جامـــــــــة أم القــــرى

UMM AL-QURA UNIVERSITY

Quality Assurance Guide for College of Computing in HCI

Prepared by:

Quality Assurance Committee

2023-2024

Overview

The College of Computing at Umm Al Qura University is dedicated to creating a learning environment that focuses on students' needs, with the goal of nurturing highly skilled professionals. This dedication is demonstrated through the implementation of innovative academic programs that cover a wide range of subjects including computer science, artificial intelligence, computer engineering, networks, and data science. One particularly noteworthy program offered by the college is the Bachelor of Science in HCI. Students will be prepared for careers in the ever-evolving field of HCI, where they will learn a unique perspective on the impact of digital products and services on daily life.

The Quality Assurance Committee of the HCI is proposing an operational plan to fulfill the mission and goals of the College of Computing and the HCI program. The operational plan is aligned with the College of Computing's strategic plan, the various objectives, and programs.

College of Computing

The College of Computing, founded in 1426 AH, includes five academic departments offering bachelor's and master's degrees. The college is internationally accredited by ABET for academic excellence in the Computer Science & Computer Engineering programs.

Vision

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

Mission

The mission of the College of Computing is to "Creation of a conductive environment for quality education and innovative research in computing and informatics promoting knowledge-based economy, societal needs, and ethical values".

Objectives

1. Provide quality education programs to present competitive students.
2. Produce innovative, world-class scientific research.
3. Produce knowledge through research and development activities.
4. Provide students with ethical and professional skills to keep pace with the labor market.
5. Strengthening the college's role and influence in industry and society.

HCI Program

The Human Computer Interaction Program is a four-year program that aims to graduate specialists who have the necessary knowledge and skills that enable them to provide interactive solutions based on the capabilities and requirements of users using the latest digital technologies with the aim of achieving user satisfaction and enriching the user experience.

Program Mission

The mission of the Human-Computer Interaction (HCI) program is to provide students with high-quality education to fully develop their professional qualities and skills as HCI specialists and contribute to the development of knowledge-based economy and community service, based on our Arabian and Islamic values.

Program Goals

The goals of the Human-Computer Interaction program are to:

1. Provide the public and private sectors with highly competent HCI specialists.
2. Provide graduates who demonstrate professionalism and a sense of societal and ethical responsibility in their endeavors.
3. Provide graduates who continually improve their skills through professional or postgraduate education.
4. Encourage interaction of the students with the community to solve its HCI-related problems.

Relationship between program mission and the University Mission

The mission of the program ties directly with the university mission as the program aims to excel in the education provided to its students aiming to positively contribute to the economy and knowledge society.

Relationship between program objectives and the University Objectives

The program goals align directly with the University's first and second objectives as the program focus on:

1. Providing quality education programs
2. Raising the university's position globally by equipping graduates with the necessary knowledge and skills to compete at a high level internationally.

Graduate Attributes

The following table shows the program graduate attributes:

No.	Code	Attribute	Description
1	PGA1	Comprehensive (in-depth) knowledge and integrate understanding in HCI	Have a broad and integrated structure of knowledge, theories, concepts in computing, a broad understanding of human cognition, and an in-depth understanding of the theories, principles, methodologies, materials, and techniques in the field of HCI
2	PGA2	Creative Application of Knowledge	Utilize research skills to identify and employ HCI methodologies to develop innovative solutions

3	PGA3	Critical Thinking & Problem Solving	Apply logical and critical thinking to solve human computing related problems based on HCI theories, principles, & methodologies
4	PGA4	Technical Skills	Have the ability and proficiency in the design and development of computing technology
5	PGA5	Communication Skills	Have effective communication skills with a wide range of audiences
6	PGA6	Professionalism & Ethics	Recognize & adhere to ethical and professional integrity standards & responsibilities when designing and developing computing technology for human use.
7	PGA7	Leadership & Teamwork	Work independently and within a team to effectively meet goals and provide leadership.
8	PGA8	Life-long learning	Actively acquire and apply new knowledge in various fields, using appropriate learning strategies
9	PGA9	Community service	Effectively participate & contribute in the community to aid in its development and well being

The following table shows the UQU graduate attributes

No.	Code	Attribute
1	IGA1	Acquisition of a comprehensive, coherent, and organized body of knowledge in a particular field of study
2	IGA2	Application of Knowledge
3	IGA3	Critical Thinking and Problem-Solving Skills
4	IGA4	Technical Skills
5	IGA5	Communication Skills
6	IGA6	Islamic Ethics and Values, Integrity, and Professionalism
7	IGA7	Autonomy, Responsibility, and Teamwork
8	IGA8	Self-Study Skills and Life-long learning
9	IGA9	Serve the community and Pilgrims

Program learning Outcomes

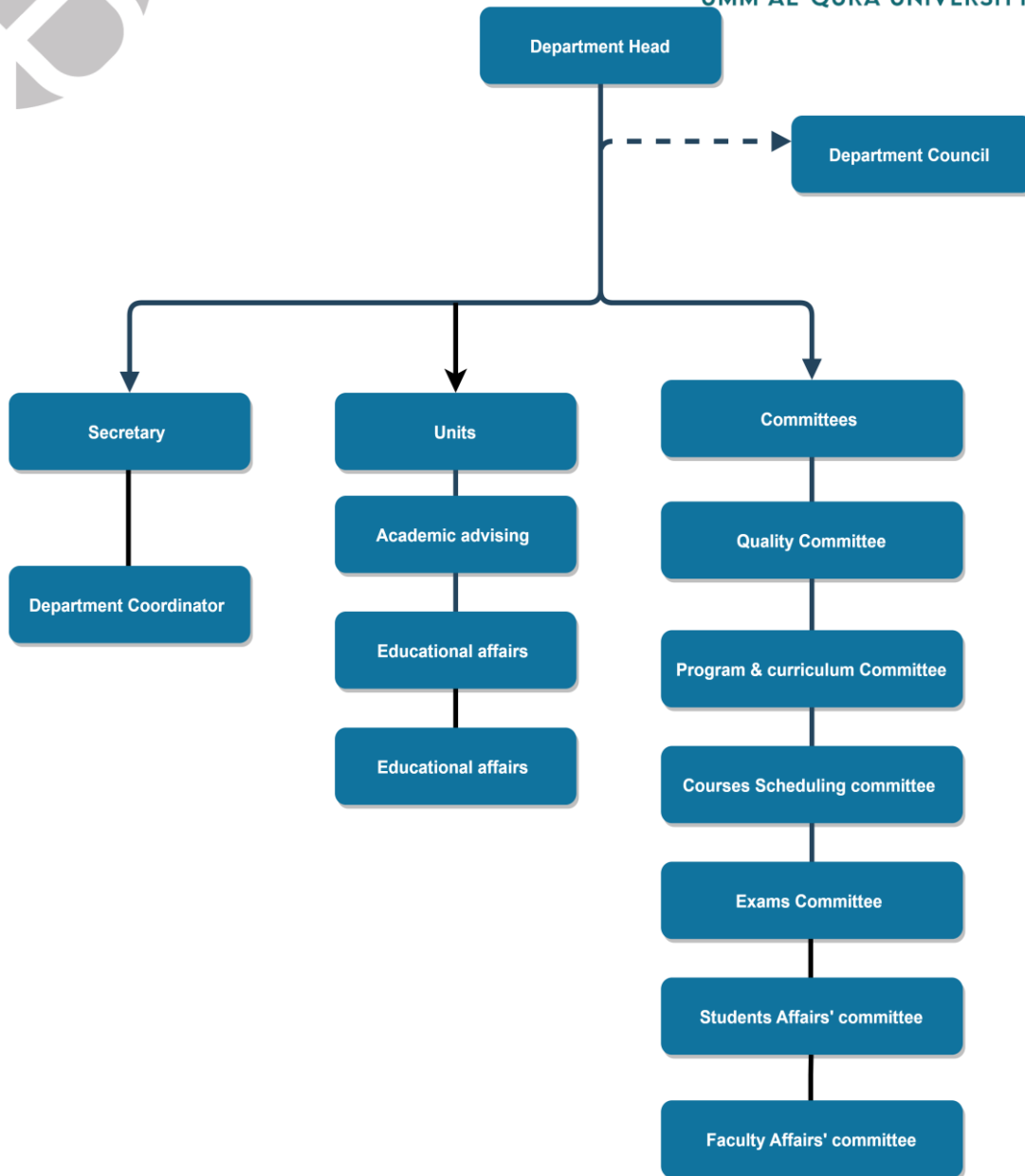| Knowledge and Understanding	
K1	Exhibit general knowledge of computing theories and concepts
K2	Demonstrate broad knowledge & understanding of human cognition and psychology and its relationship to the HCI field
K3	Explain the theoretical & practical aspects of the HCI field
Skills	
S1	Solve problems utilizing HCI theories, tools, and techniques by applying knowledge from related disciplines aiming at universal access & inclusiveness.
S2	Analyze the context of use, stakeholder needs, state-of-the-art interaction opportunities, and envisioned solutions considering user attitude.
S3	Evaluate design of interactive applications by presenting and defending opinions based on valid ideas and sound HCI principles.
S4	Design interactive applications by applying relevant principles, tools, & techniques
S5	Effectively communicate with a wide range of audiences.

Values	
V1	Recognize & adhere to ethical and professional integrity standards & responsibilities when designing and developing computing technology for human use.
V2	Engage in self-learning as a base for lifelong learning of new concepts, techniques and tools relating to the HCI field and its related disciplines
V3	Work independently and within a team to effectively meet goals and provide leadership.
V4	Effectively participate and contribute in the community to aid in its development and well being

Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	11	24	13.3
	Elective	3	6	3.33
College Requirements	Required	11	40	22.22
	Elective	0	0	0
Program Requirements	Required	24	78	43.33
	Elective	4	12	6.66
Capstone Course/Project		3	12	6.66
Field Experience/ Internship		1	8	4.44
Others		0	0	0
Total		57	180	100

Program Structure
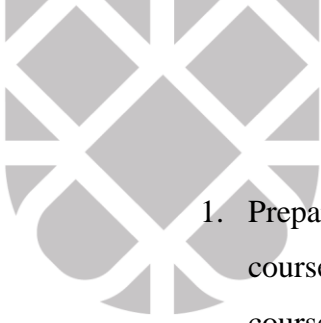
Program structure diagram

Quality Assurance Committee

The Quality Committee in the department takes the following measures at the end of each semester:

1. Preparing an official letter addressed to all coordinators of the program's courses to prepare a file for the relevant course after coordination with all the course providers from both sides (male and female students).

2. Approving the letter mentioned in the previous point from the department head and officially delivering it to the course coordinators.

3. Receiving the files of the coordinators and transferring them to the members of the Quality Committee to analyze their content, monitor the progress of the process of linking the learning outcomes of the course with the learning outcomes of the program, study the mentioned deficiencies, and prepare a special report for that.

4. Holding a meeting of the Quality Committee to discuss and prepare an improvement plan to raise the efficiency of program performance and submit that plan to the department head.

5. Present the plan mentioned in the previous point to the department council members for approval as an improvement plan of action to raise the program quality's efficiency.

6. Receiving and evaluating suggestions from faculty members and the program students to improve the program.

Committee Members

No.	Name	Position
1	Dr. Foziah Gazzawe	Chairman of the Committee
2	Dr. Deena Alghamdi	Member of the Committee
3	Abid Khan	Member of the Committee
4	Mohamed Tounsi	Member of the Committee
5	Turki Alanazi	Member of the Committee

Program Study Plan

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Department)
1st Year						

Level	Code	Course	Type	Prerequisite	Credits	Offered by
Level 1	ELCE 1201	English Language 1	Required		4	Institution
	QR 1101	Holy Quran (1)	Required		2	Institution
	SE 1101	Computational Thinking & Problem Solving	Required		3	College
	MTH 1105	Calculus 1	Required		4	College
	CS 1101	Discrete Structures (1)	Required		4	College
Level 2	ELCE 1202	English Language 2	Required	ELCE 1201	4	College
	ICC 1201	Islamic Culture (1)	Required		2	Institution
	CS 1211	Computer Programming (1)	Required	SE 1101	3	College
	PHY 1110	General Physic (1)	Required		4	College
	MTH 1211	Linear Algebra (1)	Required	MTH 1105	4	College
Level 3	ELCE 1203	English Language 3	Required	ELCE 1202	4	College
	BA1901	Career Preparation Skills	Required		2	Institution
	CS 1312	Computer Programming (2)	Required	CS 1211	3	College
	DS 1302	Topics in Computing	Required		3	College
	MTH1501	Elementary of Statistics and Probability	Required		4	College
			2nd Year			
Level 4	QR 2102	Holy Quran (2)	Required	QR 1101	2	Institution
	PSY 2101	Introduction to Psychology	Required		3	Department
	PSY 2102	Introduction to Human Cognition	Required		3	Department
	HCI 2101	Fundamentals of Human-Computer Interaction	Required		4	Department
	CS 2231	Database Fundamentals	Required	CS 1312	3	Department
Level 5	ICC 2202	Islamic Culture (2)	Required	ICC 1201	2	Institution
	HCI 2202	Foundations of User Experience	Required		3	Department
	CS 3251	Web Development Fundamentals	Required	CS2231	4	Department
	HCI 2203	Visual Design	Required		3	Department
	HCI 2204	User Research	Required	HCI 2101	3	Department
Level 6	ARS1601	Arabic Writing and Editing	Required		2	Institution
	HCI 2304	User Interface Design	Required	HCI 2203	4	Department
	SE 2102	Foundations of Software Engineering	Required	CS 1312	3	Department
	HCI 2305	Information Architecture	Required	HCI 2202	3	Department
	HCI 2306	Ethics for the Information Age	Required		3	Department
			3rd Year			
Level 7	HCI 3104	Design Systems	Required	HCI 2203	3	Department
	HCI 3105	Project Management	Required		3	Department
	HCI 3106	Inclusive Design	Required	HCI 2202	3	Department

Level	Course Code	Course Title	Type	Pre-Requisite	Credit	Requirement
	HCI 3107	Persuasion Techniques	Required	HCI 2304	3	Department
	HCI 3108	Prototyping Methods	Required	HCI 2304	3	Department
	QR 3103	Holy Quran (3)	Required	QR 2102	2	Institution
Level 8		University Elective (1)	Elective		2	Institution
	ICC 3203	Islamic Culture (3)	Required	ICC 2202	2	Institution
	HCI 3209	Usability Evaluation	Require	HCI 3108	4	Department
	HCI 3210	Designing Mobile Interfaces	Required	HCI 2304	4	Department
	HCI 3211	Voice User Interfaces	Required	HCI 3108	3	Department
Level 9	HCI 3333	Cooperative Training	Required		8	Department
4th Year						
Level 10	QR 4104	Holy Quran (4)	Required	QR 3103	2	Institution
	HCI 4109	Web Development Frameworks	Required	CS 3251	4	Department
	HCI 4110	Graduation Project (1)	Required	HCI 3105 HCI 3209	4	Department
		University Elective (2)	Elective		2	Institution
		Specialization Elective (1)	Elective		3	Department
Level 11	HCI 4211	User Experience for Extended Reality	Required		3	Department
	HCI 4212	Data Visualization Design	Required	HCI 2203 CS 2231	3	Department
	HCI 4213	Graduation Project (2)	Required	HCI 4110	4	Department
	ICC 4204	Islamic Culture (4)	Required	ICC 3203	2	Institution
		Specialization Elective (2)	Elective		3	Department
Level 12		University Elective (3)	Elective		2	Institution
	HCI 4314	Portfolio Development	Required		3	Department
	HCI 4315	Graduation Project (3)	Required	HCI 4213	4	Department
		Specialization Elective (3)	Elective		3	Department
		Specialization Elective (4)	Elective		3	Department

Elective Courses

#	Course Code	Course Title	Credit Hours	Pre-Requisite Courses	Type of requirements (Institution, College, or Department)
1	HCI 4011	Computer Game Design	3	HCI 3107	Department
2	CS 4051	Mobile Applications	3	CS 2231 CS 3251 HCI 2304	Department
3	HCI 4013	Service Design	3	HCI 2304	Department
4	HCI 4014	Wearable Technologies	3		Department
5	HCI 4015	Human-Robot Interaction	3		Department

6	HCI 4016	Search Engine Optimization and User Experience	3	HCI 2202	Department
7	HCI 4017	Advanced Topics in Human-Computer Interaction	3		Department

Forms

All NCAAA files are accessible on the Deanship of Development and Quality section of the College of Computers web page ([click here](#)) , for further reference.