

ALayen Iraqi University



جامعة العين العراقية

Bachelor of Artificial Intelligence Engineering

بكالوريوس هندسة الذكاء الاصطناعي



ALAYEN UNIVERSITY
جامعة العين العراقية



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1. Mission & Vision Statement

Vision Statement

Creating a promising and innovative generation in artificial intelligence engineering capable of competing locally and internationally, keeping pace with technological progress, and serving society with an open mind and moral integrity.

Mission Statement

To create innovative graduates in the field of artificial intelligence engineering, with a focus on practical applied research to address local and global challenges, through high-quality academic programs, community engagement, leadership opportunities, and a strong commitment to ethical standards

2. Program Specification

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



Artificial Intelligence (AI) is a dynamic and interdisciplinary field that equips students with the theoretical foundations and practical skills needed to design intelligent systems capable of learning, reasoning, and adapting. The emphasis of the programme is on understanding how machines can perceive their environment, process data, and make decisions — mimicking or enhancing human intelligence. The degree appeals to those interested in computer science, mathematics, and cognitive science, offering both a broad foundation and opportunities for specialization. Students may transfer to related programmes such as Data Science, Robotics, or Computer Vision at the end of the first year.

Level 1 introduces students to the fundamentals of Artificial Intelligence, Computer Science, and Mathematics. Core topics include programming principles, data structures, logic, and introductory machine learning. This stage is designed to build the essential analytical and computational thinking skills required for progression to higher levels within the AI programme. Students are also introduced to problem-solving and algorithmic thinking, aligned with the University and School Mission statements.

At Level 2, students study core AI modules such as algorithms and data analysis, probability and statistics for AI, and intermediate machine learning. These modules prepare students for advanced and research-led topics in Levels 3 and 4. Students begin to explore applications of AI in areas such as natural language processing, intelligent systems, and computer vision. The focus is on understanding how AI models learn from data and how they can be evaluated and optimized.

Levels 3 and 4 At Levels 3 and 4, students have the flexibility to choose from a range of specialized modules that reflect the diversity and complexity of modern AI, such as deep learning, robotics, reinforcement learning, human–AI interaction, and ethical AI. The programme encourages students to develop their own academic and research interests within AI. Personal tutors provide guidance in selecting modules that align with students' career goals and research ambitions. Research and Practical Development

Research and practical skills are developed progressively through laboratory work, coding projects, research seminars, and tutorials. From Level 1, students participate in hands-on programming tasks and team projects that simulate real-world AI development. Optional research or industrial field placements are available in Levels 3 and 4.

At Level 4, students undertake an independent research project, which may involve the development of an AI application, a data-driven analysis project, or a simulation-based study. This capstone project demonstrates the student's ability to apply AI methodologies to solve complex problems.

Academic Support

Academic tutorials are conducted at Levels 1 and 2 with the same personal tutor, providing continuity and academic guidance. Tutorials include workshops on academic writing, presentation, and coding skills, followed by assessed exercises such as reports, code reviews, and oral presentations to practice these skills in an AI context.

International and Industrial Opportunities



Industrial placements and international study opportunities are also available to enhance students' practical experience and global perspective. Individual placements are discussed with academic advisors to ensure alignment with the student's learning outcomes and professional goals.

3. Program Objectives

- PEO1.** Adopt responsible, professional, and ethical engineering techniques in the realm of artificial intelligence.
- PEO2.** Participate in professional development and acquire new skills to pursue flexible career pathways in interdisciplinary engineering fields.
- PEO3.** Participate in community service activities to improve leadership skills.

4. Student Learning Outcomes

Knowledge

- A1** The ability to apply modern knowledge, techniques, skills, and tools effectively.
- A2** The ability to utilize appropriate knowledge in mathematics, science, engineering, and technology.
- A3** The ability to perform standard measurements and tests, as well as analyze, interpret, and apply the results
- A4** The ability to design a system or process that addresses engineering challenges within one's area of expertise.
- A5** The ability to diagnose, analyze, and solve general engineering problems.
- A6** The ability to apply grammatical rules and understand their relevance in engineering sciences.

Skills

- B1** The ability to work collaboratively within a technical team and take on leadership roles.
- B2** The ability to communicate effectively, both verbally and in writing, using diagrams and technical documentation, and to access necessary information sources.
- B3** The ability to engage voluntarily in self-education and pursue lifelong professional development.

Ethics

- C1** The ability to recognize and adhere to professional and ethical responsibilities, respect diversity, and promote inclusivity.
- C2** The ability to evaluate the environmental, economic, and social impacts of engineering solutions at both local and global levels.
- C3** The ability to maintain quality, adhere to deadlines, and commit to continuous improvement.



5. Academic Staff

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6. Credits, Grading and GPA

Credits

(Name) 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)

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:

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

7. Curriculum/Modules**Semester 1 | 30 ECTS | 1 ECTS = 25 hrs**

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
AUI111	English Language	33	17	2.00		
AUI112	Democracy and Human Rights	33	17	2.00		
COE113	Mathematics 1	78	47	5.00		
AIE114	Electrical Circuits	93	57	6.00		
COE115	Engineering Drawing	63	37	4.00		
AIE116	programming 1	93	57	6.00		
AIE117	Computer Introduction	63	62	5.00		

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
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COE121	Workshop Technology	33	17	2.00		
COE122	Physics	78	22	4.00		
COE123	Mathematics 2	78	47	5.00		الرياضيات 1
AIE124	Electronic Circuits	78	47	5.00		دوائر كهربائية
AIE125	Digital Technologies	63	37	4.00		
AIE126	programming 2	93	57	6.00		برمجة 1
AUI127	Arabic language	33	17	2.00		
AIE128	Introduction to AI	48	2	2.00		

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
AIE211	Data Structures 1	93	32	5.00		
COE212	Linear Algebra	78	47	5.00		الرياضيات 2
AIE213	Computer Networks	63	37	4.00		
AIE214	Mechanics 1	93	57	6.00		
AIE215	Databases	78	22	4.00		
AIE216	Electrical Power and Machines	63	37	4.00		
AUI217	Arabic Language	33	17	2.00		

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
AIE221	Data Structures 2	78	47	5.00		هيكل بيانات 1
AUI222	Crimes of the Ba'ath Party	33	17	2.00		
AIE223	Mechanics 2	78	72	6.00		ميكانيك 1
		3	0	0.00		
AIE225	Instruments and Measurements	78	22	4.00		
COE226	Statistics	78	47	5.00		جبر خطي
AUI227	English Language	33	17	2.00		هيكل بيانات 1



Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
AIE311	signals and systems	78	47	5.00		
COE312	Discrete Mathematics	78	47	5.00		احصاء
AIE313	Machine Learning	93	57	6.00		
AIE314	Automatic Control	63	37	4.00		
AIE315	Data Management	78	22	4.00		هيكلية بيانات 2
AUI316	Professional Ethics	33	17	2.00		
AIE317	Computer Architecture	78	22	4.00		

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
AIE321	Project Management	60	40	4.00		
COE322	Engineering Mathematics	78	47	5.00		احصاء
AIE323	Networks and Sensors	78	72	6.00		
AIE324	Signal Processing	78	47	5.00		
AIE325	Deep Learning	108	42	6.00		
AIE326	Cybersecurity	78	22	4.00		

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE411	project 1	60	40	4.00		
AIE412	robotics	63	62	5.00		روبوتكس 2
AIE413	applications AI	48	52	4.00		تعلم الاله
AIE414	big data	93	57	6.00		
AIE415	neural networks	63	62	5.00		رياضيات هندسية
AIE416	Embedded systems	63	37	4.00		
AIE417	Marketing	33	17	2.00		

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
COE421	project 2	60	40	4.00		مشروع 1
AIE422	data mining	93	57	6.00		بك داتا
AIE423	multimedia systems	78	22	4.00		
AIE424	advanced programing	78	47	5.00		
AIE425	IOT	63	62	5.00		
AIE426	HCI	33	42	3.00		تطبيقات في ذكاء الاصناعي
AIE427	quantum computing	33	42	3.00		مشروع 1

8. Contact

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