SULTAN QABOOS UNIVERSITY
COLLEGE OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
BACHELOR OF SCIENCE IN COMPUTER SCIENCE
COURSE OUTLINE

I. COURSE INFORMATION			
COURSE CODE	COMP4100		
COURSE TITLE	ETHICS AND SKILLS FOR COMPUTING PROFESSIONALS		
OMAN QUALIFICATION FRAMEWORK (OQF) LEVEL	**7**		
CREDIT HOURS	2		
CONTACT HOURS	3		
PRE-REQUISITES	COMP3401		
CO-REQUISITES			
EQUIVALENT COURSES			
INCOMPATIBLE COURSES			
COURSE CATEGORY	☐ University Requirement	☐ University Elective	
	☐College Requirement	☐ College Elective	
	☒ Department Requirement	☐ Department Elective	
	☐ Specialization Requirement	☐ Specialization Elective	
	☐ Other (specify):		
COURSE OWNER	College: Science	Department: Computer Science	
	Center:	Unit:	
DELIVERY MODE	☒ Face to Face	☐ Blended	☐ Online
COURSE TYPE	☐ Lecture	☐ Lecture/Lab	
	☐ Lecture/Seminar	☐ Lecture/Studio	
	☒ Lecture/Tutorial	☐ Lecture/Lab/Tutorial or Seminar	
	☐Tutorial	☐ Laboratory (Practical)	
	☐ Field or Work Placement	☐ Studio	
	☐Seminar	☐ Internship	
	☐ Workshop	☐ Project	
	☐ Thesis	☐ Other (specify):	
LANGUAGE OF INSTRUCTION	English		
COURSE DESCRIPTION	This course has two parts. The first part provides theoretical backgrounds about the social, ethical, legal, technical and professional issues encountered in the information age including the historical and social context, intellectual property, computer crimes, risks and liabilities, and professional responsibilities. The second part of this course provides students with the technical communication skills and research methodologies. It aims to help students learning how to read, analyze, write and present technical documents related computer science.		

TEACHING AND LEARNING STRATEGIES	☐ Augmented Reality	☐ Flipped Classroom	
	☒ Blended Learning	☐ Problem-Based Learning	
	☒ Discovery-Based Learning	☐ Project-Based Learning	
	☒ Student-Led Learning	☐ Team-Based Learning	
	☐ Work-Based Learning	☐ Other (specify):	
ASSESSMENT COMPONENT AND WEIGHT	☐In-term examination(s) (30%)	☐ Quizzes (%)	☐Other (specify): (%)
	☒ Homework assignments (5%)	☒Project (25 %)	
	☒ Final examination (40 %)	☐ Practical/ Lab (%)	
TEXTBOOKS AND EDUCATIONAL MATERIAL	1. Ethical and Social Issues in the Information Age Springer London 2013 5th Joseph Migga Kizza (Available from the SQU Main Library as an e-book. Main chapters to be covered are posted on the course Moodle site.) 2. Ethics for the Information Age (7th Edition); Michael J. Quinn, Pearson 2016-02-21		
GRADING METHOD	☒ A-F Scale	☐ Pass/Not Pass	☐ Other (specify):

GRADING METHOD DESCRIPTION

A-F GRADING SCALE:

Range	Letter Grade	Description
90 – 100	A	**Exceptional performance:** All course objectives achieved and met in a consistently outstanding manner.
86 – 89.9	A-	
81– 85.9	B+	**Very Good Performance:** The majority of the course objectives achieved (majority being at least two-thirds) and met in a consistently thorough manner.
77 – 80.9	B	
73 – 76.9	B-	
68 – 72.9	C+	**Satisfactory Performance:** At least most of course objectives have been achieved and met satisfactorily.
64 – 67.9	C	
60 – 63.9	C-	
55 – 59.9	D+	**Minimally Acceptable Performance:** The course objectives met at a minimally acceptable level.
50 – 54.9	D	
0 – 49.9	F	**Unacceptable performance:** The course objectives not met at a minimally acceptable level.

PASS/NOT PASS:	
OTHER:	

II. SEMESTER INFORMATION

SEMESTER/YEAR	Spring 25	**SECTION(S)**	1
DAY AND TIME	SUN/THU	**VENUE(S)**	Lab 18
COURSE COORDINATOR	Youcef Baghdadi	**COURSE TEAM**	
COORDINATOR OFFICE	DCS/0023	**OFFICE HOURS**	THU: 9:00-10:00
COORDINATOR EXTENSION	1492	**COORDINATOR EMAIL**	ybaghdadi@squ.edu.om

III. ALIGNMENT OF COURSE LEARNING OUTCOMES (CLO), PROGRAM LEARNING OUTCOMES (PLO), GRADUATE ATTRIBUTES (GA), AND OMAN QUALIFICATION FRAMEWORK (OQF) CHARACTERISTICS			
CLO	**PLO / SO**		**OQF Characteristics**
		SO1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. SO2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. SO3. Communicate effectively in a variety of professional contexts. SO4. Recognize professional responsibilities and make	

		informed judgments in computing practice based on legal and ethical principles. SO5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline. SO6. Apply computer science theory and software development fundamentals to produce computing-based solutions. **SQU Graduate Attributes**	
1. Identify the major ethical issues in computing professions.	**SO1**	**A, B**	**1, 2**
2. Understand the intellectual property rights.	**SO1**	**A, E**	**1, 2**
3. Describe trends in computer crimes and different cyber attacker approaches.	**SO1**	**A, B**	**1, 2**
4. Discuss the ethical and legal issues related to software ownership and protection.	**SO1**	**A, B**	**1, 2**
5. Understand and apply the different codes of ethics, including professional codes.	**SO4**	**E**	**4**

6. Solve dilemma brought by ethical issues.	**SO1**	**A, B**	**4**
7. Communicate effectively in a variety of professional contexts.	**SO3**	**C**	**3**

IV. COURSE LEARNING OUTCOMES (CLOS) AND ASSESSMENT CRITERIA AND METHODS (FOR EACH CLO)		
CLO1: Identify the major ethical issues in computing professions.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Identify the ethical issues	Assignments, Final, Project
CLO2: Understand the intellectual property.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Distinguish the different types of IP	Midterm, Final
CLO3: Describe trends in computer crimes and different cyber attacker approaches.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Identify the attacker approaches	Midterm, Final
B)	Understand the data security	Midterm, Final
CLO4: Discuss the ethical and legal issues related to software ownership and protection.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Discuss the forms of IP related to software	
CLO5: Understand the different codes of ethics, including professional codes.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Distinguish the different codes of conduct	Assignments, Project
B)	Understand the computing professional code	Assignments, Project

CLO6: .Solve dilemma brought by ethical issues.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Apply a process to solve dilemma	Assignments, Project
B)	Make decision when faced dilemma	Assignments, Project
CLO7: Communicate effectively in a variety of professional contexts.		
ASSESSMENT CRITERIA (TO ACHIEVE THIS OBJECTIVE, THE STUDENT MUST)		**ASSESSMENT METHODS**
A)	Write a report	Assignments, Project
B)	Present a report	Assignments, Project

V. COURSE CONTENT AND SCHEDULE				
WEEK	**LECTURES #**	**TOPICS/ SUBJECTS**	**READINGS/ CHAPTERS**	**REMARKS (e.g., ASSESSMENTS)**
1	Lecture 1	**Introduction:** Development of the Internet and WWW; Definition of moral, ethics, and deontology; emergence of social and ethical problems in computing.	Chapter 1	Midterm & Final
2	Lecture 2	**Ethics Theories:** Workable and unworkable theories: according to Quinn	Handout	Midterm & Final
3	Lecture 3	**Ethical Dilemma** Ethical dilemma & Process to solve ethical dilemma	Chapter 1	Midterm & Final
4	Lecture 4	**Ethics & AI:** Ethical considerations of AI: Bias, Discrimination, Transparency, Accountability, Creativity, Ownership, Ethical Dilemmas	Handout	Midterm & Final
5-6	Lecture 5	**Element of Writing a Scientific Report**	Handout	Project
7	Lecture 6	**Element of Oral Presentation Scientific Report**		
8	Lecture 7	**Codes of Ethics:** Types of codes; Software engineering code of ethics	Chapter 4	Midterm & Final
9		**Project Presentation: Part 1**		Project
10	Lecture 8	**Information Privacy:** Perspectives on Privacy, Information disclosures; Privacy and civil Liberties; Value of privacy; Privacy violations; Privacy protection and civil liberties; Anonymity definition and the Internet;	Chapter 5	Midterm & Final

11	Lecture 9	**IP Rights and Computer Technology:** Protecting IP, Protections for Software, Open-Source Software, Legitimacy of IP, and Property Protection for Software	Chapter 6	Midterm & Final
12	Lecture 10	**Security:** Introduction; Hacking; Malware, Cybercrime and cyber-attacks; Information security	Handout	Final
13	Lecture 11	**Computer Crimes:** Introduction, history of computer crimes, computer systems types of attacks, motives of attacks, costs and social consequences, computer crime prevention strategies	Handout	Final
14		**Project Presentation**		Project
15		**Project Presentation**		Project

VI. ADDITIONAL INFORMATION (e.g., RUBRICS, etc.)

Assessment Plan:

Item	Date out	Due date	Weight
Project Part 1	Week 1	Week 8	5%
Project Presentation (Part 1)	Week 9	Week 9	5%
Midterm	Week 9		30%
Project P2	Week 8	Week 12	5%
Project Presentation	Weeks 14 & 15		10%
Assignments	Week 1 – Week 13		5%
Final Exam TBA	21/05/2025 from 3 PM		40%

Department's Late Submission Policy:

(a) 1-24 hours: 25% of the mark will be deducted.
(b) > 24 hours: Not accepted.

Department's Policy for Dealing with Cheating:

It is essential that each student solves all programming assignments, lab tests and exams individually unless instructed otherwise, e.g., for group projects. Copying, plagiarism, collusion, switching, and falsification are violations of the university academic regulations. Students involved in such acts will be severely penalized. The department has adopted a firm policy on this issue. A zero mark will be assigned the first time a student is caught involved in copying and his/her name will be added to a watch list maintained by the Head of Department. Further repeated involvements in copying will cause the student to get an F grade in that course. This is in line with the university academic regulations.

VII. STUDENTS RESPONSIBILITIES	
It is the student's responsibility to know and comply with all University Academic Regulations relevant to participation in this course. These regulations specifically include attendance requirements and student academic code of conduct.	
ACADEMIC INTEGRITY	The University expects the students to approach their academic endeavors with the highest academic integrity. Please refer to the **Undergraduate Academic Regulations**.
ADD AND DROP	Students who wish to drop or add the course should review the **Undergraduate Academic Regulations**.
ATTENDANCE	Sultan Qaboos University has a clear requirement for students to attend courses, detailed in the **Undergraduate Academic Regulations**.
ASSESSMENT AND GRADING	To ensure the provision of a sound and fair assessment and grading, please review the **Undergraduate Academic Regulations**.
GRADE APPEAL	Students who wish to appeal their grades should review the **Undergraduate Academic Regulations**.
CLASSROOM POLICIES	Students are expected to dress professionally during class time as required by the University. Use of phones or any other electronic devices in the classroom during class time is strictly prohibited. Unauthorized use may lead to faculty member confiscation of the device for the remainder of the class. Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. A student responsible for disruptive behavior may be required to leave the class.
LATE AND MAKE-UP WORK	Students are required to meet the course objectives by submitting coursework no later than the assigned due date. Students may be allowed to submit late work if approved by the course coordinator. Assignments submitted after the due date may be penalized.
MISSED EVALUATIONS	All quizzes, tests, clinical evaluations, and exams must be completed by the date they are assigned. If a quiz, test, or exam is missed due to a documented emergency situation (e.g., medical emergency, death in the immediate family), it is the student's responsibility to contact the instructor.
OTHER	

Course Outline Appendix

1. PROGRAM LEARNING OUTCOMES / STUDENT OUTCOMES

SO1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

SO2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

SO3. Communicate effectively in a variety of professional contexts.

SO4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

SO5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

SO6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

2. SQU Graduate Attributes

GRADUATE ATTRIBUTES	GRADUATE COMPETENCIES FOR UNDERGRADUATE STUDIES
A. Cognitive Capabilities: The graduate has sufficient general and specialized theoretical knowledge that enables him/her to deal well with his/her specialty and other related fields.	1. Demonstrates familiarity and works with advanced specialized knowledge in the area of specialization.
	2. Demonstrates a general understanding of the relationship of advanced specialized knowledge with knowledge in other relevant professional fields and aspects.
	3. Demonstrates a comprehensive understanding of the theories, principles, and methods used in his/her specialty, and how to create and apply new knowledge.
	4. Demonstrates general knowledge of the legal environment and necessary relevant regulatory frameworks.
	5. Shows awareness of contemporary literature and research.

B. Skill and Professional Capability: The graduate has sufficient skill and practical experience that enables him/her to perform all tasks related to the specialization and other related fields.	1. Applies concepts, theories, and investigative methods to synthesize and interpret information to evaluate conclusions.
	2. Applies appropriate research methods and techniques and employs digital knowledge
	3. Evaluates and critiques information independently
	4. Uses cognitive and technical skills to analyze complex issues and develop appropriate solutions.
	5. Initiates new ideas or processes in the professional, educational or research context.
C. Effective Communication: The graduate has the ability to communicate effectively with others to achieve the desired results	1. Explains, presents, and adapts information to suit the recipients.
	2. Employs appropriate information and communication technology to collect and analyze information.
D. Autonomy and Leadership: The graduate has the ability to lead, make decisions and take responsibility for decisions.	1. Performs advanced professional activities independently.
	2. Demonstrates leadership skills.
	3. Takes professional responsibility.
	4. Assumes full accountability for the tasks and their output.
E. Responsibility and Commitment: The graduate appreciates the importance of available resources and deals with them effectively and is committed to the ethics of the profession and society.	1. Manages time and other resources assigned to accomplishing tasks effectively and responsibly.
	2. Demonstrates effective practices when working in teams.
	3. Demonstrates advanced levels of understanding of values and ethics relevant to the specialization, profession and local and international society and promotes them among others.
	4. Works within the professional, institutional, and specialization guiding frameworks and strategic plans.

	5. Interacts with community affairs positively and preserves national identity.
F. Development and Innovation: The graduate has a passion for development and innovation in the field of specialization.	1. Demonstrates the ability to independently manage learning tasks, with an awareness of how to develop and apply new knowledge.
	2. Utilizes specialized knowledge and skills for entrepreneurship.
	3. Utilizes creative and innovative skills in the field of specialization.

3. OQF Characteristics

1. Knowledge
2. Skills
3. Communication, Numeracy, and Information and Communication Technology Skills.
4. Autonomy and Responsibility
5. Employability and Values
6. Learning to learn