD0x	English Language II	33	17	2	B	UD01
UD0x	Extinct Ba'ath Party Crimes	33	17	2	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CPE 202	Applied Mathematics II	48	52	4	B	CPE 201
CPE 207	Computer Architecture	48	77	5	C	CPE 106
CPE 208	Object Oriented Programming	63	62	5	C	CPE 102
CPE 209	Database Systems	63	62	5	C	
CPE 210	Microprocessor	78	47	5	C	
CPE 211	Data Communications	48	52	4	C	
UD0x	Arabic Language II	33	17	2	B	UD02

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CPE 301	Engineering Analysis	48	77	5	C	CPE 202
CPE 303	Signals and Systems	48	77	5	C	
CPE 305	Digital System Design	78	47	5	C	CPE 204
CPE 306	Control Theory	78	47	5	C	CPE 202
CPE 307	Statistics and Probability	48	77	5	C	
CPE 308	Operating Systems	48	77	5	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CPE 302	Numerical Analysis	48	77	5	C	
CPE 304	Digital Signal Processing	48	77	5	C	CPE 303
CPE 309	Data Communication and Networking	78	47	5	C	
CPE 310	Web Design	63	62	5	C	
CPE 311	Artificial Intelligence	48	77	5	C	
CPE 312	Digital Image Processing	78	47	5	C	CPE 303

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