Republic of Iraq
Ministry of Higher Education & Scientific Research
Alayen Iraqi University AUIQ
Engineering College
Department of Artificial Intelligent Engineering

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة العين العراقية
كلية الهندسة
قسم هندسة الذكاء الاصطناعي

Program Catalogue | 2024-2025 | دليل البرنامج الدراسي

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

بكالوريوس – هندسة الذكاء الاصطناعي

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جدول المحتويات

1. Mission & Vision Statement

Vision Statement

The Department of Artificial Intelligence Engineering offers students excellent opportunities to develop advanced technological skills and contribute to innovation and technological advancement in various sectors. The field relies heavily on mathematics and programming and requires a deep understanding of both theoretical foundations and practical applications of artificial intelligence..

Mission Statement

We are the Department of Artificial Intelligence Engineering, committed to advancing research and education in the field of Artificial Intelligence. Our department aims to achieve the following goals**:**

- Academic Excellence: We strive to offer high-quality graduate programs and educational materials in AI-related fields. Our goal is to equip students with the knowledge and skills required to understand and apply advanced AI technologies**.**

- Research and Innovation: We support student and faculty research across various areas of Artificial Intelligence and encourage creative thinking and innovation in diverse applications. We aim to develop novel and impactful solutions that contribute to societal and industrial progress**.**

- Collaboration and Partnerships: We seek to build partnerships with industry and academic institutions to exchange knowledge and develop joint projects. Our goal is to provide students and researchers with the necessary support to achieve professional and academic success**.**

- AI Applications: We are dedicated to developing practical AI applications across a wide range of fields, including healthcare, manufacturing, finance, education, security, and many other domains**.**

We take pride in our academic community and are committed to delivering top-quality education and research in the field of Artificial Intelligence. We invite students and researchers from diverse backgrounds to join the Department of Artificial Intelligence Engineering and contribute to the development of this exciting and dynamic field.

2. Program Specification

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

Artificial Intelligence (AI) engineers use their technical knowledge and analytical skills to create intelligent systems that enhance various aspects of life, including industry, healthcare, education, and beyond. In this Program, you will gain the expertise needed to design, develop, and optimize smart solutions and AI-driven technologies that can transform the future.

The Program prepares graduates to work in a wide range of AI-related domains such as machine learning, data science, robotics, computer vision, and natural language processing. In the core modules during the first two years, you will learn the fundamentals of engineering mathematics, programming, data structures, algorithms, electronics, statistics, and data analysis.

Through elective modules, you will have the opportunity to explore various AI applications, including intelligent decision-making systems, autonomous systems, human-computer interaction, and smart technologies used across different sectors. Advanced AI-focused core modules are introduced in Level 3, paving the way for research-led, specialized modules in Levels 4 and 5.

In addition to the core academic content, the department regularly organizes seminars, workshops, and training programs. Practical internships with tech companies, research labs, and innovation centers during the summer vacation in the final two years further deepen your knowledge and practical understanding of the AI field. Students will also have opportunities to visit technology firms and innovation hubs to gain real-world exposure to intelligent systems and AI tools.

3. Program Objectives

1. To provide a comprehensive education in artificial intelligence that emphasizes scientific reasoning, algorithmic thinking, and problem-solving across the core areas of AI and computer science.

2. To prepare students for a wide range of career paths, including graduate studies, professional training programs, or entry-level positions in AI-related fields such as machine learning, robotics, data science, and intelligent systems.
3. To offer extensive hands-on training in programming, electronics, data analysis, AI model development, and system integration.
4. To ensure students are well-trained in the written and oral communication of technical and scientific concepts related to artificial intelligence.
5. To enrich students with opportunities for alternative learning experiences through undergraduate research projects, industry internships, innovation labs, and international exchange programs.

4. Student Learning Outcomes

Artificial Intelligence Engineering focuses on the design, development, and application of intelligent systems capable of learning, reasoning, and adapting to solve real-world problems. The curriculum is designed to provide students with both theoretical foundations and practical skills in AI. The department offers a Bachelor of Science in Artificial Intelligence Engineering, preparing students for careers in intelligent systems design, machine learning, robotics, and AI-related industries, as well as for graduate studies and research opportunities.

Outcome 1

Understanding of Core AI Concepts

Graduates will be able to explain fundamental principles of artificial intelligence, including machine learning, neural networks, natural language processing, and computer vision, and how these concepts are applied in real-world systems.

Outcome 2

Oral and Written Communication

Graduates will be able to effectively communicate technical concepts and results of AI projects and research through both oral presentations and written documentation.

Outcome 3

Practical Implementation and Experimentation

Graduates will be able to design, implement, and evaluate intelligent systems using modern programming languages, AI frameworks, and computing tools, while adhering to ethical and professional standards.

Outcome 4

Interdisciplinary Knowledge

Graduates will be able to demonstrate an understanding of how AI integrates with other disciplines such as robotics, healthcare, finance, and education, and apply AI techniques to solve interdisciplinary challenges.

Outcome 5

Data Analysis and Modeling

Graduates will be able to collect, preprocess, analyze, and interpret data to develop predictive models and evaluate their performance using appropriate metrics.

Outcome 6

Critical Thinking and Problem Solving

Graduates will be able to apply critical-thinking skills to identify complex problems, formulate AI-based solutions, and optimize algorithms or models based on performance and ethical considerations.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Al-Ayen Iraqi University adopts the **Bologna Process** and uses the **European Credit Transfer System (ECTS)** for measuring student workload and academic progress.

- The **total number of ECTS credits** required to complete the Bachelor's degree in Artificial Intelligence Engineering is **240 ECTS**.
- The Program is structured across **8 semesters**, with **30 ECTS per semester**.
- Each **1 ECTS credit** corresponds to **25 hours** of student workload, which includes both structured learning (lectures, labs, tutorials) and unstructured learning (individual study, assignments, projects).

Grading

Prior to final evaluation, student performance is categorized into two groups: **Pass** and **Fail**. Grades are awarded independently of the failed students**,** ensuring an objective assessment of individual performance. The grading system is typically 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 module score x ECTS) + (2nd module score x ECTS) + ……] / 240

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENG111	Mathematics I	78	47	5.00	B	
DSA1113	Introduction to AI	63	37	4.00	B	
DSA1111	Computer skills	63	37	4.00	B	
ENG112	Engineering Drawing	63	37	4.00	S	
ENG110	Computer Programming I	93	82	7.00	B	
ENG113	Electrical Circuits DC	63	37	4.00	B	
UAID001	Democracy and Human Rights	33	17	2.00	S	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ENG110	Mathematics 2	63	87	6.00	B	
DSA1113	Digital technologies	78	97	7.00	B	
DSA1111	Electric circuit AC	78	72	6.00	C	
ENG111	Computer Programming 2	93	82	7.00	B	
ENG113	English language	33	17	2.00	B	
UAID001	Arabic language	33	17	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
UAID001	Machanics & Robotics I	93	57	6.00	C	
AI0014	Computer networks	63	57	6.00	B	
ENG1244	Digital technologies	78	22	4.00	B	
UAID003	Electronic circuit	63	37	4.00	B	
UAID004	Mathematics II	78	57	4.00	B	
UAID005	Data Algorithms and Structures 1	93	57	4.00	C	
UAID001	English language	33	17	2.00	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
UAID001	Mechanics & Robotics II	93	57	6.00	C	
UAID002	Linear Algebra	93	32	5.00	B	
UAID003	Measurements & Instruments	78	47	5.00	B	
UAID004	Crimes of Defunct Baath Party	33	17	2.00	B	
UAID005	Data Algorithms and Structures 1	93	57	6.00	C	
UAID006	DATA BASE	78	72	6.00	B	

8. Contact

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