

University of Baghdad جامعة بغداد



First Cycle – Bachelor's degree (B.Sc.) – Computer Science
بكالوريوس علوم - علوم الحاسوب



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1. Mission & Vision Statement

Vision Statement

Computer Science is the study of computers and computational systems. Unlike electrical and computer engineers, computer scientists deal mostly with software and software systems; this includes their theory, design, development, and application.

Staff of the Sciences Division at Baghdad University believe that students come to understand the discipline of Computers through a combination of course work, laboratory experiences, research, and fieldwork. The combination of instructional methods leads students to a balanced understanding of the scientific methods used to make observations, develop insights and create theories about the living programming languages and soft wares.

Mission Statement

Computer science is the study of how information is stored, presented and made use of by computing devices. It involves both theory, such as exploring the nature of computation, and practice, such as applying theory to building hardware and computer systems with intensive tuition in diverse Computer Languages wide world.

2. Program Specification

Program code:	CSC	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

The most important aspect of computer science is problem solving, an essential skill for life. Students study the design, development and analysis of software and hardware used to solve problems in a variety of business, scientific and social contexts. the most important aspect of computer science is problem solving, an essential skill for life. Students study the design, development and analysis of software and fundamentals of the hardware used to solve problems in a variety of business, scientific and social contexts.

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Level 1 students will be introduced to the fundamentals of Computer Science, gaining a comprehensive understanding of key concepts and principles. They will also develop essential academic skills through the Introduction to Academic Work module, enabling them to excel in their studies.

Mathematics will provide a solid foundation in mathematical principles and problem-solving techniques. Moreover, students will learn the fundamentals of object-oriented programming with C++ explore data structures and the Class Library, enhancing their programming skills.

At Levels 2, modules feature a practical focus on IT Service Management through a project-based approach. Theoretical Computer Science and Mathematical Logic provide a foundation in fundamental concepts. Introduction to Programming with Python equips students with essential programming skills. Software Quality Assurance emphasizes ensuring software reliability and performance. Specification covers techniques for documenting software requirements.

At level 3, Current Topics in Computer Science, where students explore and discuss emerging trends and advancements in the field. Introduction to Data Protection and IT Security introduces the principles of safeguarding data and securing IT systems. Database Modeling and Database Systems, providing students with a solid understanding of data modeling and database management. Also enhance the knowledge of Computer Networks and Distributed Systems, students explore the principles and protocols behind network communication. Algorithms, Data Structures, and Programming Languages delve into advanced programming concepts.

At level 4, students explore and discuss emerging trends and advancements in the field. Introduction to AI, Data Mining, Data Protection and IT Security introduces the principles of safeguarding data and securing IT systems. Cryptography focuses on encryption techniques and protocols for secure communication

3. **Student Learning Outcomes and Career**

Whether you choose to work in the public sector or the private sector, or be self-employed, your BSc in Computer Science will open up multiple paths to a successful professional future. Once you've completed your BSc Computer Science degree, you could work as:

- **project manager:** One of the most important success factors in the introduction of software. You work at the interface between the customer and the company developing the software. In addition, you ensure that the exchange between the different departments in the work process works. In this context, you take on the role of the responsible project manager, who ensures that everything runs smoothly.
- **Business Analyst:** Holding a Bachelor of Computer Science, you take care of business processes and are responsible for requirements management. This means that you analyze and priorities all process and system requirements that have to be fulfilled in order to offer economic solutions from a company and customer perspective and identify existing problems and develop concepts and IT guidelines to solve them.
- **Software Developer:** design and develop software - from individual components to complete applications. In coordination with different departments, you program solutions that are tailored to specific requirements and user needs. always keep an eye on the economic framework conditions and make sure that they are adhered to.
- **Computer Office management:** A professional who is single handle able to control all office functions requirements of any firm. overview of computer fundamentals and knowledge of internet and email usage with database and C Language skills with the use of peripherals like printer, scanner etc...

4. **Credits, Grading and GPA**

Credits

Baghdad University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is about 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)

1. 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:

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

5. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC1101	Programming Fundamentals I	79	71	6.00	C	
CSC1102	Computer Organization	64	86	6.00	C	
CSC1103	Introduction to Computer Science	33	117	6.00	C	
CSC1104	Calculus	48	102	6.00	B	
CSC1105	Scientific Writing Skills	64	36	4.00	B	
UOB1106	English Language I	33	17	2.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC1217	Programming Fundamentals II	79	71	6.00	C	Programming Fundamentals I
CSC1208	Discrete Structures	48	102	6.00	C	
CSC1209	Digital Logic	79	71	6.00	C	
CSC12010	Probability and Statistics	33	67	4.00	B	
CSC12111	System Software	48	102	6.00	C	Programming Fundamentals I + computer organization
UOB12012	Human Rights and Democracy	33	17	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC23113	Data Structures	64	86	6.00	C	
CSC23114	Object Oriented Programming	79	71	6.00	C	
CSC23115	Microprocessors	64	61	5.00	C	Computer organization+ Digital Logic
CSC23116	Computation Theory	33	92	5.00	C	Discrete Structures
CSC23117	Visual Programming	64	86	6.00	C	
UOB23118	English Language II	33	17	2.00	B	English Language I

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC24119	Algorithms Design and Analysis	64	86	6.00	C	Data Structures
CSC24020	Introduction to Python	64	61	5.00	E	
CSC24121	Computer Architecture	33	117	6.00	C	Microprocessors
CSC24122	Numerical Methods	79	46	5.00	C	Calculus
CSC24023	Web Design	64	86	6.00	C	
UOB24024	Arabic Language	33	17	2.00	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC35125	Mobile Applications Development	64	86	6.00	E	
CSC35026	Computer Networks	79	71	6.00	C	
CSC35027	Cryptography	64	86	6.00	C	
CSC35128	Web Applications Development	64	86	6.00	E	Web Design
CSC35029	Software Engineering	33	67	4.00	E	
UOB35130	English Language III	33	17	2.00	B	English Language II

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC36131	Artificial Intelligence	64	86	6.00	C	Data Structures
CSC36132	Computer Graphics	79	71	6.00	C	Data Structures
CSC36133	Compilers	64	86	6.00	E	Computation Theory
CSC36134	Introduction to Databases	64	86	6.00	C	Data Structures
CSC36135	Cybersecurity	33	92	5.00	C	Computer Networks
UOB36036	Research Methodology	18	7	1.00	B	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC47037	Digital Image Processing	64	61	5.00	E	
CSC47138	Relational Databases	64	86	6.00	C	Introduction to Databases
CSC47139	Introduction to Robotics	33	92	5.00	E	Artificial Intelligence
CSC47040	Operating Systems	79	71	6.00	C	Computer Architecture
CSC47041	Graduation project	62	88	6.00	C	
UOB47142	English Language IV	33	17	2.00	B	English Language III

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSC48043	Data Mining	64	86	6.00	E	
CSC48144	Web Security	33	117	6.00	E	Web Applications Development
CSC48045	Introduction To IoT	64	86	6.00	E	
CSC48146	Multimedia	64	86	6.00	E	Digital Image Processing
CSC48047	Graduation project	92	58	6.00	C	

6. Contact

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