

University of Alshaab

جامعة الشعب



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

بكالوريوس – هندسة ذكاء اصطناعي



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1. **Mission & Vision Statement**

Introduction.

Data science and artificial intelligence is a rapidly expanding applied discipline shaping the world around us and a dramatically growing field of employment. Data science is also the foundation of the technology that supports modern approaches to AI-based products and services. The BSc Data Science and AI program offers deep engagement with data science and artificial intelligence competencies, as well as a critical perspective on ethical data and AI practices. This includes statistical theory, mathematics, data structures, computational methods, machine learning and software engineering.

Vision Statement

Data science and artificial intelligence is a rapidly expanding applied discipline shaping the world around us and a dramatically growing field of employment. Data science is also the foundation of the technology that supports modern approaches to AI-based products and services. The Artificial Intelligence program offers deep engagement with data science and artificial intelligence competencies, as well as a critical perspective on ethical data and artificial intelligence practices. This includes statistical theory, mathematics, data structures, computational methods, machine learning and software engineering.

Vision.

Providing a distinguished, creative, academic research environment capable of preparing qualified Iraqi competencies capable of building and developing solutions and applications using artificial intelligence that meet the needs of the Iraqi, regional, and global labor market.

Mission Statement:

Providing a modern and advanced study program rich in courses that keep pace with developments in data science and native intelligence, to prepare students armed with the science, knowledge, and skills necessary to be creative, distinguished, successful, and able to develop their skills to engage in the labor market.

2. Program Specification.

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

This academic program description provides a concise summary of the most important features of the program and the learning outcomes expected of the student to achieve, demonstrating whether he or she has made the most of the opportunities available. It is accompanied by a description of each course within the program.

- o Educational institution: University of Alshaab.
- o College: College of Engineering and Information Technology.
- o Department: Artificial Intelligence Engineering Department.
- o Academic program name: Artificial Intelligence Engineering.
- o Name of final degree: Bachelor of Science degree in Artificial Intelligence.
- o Academic system: semester system.
- o Program Objectives: After graduation, our students are expected to have the ability to:
 - Successfully apply basic mathematical, scientific, and engineering principles in formulating and solving engineering problems.
 - Work proficiently in one or more of the areas of artificial intelligence, data analytics, as well as artificial intelligence and the Internet of Things.
 - Work effectively and adhere to professional ethics at the work site.
 - Develop their skills and acquire new skills to enhance their practical experience.
- o Learning outcomes, teaching, learning and assessment methods:
 - A- Knowledge and understanding.

- Graduating engineers specialized in the field of study, design and analysis of various artificial intelligence engineering projects.
- Preparing a cadre to supervise the implementation of such projects and works, their operation and maintenance, and quality control and quality control of engineering materials.
- Enabling students to carry out engineering projects in specializations directly related to the academic program specializations.
- Enabling the student to know and understand the methods used in designing artificial intelligence engineering works.
- Enabling the student to know how to examine materials involved in artificial intelligence engineering work.
- Enabling the student to be able to design and conduct experiments, as well as analyze and interpret data related to artificial intelligence engineering work.

B- Subject-specific skills.

- ❖ Discussion and dialogue.
- ❖ Brainstorming by encouraging students to produce a large number of ideas about an issue or problem raised during the lecture.
- ❖ Self-learning through the student educating himself according to his own abilities and cognitive and mental levels, responding to his inclinations and interests in order to achieve the development and integration of his abilities.
- ❖ Cooperative learning by working collectively.
- ❖ Competitive learning by creating an atmosphere of competition among peers.

Teaching and learning methods:

Theoretical lectures - practical lectures - discussion and dialogue - brainstorming - examples and problems related to artificial intelligence engineering work - homework.

Evaluation methods Daily exams, surprise exams, documented exams, semester exams, final exams, oral questions and discussions during lectures, and homework assignments.

C- Thinking skills:

- ✚ Data collection and analysis.
- ✚ Decision making methods.
- ✚ Solve problems related to artificial intelligence engineering design.
- ✚ Cooperative learning.
- ✚ Competitive learning.

- ✚ Leading the group in the field of work.

Teaching and learning methods.

- Utilizing the teaching ability and experience in delivering the scientific material to the student.
- Assigning students to prepare reports on a specific subject, thus motivating students to learn the basic principles of scientific research.
- Assigning students to conduct laboratory experiments on their own after the teacher provides a simple explanation of how to conduct the experiment, thus giving the student the opportunity to deduce and analyze laboratory results.
- Adopting the principle of scientific trips for various engineering projects for students, as these trips contribute to expanding the student's awareness and learning about the field of work.

D- General and transferable skills (other skills related to employability and personal development).

- o Increasing communication between individuals, which contributes to building a learning community.
- o Developing multiple emotional aspects such as curiosity, positive attitude toward learning, social values, independence in learning, and self-confidence.
- o Developing students' skills.
- o Learn to set the right priorities for any problem.
- o Developing respect for time and time in completing and implementing work.
- o Developing the spirit of fair competition among work groups in pursuit of quality work, excellence and diversity in performance.
- o Developing the spirit of creation and creativity. o Develop appreciation for work and assume responsibility and commitment.

3. Program Objectives.

1. Building Students in a scientific and rehabilitation work in the field of Artificial Intelligence engineering techniques and scientific field and its applications in government departments.
2. Rehabilitation of graduates able to work in government departments and the private sector as specialized engineering staff efficiently and effectively.
3. Contribute to provide an advanced level of related activities with the realization of institutions experience and lead to the fulfillment of their need of human resources in order to achieve their success, the evolution and continuation consistency of the Program Educational Objectives with the Mission of the College of engineering.

4. Preparing competent engineers capable of meeting the needs of society in all sectors and all its branches.
5. To develop the cognitive abilities and technological skills required for the number of professional leaders in various engineering disciplines.
6. Provide a distinctive education to contribute to the preparation and arrangement of human cadres of graduates to qualify them scientifically, culturally and professionally to support the public and private sector and mixed.
7. To provide a comprehensive education in intelligence that stresses scientific reasoning and problem solving across the spectrum of disciplines within intelligence.
8. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of Artificial Intelligence engineering.
9. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques
10. To provide thorough training in written and oral Artificial intelligence of scientific information.
11. To enrich students with opportunities for alternative education in the area of Artificial Intelligence engineering through undergraduate research, internships, and study-abroad.

4. Students Learning Outcomes.

Graduates obtain information on the technical aspects of communications and utilize basic knowledge toward realizing broader concepts. The Department offers a Bachelor of Science in Artificial Intelligence engineering. Additionally, the Department offers courses to a large number of students from other departments and supports pre-professional programs. The Artificial Intelligence engineering curriculum and experiences are designed to prepare students, in part, for entry into professional programs, graduate studies, technical careers and education

Outcome 1

Understand and develop systems

Graduates will be able to understand and develop the Artificial Intelligence systems with applying modern techniques.

Outcome 2

Development of skills

Graduates will be able to compete with other engineers for jobs and obtain the required seats in the completion of higher studies.

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 be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 5

Data Analyses

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 6

Critical Thinking

Graduates will be able to use critical-thinking and problem-solving skills to develop projects and publish scientific paper.

5. Academic staffs.

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Credits, Grading and GPA

Credits

University of Alshaab 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)

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:

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

6. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
UREQ101	Democracy & Human Right	33	17	50	2	B	
CREQ103	Computer Programming 1	79	71	150	6	C	
CREQ101	Mathematics I	63	62	125	5	S	
ARIE101	Engineering Drawing	48	52	100	4	S	
ARIE103	Introduction to A I	64	36	100	4	C	
ARIE102	Computer Skills	64	11	75	3	C	
CREQ102	Electrical Circuits	79	71	150	6	S	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	SWL	ECTS	Type	Pre-request
UREQ120	Arabic Language 1	48	2	50	2	B	
UREQ121	English Language 1	48	2	50	2	B	
CREQ205	Computer Programming II	79	96	175	7	C	
CREQ206	Mathematics II	78	97	175	7	S	
CREQ207	Digital Techniques	79	71	150	6	C	
CREQ202	Electrical Circuits	79	71	150	6	S	

7. **Contact**

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