



**وزارة التعليم العالي والبحث العلمي**  
**جامعة الانبار**  
**كلية علوم الحاسوب وتكنولوجيا المعلومات**

**قسم علوم الحاسوب**

**نظام بولونيا**

**Program Catalogue**

# University of Anbar



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

بكالوريوس – علوم حاسبات



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### 1. **Mission & Vision Statement**

#### *Vision Statement*

The depart of computer science seeks to achieve a prominent position among the relevant departments in Iraqi universities by providing and updating modern distinguished programs that focus on the requirements of the labor market and technological development.

#### *Mission Statement*

The department's mission is summarized in preparing, qualifying, and supplying the IT job market with distinguished graduates equipped with the knowledge and skills necessary to solve problems, possessing functional intelligence skills and qualifying them to meet the needs of various government institutions and the IT job market, and the ability to conduct scientific and applied research and provide consulting and training services in the areas of the specialized college.

### 2. **Program Specification**

<b>Programme code:</b>	BSc-CS	<b>ECTS</b>	240
<b>Duration:</b>	4 levels, 8 Semesters	<b>Method of Attendance:</b>	Full Time

This program provides a comprehensive educational and practical training in various aspects of computer science. The focus of the program is core concept principles of computer science, including programming languages, data structure, algorithms, computer architecture, and operating system. These foundational topics form the basis for understanding and solving complex computational problems.

Level 1 exposes students to the fundamentals of computing, suitable for progression to the specialized topics in this program. Program-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4.

At Levels 2, 3 and 4 students are free to choose some of their module credits with the provision of a range of modules are selected that reflect the aspects of computer science, through analyzing problems, to stage of providing solutions to ensure the breadth of knowledge expected of a graduate with a computer science degree. This allows students to develop their own wide-ranging interests in computer science. Decisions on what to study are made with input from personal tutors.

The research ethos is developed and fostered from the start through practical, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. At Level 4 all students carry out an independent research project.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

Graduates of the program can pursue careers in software development, data analysis, cybersecurity, artificial intelligence, systems analysis, research, or pursue further education at the postgraduate level.

### **3. Program Goals**

1. Preparing qualified graduates with the ability to carry out computer science work professionally.
2. Maintaining a friendly academic environment that encourages education and scientific research.
3. Preparing students to pursue postgraduate studies and continuing education.
4. Preparing graduates with a high level of ethical behavior and responsibility, and providing leaders in the academic and societal fields.

## **5. Student Learning Outcomes**

Computer science is a field of study that explores the theoretical foundations, practical applications, and technologies related to computers and computing systems. Graduates obtain information on theoretical and practical aspects of computing, including, the study of computers, computational systems, algorithms, programming languages, and various aspects of information technology. The programme of computer science is planned to prepare students for entry into profession computer science programs, information technology careers, research and innovation, graduate studies.

Upon completion of the program, students will be able to:

1. Apply computer knowledge and mathematics appropriate to the educational outcomes of students and their specialization.
2. Analyze a problem, identifying and defining computing requirements appropriate to the solution.
3. Design, implement, and evaluate a computer-based system, process, component, or program to meet required needs.
4. Work effectively in teams to accomplish a common goal.
5. Understand the professional, ethical, legal, security, and societal responsibilities related to computer science and its uses.
6. Communicate effectively with a large group of attendees when presenting any presentation or presenting work related to computer science.
7. Analyze the local and global impact of computing on individuals, organizations, and society.

## **6. Academic Staff**

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## **7. Credits, Grading and GPA**



### **Credits**

University of Anbar 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
<b>Success Group (50 - 100)</b>	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
<b>Fail Group (0 - 49)</b>	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:

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

## **8. Curriculum/Modules**

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

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSDC110	Computer Technology	93	57	6.00	C	None
CSDC111	Programming in C++ I	123	77	8.00	C	None
CSDC112	Logic Design I	93	57	6.00	C	None
CCIT060	Mathematics	93	57	6.00	B	None
UOA003	English I	33	17	2.00	S	None
UOA005	Democracy and Human Rights	33	17	2.00	S	None

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

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSDC120	Microprocessors	93	57	6.00	C	None
CCIT061	Discrete Structures	78	72	6.00	B	None
CSDC121	Programming in C++ II	123	77	8.00	C	CSDC111
CSDC122	Logic Design II	93	57	6.00	C	CSDC112
UOA001	Arabic Language I	33	17	2.00	S	None
CSDC123	Communication Skills	33	17	2.00	C	None

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

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSDC210	Database	108	67	7.00	C	None
CSDC211	Object Oriented Programming	123	77	8.00	C	CSDC121
CSDC212	Data Structures	108	67	7.00	C	CSDC121
CSDC213	Advanced Mathematics	63	37	4.00	C	CCIT060
UOA006	The crimes of the defunct Ba'ath party	33	17	2.00	S	None
UOA002	Arabic Language II	33	17	2.00	S	

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

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
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CSDC220	Computational Theory	78	47	5.00	C	None
CSDC221	Python	108	67	7.00	C	CSDC211
CSDC222	Algorithms	93	57	6.00	C	None
CCIT062	Numerical Analysis	63	37	4.00	B	CSDC213
CCIT063	Computer Networks	93	57	6.00	S	None
UOA004	English Language 2	33	17	2.00	S	None

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

Code	Module	SSW L	USSW L	ECTS	Type	Pre-request
CSDC310	Visual Programming	93	57	6.00	C	CSDC211
CSDC311	Computer Graphics	93	57	6.00	C	None
CSDC312	Computer Architecture	93	57	6.00	C	None
CSDC321	Wireless Networks	93	57	6.00	C	CCIT063
CSDC323	Mobile Applications Programming	93	57	6.00	C	CSDC221

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

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSDC320	Multimedia	108	67	7.00	C	CSDC311
CSDE223	Internet of Things	93	57	6.00	E	CSDC120
CSDC322	Compilers	108	67	7.00	C	None
CSDC313	Software Engineering	93	57	6.00	C	None
UOA019	Research methodology	63	37	4.00	B	None

**Semester 7 | 30 ECTS | 1 ECTS = 25 hrs**

Code	Module	SSWL	USSW	ECTS	Type	Pre-request

			L			
CSDC410	Operating Systems I	93	57	6.00	C	CSDC221
CSDC411	Computer Security 1	93	57	6.00	C	None
CSDC412	Artificial Intelligence	108	42	6.00	C	None
CSDC413	Digital Image Processing	93	57	6.00	C	CSDC213
CSDE414	Game Programming	93	57	6.00	E	None

**Semester 8 | 30 ECTS | 1 ECTS = 25 hrs**

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CSDC420	Operating Systems II	78	47	5.00	C	CSDC410
CSDC421	Computer Security II	78	47	5.00	C	CSDC411
CSDC422	Machine Learning	93	57	6.00	C	CSDC412
CSDC423	Web Development	93	57	6.00	C	CSDC210
UOA020	Project	123	77	8.00	B	None

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