



جامعة أم القرى
UMM AL-QURA UNIVERSITY



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





Artificial Intelligence Program Handbook 2023





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1. College of Computing

Overview

The UQU College of Computers was established in 1426 A.H. The college includes five academic departments: Computer Engineering and Networking, Computer Science and Artificial Intelligence, Software Engineering, Cybersecurity, and Data Science. All these departments grant bachelor's degree and master's degrees only in Computer Engineering and Networking as well as Computer Science and Artificial Intelligence.

Vision

To establish a hub for learners and scholars to facilitate computing and knowledge technology for community and industry.

Mission

Creation of a conducive environment for quality education and innovative research in computing and informatics promoting a knowledge-based economy, societal needs, and ethical values.

2. Artificial Intelligence Program

Overview

The Kingdom of Saudi Arabia is witnessing growth and development in all aspects of life including the rapidly growing sector of Information and Communication Technology (ICT) including Artificial Intelligence (AI). In the past, the use of Artificial Intelligence (AI) was limited to a few applications such as computer games, but now it has a wide range of applications for businesses, government, medical, and consumer use. For example, AI is used to build expert systems that gather data, process it into valuable information, and make intelligent decisions. To harness the information and build Information-based societies, highly skilled AI specialists are needed. The area of robotics uses AI technology to operate machines that can work in places that are not suitable for humans like mines and underwater. AI is used in health care for surgical procedures. Voice recognition software uses AI to understand human talk and AI is widely used in translation software. Sophisticated computer games employ AI technology to improve various aspects of game-play experiences. This B.Sc. in Artificial Intelligence Program is important to produce highly skilled individuals who will be in high demand as AI technologies and applications become more ubiquitous in the Kingdom of Saudi Arabia.



Mission

Preparing highly qualified scientific cadres in artificial intelligence through innovative education and scientific research, which develop creative and analytical abilities that contribute to the Kingdom's knowledge-based economy and development of society in various sectors.

3. General Information

Program Name	Artificial Intelligence
Specialization symbol	140101
Plan Number	44
Total credit hours for completing the program	185
Total students' number	Female (Alzaher campus): 74, Male (Alabdiah campus): 44
Year	2023

Professional Occupations/Jobs

- AI/ML/CV/DL Engineer/Expert /Specialist
- Solutions Architect
- AI (Software) Developer
- (Big) Data Scientist/Expert/Analyst
- Data Engineer
- (Azure) DevOps/MLOps Engineer
- Cybersecurity AI Specialist



4. Program Goals

- Provide students with the knowledge, skills, and values for building AI-based solutions targeting real-world problems in a variety of fields as AI specialists.
- Enable students to work effectively as AI specialists within a team and apply appropriate practices within a professional, legal, and ethical framework, and the need to contribute positively to society.
- Prepare students for continuous self-learning to enhance their skills and develop new AI-based techniques and methods through research and development in industrial or academic environments.

5. Program Learning Outcomes.

Knowledge and understanding	
K1	Students will be able to demonstrate advanced knowledge and understanding of processes, materials, techniques, conventions, and terminology associated with artificial intelligence.
K2	Students will be able to demonstrate a comprehensive, coherent, knowledge and understanding of the fundamentals and underlying theories, principles, and concepts of mathematics, science, and engineering fundamentals relevant to computing and artificial intelligence.
K3	Students will be able to demonstrate an understanding of research principles and methods.
K4	Students will be able to demonstrate knowledge and understanding of societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to professional computing practice.
Skills	
S1	Students will have the ability to design, implement and evaluate intelligent computer systems that satisfies a given set of requirements to solve real-world problems.
S2	Students will have the ability to adopt and utilize new AI-based techniques by independent self-learning and transfer their knowledge to novel application domains.
S3	Students will have the ability to communicate effectively using a variety of appropriate methods to transfer ideas, knowledge, and skills.
S4	Student will be able to conduct investigations of complex and unpredictable problems using a structured process of inquiry and evidence-based research.

S5	Students will be able to apply appropriate quantitative methods and computer software, to solve problem, interpret the data and draw conclusions
Values	
V1	Students will have the ability to recognize and apply standards of integrity, solidarity, professionalism, and ethical behaviour in various academic, professional and research fields.
V2	Student will be able to plan and manage computing projects with high responsibility and autonomy, and function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
V3	Students will be able to assess own learning and performance autonomously and engage in independent life-long learning

6. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentag e
Institution Requirements	Required	13	32	17.3
	Elective	3	6	3.2
College Requirements	Required	9	32	17.3
	Elective	0	0	0
Program Requirements	Required	29	104	56.2
	Elective	3	11	5.9
Capstone Course/Project		3	9	4.9
Field Experience/ Internship		1	9	4.9
Others		0	0	0
Total		57	185	



7. Program Study Plan

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 1	ELCE1201	English Language 1	R		4	Institution
	QR1101	Holy Quran 1	R		2	Institution
	SE1101	Computational Thinking & Problem Solving	R		3	College
	MTH1105	Calculus 1	R		4	College
	CS1101	Discrete Structures 1	R		4	College
Level 2	ELCE1202	English Language 2	R	ELCE 1201	4	College
	ICC2201	Islamic Culture 1	R		2	Institution
	CS1211	Computer Programming 1	R	SE 1101	3	College
	PHY1110	General Physics 1	R		4	College
	MTH1211	Linear Algebra 1	R	MTH 1105	4	College
Level 3	ELCE1203	English Language 3	R	ELCE 1202	4	Institution
	BA1901	Career Preparation Skills	R		2	Institution
	CS1312	Computer Programming 2	R	CS 1211	3	College
	DS1302	Topics in Computing	R		3	College
	MTH1501	Elementary of Statistics and Probability	R		4	College
Level 4	QR2102	Holy Quran 2	R		2	Institution
	CS3123	Software Documentation and Technical Writing	R		3	Department
	CS2214	Data Structures	R	CS1312	3	Department
	CS2102	Discrete Structures (2)	R	CS1101	3	Department
	AI2123	Information Theory and Inference for Learning	R	MTH1501, CS1312	4	Department
Level 5	ICC2202	Islamic Culture 2	R		2	Institution
	CS2051	Data Management and Visualization	R	CS2214,	4	Department

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
				MTH1501		
	AI2224	Optimization and Constraint Programming	R	MTH1211	4	Department
	CEN2002	Hardware and Software Interface	R	CS1312	4	Department
	CS2315	Algorithm Fundamentals	R	CS2214	3	Department
Level 6	ARS1601	Arabic Editing and Writing	R		2	Institution
	AI2360	Principles and Techniques of Artificial Intelligence	R	CS2315	4	Department
	CS2041	Operating Systems Foundations	R	CEN2002	4	Department
	SE2102	Foundations of Software Engineering	R	CS1312	3	Department
	CS2052	Software Dev. Tools	R	CS1312	2	Department
	ICC3203	Islamic Culture 3	R		2	Institution
Level 7	CEN2003	Computer Networking	R	CS2041	4	Department
	AI3135	Image Processing	R	MTH1211	4	Department
	AI3170	Machine Learning (1)	R	MTH1211	4	Department
	AI3110	AI Ethics	R		3	Department
	xxxxxxx	University Elective 2	E		2	Institution
Level 8	QR3103	Holy Quran 3	R		2	Institution
	AI3284	Natural Language Processing	R	AI2360	4	Department
	AI3271	Machine Learning (2)	R	AI3170	4	Department
	CS2322	Project Management for Computer Scientist	R		2	Department
	AI3285	Computer Vision	R	AI3135	4	Department
Level 9	AI3399	Cooperative Training	R		8	Department
Level 10	QR4104	Holy Quran 4	R		2	Institution
	AI4181	Data Mining	R	AI2360	4	Department
	AI4175	Machine Learning Operations (MLOPs)	R	AI3170, SE2102	4	Department
	AI4196	Graduation Project (1)	R		3	Department

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
	xxxxxxxx	University Elective 3	E		2	Institution
Level 11	AI4297	Graduation Project (2)	R	AI4196	3	Department
	AI4272	Deep Learning	R	AI3271	4	Department
	CS4345	Cloud Computing	R	CEN2003	3	Department
	CS/AI/SECXXXX	Dept. Elective (1)	E		3	Department
	xxxxxxxx	University Elective 4	E		2	Institution
Level 12	ICC4204	Islamic Culture 4	R		2	Institution
	AI4398	Graduation Project (3)	R	AI4297	3	Department
	CS/AI/SECXXXX	Dept. Elective (2)	R		3	Department
	CS/AI/SECXXXX	Dept. Elective (3)	E		4	Department
	AI4373	Reinforcement Learning	E	AI3170	4	Department

** The duration was specified in the "Cooperative Training" course description as 90 workdays, excluding Eid al-Fitr & al-Adha and weekends, which is equivalent to the duration of a quarter and a summer session.*

8. Course Specifications

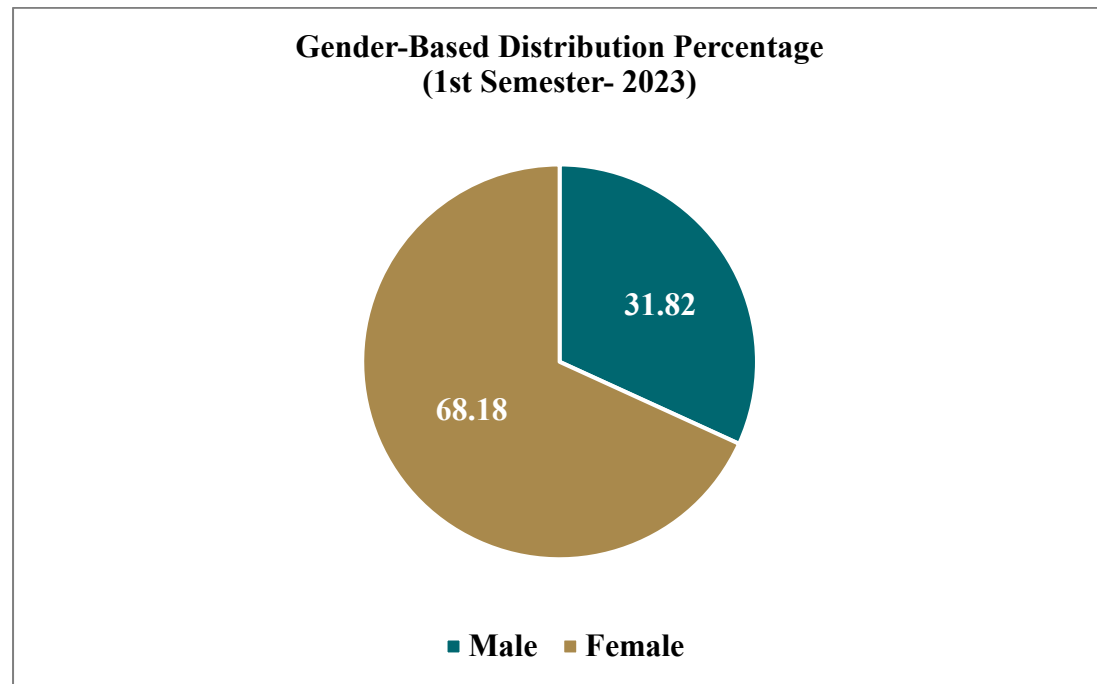
<https://teams.microsoft.com/#/apps/5af6a76b-40fc-4ba1-af29-8f49b08e44fd/sections/7211f19f-262a-42eb-a02e-289956491741>



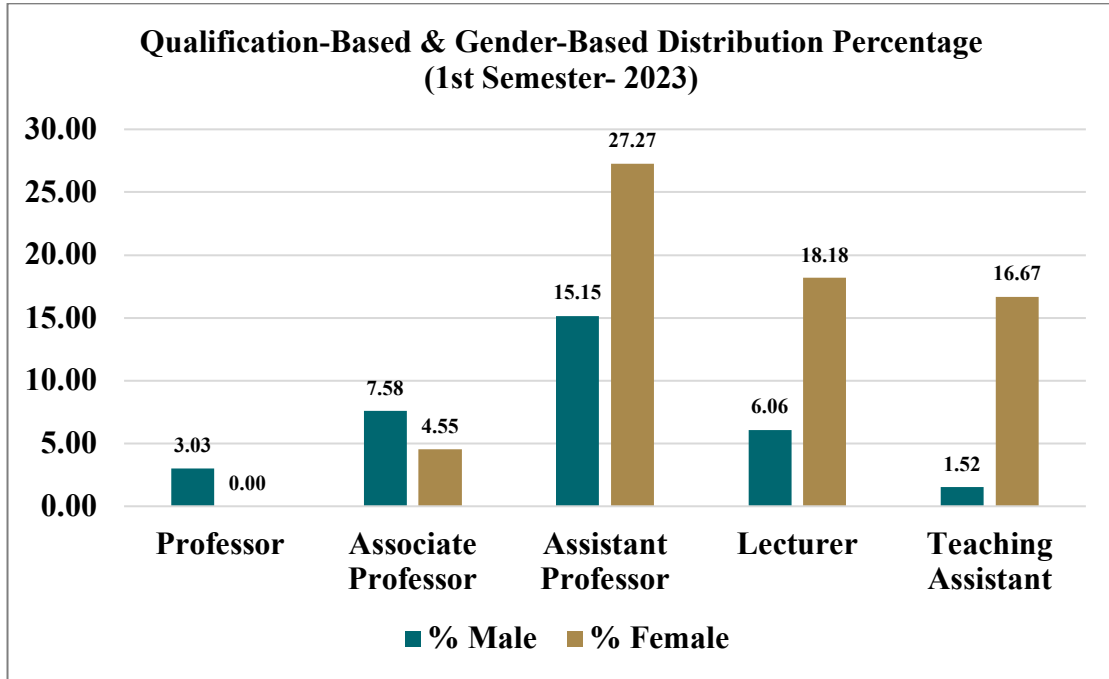
9. Teaching and Administrative Staff

Overview

The program has 66 faculty members in total including 21 males and 45 females. The distribution of faculty members among the qualifications and based on their genders is shown in the following table and charts.



Qualification	Total #	# Male	# Female	Total %	% Male	% Female
Professor	2	2	0	3.03	3.03	0.00
Associate Professor	8	5	3	12.12	7.58	4.55
Assistant Professor	28	10	18	42.42	15.15	27.27
Lecturer	16	4	12	24.24	6.06	18.18
Teaching Assistant	12	1	11	18.18	1.52	16.67



10. List of Faculty Members

No.	Name	Qualification	Email
1	Turki Ali H Alghamdi	Professor	taghamdi@uqu.edu.sa
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61	Randah Alahmadi	Teaching Assistant	raharbi@uqu.edu.sa
62	Hind Alamro	Teaching Assistant	haamro@uqu.edu.sa
63	Rihab Alsudais	Teaching Assistant	rasudais@uqu.edu.sa
64	Munirah Alotaibi	Teaching Assistant	mdotaibi@uqu.edu.sa
65	Elham Baqazi	Teaching Assistant	eabaqazi@uqu.edu.sa
66	Rawan Munshi	Teaching Assistant	rtmunshi@uqu.edu.sa

11. Program Committee and Contact Information

Committee Name	Email
Program Management Committee	
Curriculum and Academic Planning Committee	cis_cs_curriculum@uqu.edu.sa
Quality Assurance Committee	cis_cs_qa@uqu.edu.sa
Scheduling Committee	cis_cs_scheduling@uqu.edu.sa
Examination Committee	cis_cs_girls_exams@uqu.edu.sa
Student Affairs and Guidance Committee	cis_cs_academic@uqu.edu.sa
Graduation Projects Committee	cis_cs_gp@uqu.edu.sa
Postgraduate Studies Committee	cis_cs_postgrad@uqu.edu.sa
Faculty Affairs Committee	
Student Training Committee	cis_cs_st@uqu.edu.sa
Alumni Committee	cis_cs_industrial@uqu.edu.sa
Coordination Committee	
Advisory Committee	



12. Student Guide for Support and Services

• University-Level Support and Services

- Admission FAQs
<https://uqu.edu.sa/dadregis/App/GALLERY/153371?id=215167>
- The university guides.
https://drive.uqu.edu.sa/_/luc/files/دليل%20الطالب%20الجامعي.pdf
- Ghali Centre for disabled.
<https://uqu.edu.sa/studaff/App/FAQ/124146>
- Student Guidance and Counseling Center
<https://uqu.edu.sa/studaff/App/FAQ/124167>
- Department of Student Rights Protection and Disciplinary
<https://uqu.edu.sa/studaff/App/FAQ/124286>
- Student Accommodation
<https://uqu.edu.sa/studaff/App/FAQ/124293>
- Student Transportation Department
<https://uqu.edu.sa/studaff/App/FAQ/124272>
- Regulations for study and examinations
https://drive.uqu.edu.sa/_dadregis/files/44/LDWEJ442C.pdf
- King Abdullah bin Abdul-Aziz Library.
<https://libencore.uqu.edu.sa/iii/encore/?lang=ara>
- Free Microsoft Office package for students
<https://uqu.edu.sa/it/1075>
- University Medical Centre.
<http://umcpp.uqu.edu.sa/umqweb/>

• College-Level Support and Services

- **Local college library**
<https://uqu.edu.sa/cis/Graduationprojects>
- **Guidance and orientation program for new students**
Orientation program takes place at the beginning of every new school year. It includes several activities to introduce new students to the university environment in general and to the college in specific. Welcome-meeting is an example of such activities at which new students get to know the faculty members, administrative staff and college amenities in addition to presentations about university regulations, deanships and departments. A guided tour to discover campus buildings is another activity that new students get invited to attend to familiarize themselves with the campus.



- **Injaz Event**

Injaz aims to present the achievements of the college, exemplified by the graduation projects of its students from diverse departments. The students accentuate their graduation projects through scientific posters, subsequently undergoing evaluation by a specialized committee. The exhibition is accompanied by the “Your Project in 3 Minutes (3MP)” competition, which is adapted from the well-known international competition “3 Minute Thesis (3MT)”. This competition is designed to elevate students' proficiency in delivering clear and concise presentations, motivating them to compete and showcase their ideas in innovative and unconventional ways. The following link shows a report on Injaz Event for 2023 [تقرير معرض إنجاز للعام 2023.pdf \(uqu.edu.sa\)](#)

- **Hackathon**

The college has organized and continues to organize numerous competitions and hackathons, such as the [Smart Makkah Hackathon](#), which brought together university students and faculty members to devise innovative solutions that serve the city of Makkah. To facilitate and streamline engagement in competitions and hackathons, the college has set up a specialized committee called the “Competitions and Internal and External Participations Committee”. This committee plays a pivotal role in supporting students throughout their participation journey, ensuring they receive regular updates on upcoming competitions, hackathons, and relevant opportunities. Moreover, the committee serves as a resource for students by providing guidance on preparing for competitions, offering mentorship, and facilitating access to necessary resources. For more information about participation in competitions and hackathons, please refer to the frequently asked questions at: [الأسئلة الشائعة بخصوص المسابقات - كلية الحاسبات | جامعة أم القرى \(uqu.edu.sa\)](#)

- **College initiatives**

Teach Me Voluntary Initiative:

It is a voluntary initiative among the members of the College of Computer Society to enrich the students' experience. Gestures and acts of generosity and charity through this initiative are purely for Allah's Sake, without any expected reward or possible gain, with no limitation period.



Etqan Initiative:

It is an initiative that aims to provide a training program to prepare students of the University for the requirements of the labor market. The initiative provides a training portfolio with a variety of technical training by continuously providing training programs throughout the week during the academic year. Experts from major technical companies and non-profit governmental and private entities concerned with technology will be sought for cooperation in this endeavor.

Digital Fountains Initiative:

The initiative concerns providing a series of virtual scientific lectures, meetings, and discussions by a constellation of specialists in the technical and informational fields. This initiative aims to spread knowledge among the largest number of beneficiaries, introducing new technologies in the field of computing, taking advantage of the expertise and capabilities from inside and outside the college in serving the community, and contributing to community awareness in a technical and informational manner by organizing specialized seminars and meetings.

‘Communities Like You’ Initiative:

The initiative concerns providing a safe environment for creatures living among us, such as the cats in our universities, and spreading the culture of kindness to animals which is urged by our religion and human nature.

• Department-Level Support and Services

- Academic Advisors play a fundamental role in this regard since they track students’ academic performance and their wellness physically and mentally. In addition, the department secretary for students is responsible for serving students during working days and directing them to the right person to solve any issue they may encounter.
- A list of documents under [Quick Links](#) is very important to familiarize students with every aspect related to attending course classes

Contact

Computer Science and Artificial Intelligence Department

URL Link: https://uqu.edu.sa/cis_cs

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Follow us at X : @UQU_CS



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إعداد
لجنة إدارة برنامج الذكاء الاصطناعي
2023

