

The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Total Quality Management
2	Course number	(1904481)
3	Credit hours (theory, practical)	3 Credit Hours Theory
	Contact hours (theory, practical)	3 Credit Hours Theory
4	Prerequisites/corequisites	Statistical Package (1904255), Software Engineering (1902371), Introduction to Database (1902223)
5	Program title	BSc Business Information Technology
6	Program code	4
7	Awarding institution	The University of Jordan
8	Faculty	King Abdullah II School for Information Technology
9	Department	Department of Business Information Technology
10	Level of course	4th
11	Year of study and semester (s)	2022/2023
12	Final Qualification	BSc
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	31/1/2023
16	Required/ Elective	Required

16. Course Coordinator:

Dr. Yazan Alshamaileh

Office number:

office hours:

Sunday 10:00-11:00

Tuesday 10:00-11:00

Wednesday 11:00-12:30

Office Phone: +962 6 5355000 Ext.: 22645

y.shamaileh@ju.edu.jo

17. Other instructors:

--

18. Course Description:

This course introduces students to the use of quality management (QM) principles to the fast-paced, dynamic, and global software (Product) development.

Software Engineering Standards in Testing and Quality Control and Assurance are also introduced. Metrics are covered with real-life examples.

19. Course aims and outcomes:

A- Aims:

The main goal of this course is to equip students with knowledge on Quality Management, their basic concepts, tools, static measurements and applications.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

A- Knowledge and Understanding: Students should ...

A1: Understand Product quality assurance (PQA) concepts, types, models, structures, operations, controls, and development environment. (SO 2)

A2: Illustrate how the creative use of PQA can give an organization a competitive advantage.

A3: Describe PQA role in software development control. (SO 2)

B- Intellectual skills: Have the ability to

B1) Analyze and compare the advantages of QA, PQA, and QM. (SO 1)

B2) Think how to improve team collaboration by using, QA, PQA, and QM.

C- Subject-Specific skills – Have the ability to

C1) Implement practical cases, by using available software. (SO 1)

D- Transferable skills – Have the ability to

D1) Discuss and work in a group in order to design and write the specifications of a new business case. (SO 2)

D2) Work with other groups in order to make different implementations of the same case specification. (SO 2)

D3) Present the final work (project) and make a demo.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods
1. Quality Management (QM): Introduction Quality concepts and definitions; Quality, Quality Control, Quality Assurance, and Total Quality Management. Organizational Frameworks for Quality Management. Quality Systems: ISO 9000:2000. What is Software Quality? The Cost of Quality.	1,2		A1,A2,A3,B1	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle

. Quality Management: Process Control Process Definition, Core Processes, Business Process Model, Improving a Process, Identifying Improvement Needs, Benefits of Studying a Process, Sources of Problems in a Process, Process Improvement, Statistical Process Control	3+4		A2,B2	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle
<i>Software Quality Engineering (Lecture notes)</i> Software Quality Process, Measurement Theory, Metrics Product Reliability, Reliability Measurement, Software vs. Hardware reliability, Function Point (FP) analysis, Defect Density Measurement, Customer Satisfaction Measurement. Case Study.	5,6,7		A3,C1,D1	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle A: in class discussions on the extra material
Review and Midterm Exam	8			
QM: Problem Solving and Decision Making (Lecture notes) Decision Trees, EMV, EVPI, Sample Information, and Sample efficiency.	9.10		A2, ,C1,C2	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle A: Assignment:
Quality Tools and Techniques (QM Chs: 15, 16, 17, 20 + Lecture notes) TQM Model, Tools, Work Place.	9+10		A2,B1, C1,C2	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle
Review and Quiz	11			
7. Quality Management Implementation (QM Ch: 22 + Lecture notes) Rationale for change, Requirements for Implementation, Role of all participated parties, and Quality cost involved.	12		A3,C3	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle
Quality Testing (Lecture notes) Testing objectives; Verification, Validation & testing; How much testing; Testing principles; A traditional testing approach Vs A better testing approach; Test Levels; Testing Types.	13 + 14		A2, A3	T: Lecture L: Reading lecture notes A: Synchronous lecturing/meeting on Microsoft teams + Powerpoint presentation on Moodle L: Demo A: Quiz
Review and Final Exam	15			

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Method	Lecture	Demo	Laboratory	Case study
Learning outcome	A1+A2+A3	B2+ D4	C1 + D2 +D3	B1 + D1
Assessment	Exams + Assignments	Exams + Assignment s	Project + Presentation	Exams + Presentation

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Assessment (A) Methods: There will be several assessment methods of evaluation the performance of the students such as attending and class participation, grading the homework, quizzes and assignments; conducting the Midterm and the Final Exams. Every student is expected to completely adhere to the assignments strict deadlines, absolutely no exceptions will be given.

Assessment Weights:

Mid exam 30%

Homework's and quizzes 20%

Final Exam 50%

23. Course Policies:

A-Attendance policies: Student is derived from attending the final exam of the course if s/he is absent for 15% of class time (5 absences for lecture duration 1 hour 20 minutes, and 7 absences for lecture duration 50 minutes) and will be given a fail (F) grade.

If the absence is for a valid reason that is deemed acceptable by the registrar, the student is considered withdrawn (WD) from the subject.

B- Absences from exams and handing in assignments on time: · Submitting the HomeWorks and assignments will be through the Moodle platform, the time duration for each home work /assignment will be determined clearly. Late submissions are not allowed; any student exceed this time duration without submitted his/her homework will take the zero as mark. · Absence of any exam is not acceptable, except with an official excuse.

D- Honesty policy regarding cheating, plagiarism, misbehavior: It is the student's responsibility to ensure that he/she is adhere with cheating, plagiarism, misbehavior

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

Grading and Evaluation Criteria: 100 points distributed as follows:

Weight Criteria Comments 30% Mid-term, 20% Quizzes and homework's, 50% Final Exam

F- Available university services that support achievement in the course: <http://elearning.ju.edu.jo>

C- Grading policy:

Intended (Tentative) Grading Scale:

Range	LG	الحرف	Range	LG	الحرف	Range	LG	الحرف
91 - 100	A	أ	74 - 77	B-	-ب	56 - 60	D+	+د
86 - 89	A-	-أ	70 - 73	C+	+ج	50 - 55	D	د
82 - 85	B+	+ب	66 - 69	C	ج	45 - 49	D-	-د
78 - 81	B	ب	61 - 65	C-	-ج	0 - 44	F	هـ

Grading and Evaluation Criteria: 100 points distributed as follows:

Weight	Criteria	Comments
30%	Mid Exam	TBA
20%	2nd exam	TBA
50%	Final Exam	TBA

G- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

24. Required equipment:

Students should have a computer, internet connection, webcam, account on a via MS-Teams and Moodle)

2^o. References:

Text Books

1. Goetsch, D. L., & Davis, S. B. (2014). *Quality management for organizational excellence*. Upper Saddle River, NJ: pearson.
2. Galin, D., *Software Quality Assurance; From Theory to Implementation (USA: Pearson Education), 2004.*
3. Lecturer's Notes

Reading List

1. Frank P. Ginac Customer Oriented Software Quality Assurance (USA: Prentice Hall), 1998.
2. Norman Fenton and Shari Lawrence, Software Metrics: A Rigorous and Practical Approach (USA: International Thompson Publishing), 1997.
3. Schulmeyer and G. Gordon, The Handbook of Software Quality Assurance (USA : John Wiley & Sons), 1998.
4. Donna C. S. Summers, Quality Management, (New Jersey: Pearson Education, Inc.), 2009.

26. Additional information:

Date: 31/1/2023

Name of Course Coordinator: ----- Signature: -----

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

Assistant Dean for Quality
Assurance

Course File