COLLEGE OF INFORMATION TECHNOLOGY

DEPARTMENT OF IT

COURSE SYLLABUS/ SPECIFICATION

Course Code & Title:	**ETHC 392 – Ethics and Professional Practice in IT and Engineering**
Weight:	**(3-0-3)**
Prerequisite:	**Completing at least 66 Credits**
NQF Level Allocated:	7
NQF Notional Hours / Credits:	**120 notional hours/ 12 NQF credit**

Description: The course explores and discusses key ethical, legal and professional issues and responsibilities in Computing and other related fields. It examines emergent technologies within frameworks that highlight their ethical, legal and social implications. Topics include privacy, confidentiality, security, intellectual property, software piracy, cybercrime, digital identity, software reliability, risk and safety and professional standards of conduct and codes of ethics. The students critically examine current and relevant research and particular case studies to enhance their understanding of the subject. The students learn that careers in IT and Computer Engineering are not purely technical professions but ones with moral, legal and social implications that impact the everyday lives of professionals.

Objective:

1. To review and apply ethical concepts, frameworks and analysis tools to identify and evaluate ethical choices within the computer-related professions.
2. To explore various ethical and legal issues and controversies commonly faced by computing professionals and their impacts on society.
3. To examine some of the relevant professional code of ethics and code of conduct.
4. To highlight the importance of professional and social responsibilities for computing professionals.

Semester:

Instructor (s):

Office Telephone: **EXT:**   **Email (s):**

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	**Concepts and Theories:** Present advanced knowledge and understanding of ethical, social and legal concepts that relate to the Computing professions.	Knowledge: theoretical understanding [Level 7]
A2	**Contemporary Trends, Problems and Research:** Identify, describe and discuss controversies arising in the computing related fields including intellectual property, privacy and cybercrime, professional and social responsibilities, legal accountability, responsibility and liability.	Knowledge: theoretical understanding [Level 7]
A3	**Professional Responsibility:** Demonstrate the ability to examine and apply the code of ethics and the codes of conduct in relation to IT and computing professions.	Knowledge: theoretical understanding [Level 7] Knowledge: practical application [Level 7]

B. Subject-specific Skills		NQF Descriptor/ Level
B1	**Problem Solving:** Inspect, analyze, and investigate ethical behavior in real-life IT and computing business environments through critical thinking and examination of IT and computing-related ethical codes of conduct.	Knowledge: practical application [Level 7] Generic problem solving and analytical skills [Level 7]
B2	**Modeling and Design: N/A**	
B3	**Application of Methods and Tools: N/A**	

	C. Critical-Thinking Skills	NQF Descriptor/ Level
C1	**Analytic skills:** Identify, analyze, and justify the ethical, legal and social ramifications and implications of certain actions within the computing related fields.	Generic Problem Solving & Analytical skills [Level 7]
C2	**Synthetic:** Formulate and justify ethical decisions taken when examining and analyzing certain behaviors within the computing professions and in the delivery of services.	Generic Problem Solving & Analytical skills [Level 7]
C3	**Creative:** Demonstrate originality in the creation of solutions to ethical dilemmas that arise in the computing profession.	Generic Problem Solving & Analytical skills [Level 7]

	D. General and Transferable Skills (other skills relevant to employability and personal development)	NQF Descriptor/ Level
D1	**Communication:** Share ideas and knowledge relating to the computing profession and the delivery of its services effectively, in both oral and written form.	Communication, ICT and Numeracy Skills [Level 7]
D2	**Teamwork and Leadership:** Develop an experience of leadership and teamwork.	Competence: Autonomy, Responsibility and Context [Level 7]
D3	**Organizational and Developmental Skills:** Value the role of life-long learning and professional development in maintaining professional behavior and up-to-date knowledge on ethical, legal and professional issues.	Competence: Autonomy, Responsibility and Context [Level 7]
D4	**Ethical and Social Responsibility:** Value and embrace ethically and socially responsible behavior in the profession of computing and the delivery of its services.	Competence: Autonomy, Responsibility and Context [Level 7]

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1-2	6	-	A1	**Overview:** Introduction, ethical concepts, theories, perspectives and frameworks, moral philosophy and critical thinking skills needed to establish and justify a moral system.	Lecture/ Class Discussion	Quiz1
3-4	6	-	A1, B1, C1, D1, D4	Definitions, methods and tools of analysis for identifying and evaluating ethical choices. Relationship between Computer engineering and IT codes of ethics, law, professionalism and their social implications. **Case Studies:** E-mail & Spam, the Cyber City Network	Lecture/ Debate/ Case studies	Quiz2 Assignment1
5	3	-	A1,A2,A3, B1, C1,C2	**Professionalism:** Ethical and social responsibilities. Loyalty and whistle-blowing, lifelong learning, professional development, relationships with professional societies, professional codes of conduct and codes of ethics, such as ACM, IEEE, BCS, AITP and ICCP.	Lecture/ Debate	Quiz2
6	3	-	A1, B1, C1,C2,C3, D1,D2,D3,D4	**Workplace issues:** Harassment, discrimination, system use policies, monitoring, surveillance.	Lecture/ Class Discussion	Assignment2

7-8	6	-	A1,A2,A3, B1, C1,C2	**Privacy**, confidentiality and secrecy; monitoring, recording, tracking, intrusion and encryption. **Case Studies:** Wikileaks, Facebook	Lecture/ Debate/ Case studies	Assignment2
9-10	6	-	A1, B1, C1,C2	**Intellectual property** laws and rights, ownership of information, plagiarism, copyrights, patents, trademarks and trade secrets, software piracy, fair use, free and open source movement, Digital Millennium Copyright Act (DMCA), Non-Disclosure Agreements (NDAs). **Case Studies:** P2P Networks (Napster), Google Books	Lecture/ Class Discussion / Debate/ Case studies	Major Exam Quiz3
11-12	6	-	A1, A3, C1,C2	**Trust and Trustworthiness in Computer Engineering and IT**. Social responsibility, safety, reliability, assurance, security, risk within computer-based systems, computerized medicine. **Case Studies:** To Test or not to Test the Software	Lecture/ Debate / Case studies	Major Exam
13-14	6	-	A1,A2,A3, B1, C1,C2, C3, D1,D3,D4	**Legal Issues:** Legal liability and accountability, compliance, computer and cyber-related crimes, hacking/cracking, ethical hacking, piracy, trespassing, vandalism, community and identity in cyberspace, identify	Lecture/ Class Discussion /Debate/ Case studies	Assignment3

				theft, viruses, regulating commerce and speech, Censorship. **Case Studies:** US Children's Internet Protection Act		
15	3	-		Revision		
16	2	-	A1,A2,A3,B1, C1,C2	All Topics		Final Exam

* Formative assessment

Teaching Materials:

Textbook(s):	1. M. J. Quinn, *Ethics for the Information Age*, 6th Ed., Wiley, 2015.
Handout(s):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
Reference(s):	**Books:** 1. G. Reynolds, *Ethics in Information Technology*, Thomson Course Technology, 5th Ed., 2014. 2. W. J. Brinkman and A. F. Sanders, *Ethics in a Computing Culture*, 1st Ed., 2013 3. Herman T. Tavani, *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computin*g, Wiley, 3rd Edition, 2009. 4. M. Quinn, *Ethics for the Information Age*, 4th ed., Pearson, 2009. 5. D. G. Johnson, *Computer Ethics,* 4th ed., 2009. 6. S. Baase, *A Gift of Fire: Social, Legal, and Ethical Issues for Computing and the Internet*, 3rd Ed., Prentice Hall 2008. 7. R. A. Spinello, Case Studies *in Information Technology Ethics*, 2nd Ed., Pearson, 2002. 8. R. Spinello, *Cyberethics: Morality and Law in Cyberspace*, 4th Ed., Jones & Bartlett Publishers, 2010. 9. J. Rachels and S. Rachels, *The Right Thing to Do: Basic Readings in Moral Philosophy*, McGraw-Hill College; 6thEd., 2011. **Articles:** 1. R. E. Anderson, D. G. Johnson, D. Gotterbarn and J. Perrolle, "Using the New ACM Code of Ethics in Decision Making," Communications of the ACM, Vol. 36 (2), pp. 98—107, 1993. Available at http://www.acm.org/about/p98- anderson.pdf. 2. Nord, G. D., McCubbins, T. F., & Nord, J. H. (2006). E-monitoring in the workplace: privacy, legislation, and surveillance software. Communications of the ACM, 49(8), 72-77.

Websites:

1. *ACM Code of Ethics and Professional Conduct*, available at http://www.acm.org/about/code-of-ethics
2. *ACM/IEEE Software Engineering Code of Ethics and Professional Practice*, available at http://www.acm.org/about/se-code
3. *IEEE Code of Ethics*, available at http://www.ieee.org/about/ethics_code/index.html
4. *AITP Code of Ethics and Standards of Conduct*, available at http://c.ymcdn.com/sites/www.aitp.org/resource/resmgr/forms/code_of_ethics.p df
5. ICCP Code of Ethics, available at http://iccp.org/coe
6. *ACM Privacy Policy*, available at http://www.acm.org/about/privacy-policy
7. *Codes of Conduct/Practice/Ethics From Around The World*, available at http://courses.cs.vt.edu/cs3604/lib/WorldCodes/WorldCodes.html
8. *Engineering Ethics in Practice: A guide for Engineers*, available at http://www.raeng.org.uk/societygov/engineeringethics/pdf/engineering_ethics_in_practice_short.pdf
9. *Ethics in Practice: A Practical Guide for Professional Engineers*, available at http://www.icac.org.hk/new_icac/files/cms/eng/12418pdf.pdf
10. *Ethics in Engineering,* available at https://www.asme.org/about-asme/get- involved/advocacy-government-relations/ethics-in-engineering
11. *Ethics Cases,* available at http://www.scu.edu/ethics/practicing/focusareas/cases.cfm
12. *Computer Ethics Links,* available at http://www.sigcas.org/ethics and maintained by ACM Special Interest Group on Computers and Society (SIGCAS).
13. *Online Ethics Center,* available at http://www.onlineethics.org/ and maintained by the National Academy of Engineering (NAE).
14. More references are available in **the course website in Moodle.**

Organizations:

1. IEEE Society on Social Implications of Technology (SSIT)
2. ACM Special Interest Group on Computers and Society (SIGCAS)
3. National Institute for Engineering Practice (NIEE)

Assessment

Assessment Method	Description	ILOs	Weight
Test	The Major Exam is a 1-hour in-class exam that consists of multiple choice, essay, and problem solving questions. It covers the topics studied in the first 8 weeks.	A1, A2, A3, B1, C1, C2	20%
Assignments	Three assignments are given to students; each is weighted 10 marks and all are summed up to a total of 30% of the student final mark. **Assignment 1:** Students are given some ethical scenarios and are asked to evaluate these scenarios and to suggest ethical solutions to them. Students are encouraged to come up with creative solutions to the ethical issues involved in these scenarios. **Assignment 2:** Students are divided into groups, each group is assigned a section of an article related to the latest issues/controversies in IT/Computer- Engineering ethics to summarize and present to their classmates. The article is included in the Course Material. **Assignment 3:** Role-playing can be a powerful learning experience and can, if used correctly, help stimulate lively discussion and debate among students. In this exercise, students are asked to take the part of a character in a case study that portrays a realistic, difficult ethical situation, students will be working in groups and along with the role-play students must provide a report containing the script, their roles as well as a list of the ethical problems. The goal of this exercise is that student will recall what they have learned through participating in this role play scenario and be able to apply what they learned to ethical problems they may encounter in their professional careers.	A1, A2, A3, B1, C1, C2, C3, D1, D2, D3, D4	30%
Quizzes	Five 30-minutes in-class quizzes are given to students; each is weighted 10 marks, out of which, only the best four quiz marks, for each student, are averaged to constitute the 10% mark assigned to quizzes. Each quiz consists of two questions; a multiple choice question and either a problem solving or essay question.	A1, B1, C1	10%

	A two hours closed book final exam is given to students. It covers all materials taught in the course including the article given to students in Assignment 2. The final exam consists of multiple choice, short-answer, essay and problem-solving questions that encourage the development of creative solutions to the ethical issues/scenarios addressed in the exam.	A1, A2, A3, B1,C1, C2, C3	40%
Final Exam			
Overall			**100%**

Admissions	
Minimum number of students	**5**
Maximum number of students	**25**

Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.ahlia.edu.bh/integrity **for more information).**