The Hashemite University

الجامعـــــة الهاشميـــــة

Deanship of Academic Development and International Outreach

عمادة التطوير الأكاديمي والتواصل الدولي

Software Quality Assurance (2010031440)

Second Semester 2021/2022

COURSE INFORMATION	
Course Name: Software Quality Assurance **Semester:** Second Semester 2021/2022 **Department:** Department of Software Engineering **Faculty:** Prince Al-Hussein Bin Abdullah II Faculty for Information Technology	**Course Code: 2010031440** **Section:** Elective **Core Curriculum**:
Day(s) and Time(s): Sunday, Thursday, Tuesday: 12:00-13:00 **Classroom:** **blended** _ Microsoft Teams & H.B 301	**Credit Hours:** 3 **Prerequisites**: 2010031332 – Software Design

COURSE DESCRIPTION

Credit Hours. The course explores a variety of software quality assurance components, activities, standards and tools that cover software project life cycle (requirements, design and implementation), project management, risk management, project budget and cost as well as development team. This course also covers quality metrics (metrics for the quality of analysis, design and code). Software complexity measures, case studies and hands on experiences covered in this course.. (٣)

DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These will include:

- PowerPoint lectures and active classroom based discussion
- Video lectures
- E-learning resources: e-reading assignments and practice quizzes through Model and Microsoft Team

FACULTY INFORMATION

Name	**Maryam AlZawahra**
Academic Title:	**Tutor**
Office Location:	**IT 250**
Telephone Number:	
Email Address:	**Maryam_alz@hu.edu.jo**
Office Hours:	Sunday 10:00-11:00 Thursday 10:00-11:00

	Tuesday 10:00-11:00 *Please send an e-mail (Maryam_alz@hu.edu.jo) to meet at any other time.*

REFERENCES AND LEARNING RESOURCES

Required Textbook:

- Software Engineering A Practitioner's Approach, Roger Pressman and Bruce R. Maxime, 9th edition, 2020.

Suggested Additional Resources:

- Software Quality Assurance, First Edition, Claude Y. Laporte, Alain April, 2017.
- Software Quality Assurance: Integrating Testing, Security, and Audit, Abu Sayed Mahfuz, 1st Edition ,2016.

STUDENT LEARNING OUTCOMES MATRIX*

Core Curriculum Learning Outcomes	Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
	[EA2] Ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.	• Identify SQA concepts • Understand technical review in practice • Explain Software Testing strategies • Identify software metrics and analyses them	• [CLO1] Have knowledge of Software Quality Assurance concepts and procedures. • [CLO2] Get a knowledge about SQA elements, such as Testing, Measurement, Configuration and Change Management. [CLO3] Have knowledge of applying Software Technical review in practice	• Exams • Assignments • Presentation
	[EP6] Understanding of appropriate codes of practice and industry standards.		[CLO3] Have knowledge of applying Software Technical review in practice	• Exams • Assignments • Presentation
	[EP7] Awareness of quality issues and their application to continuous improvement.		[CLO4] Communicate effectively on the project through technical reports and oral presentations.	• Exams • Assignments • Presentation

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section:
Tel:
Location:
Email:

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of the Hashemite University.

Plagiarism includes the following examples and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**

- **Misrepresentation of the sources that were used.**

The instructor has the right to fail the coursework or deduct marks where plagiarism is detected

Late or Missed Assignments

In all cases of assessment, students who fails to attend an exam, class project or deliver a presentation on the scheduled date without prior permission, and/or are unable to provide a medical note, will automatically receive a fail grade for this part of the assessment.

- Submitting a term paper on time is a key part of the assessment process. Students who fail to submit their work by the deadline specified will automatically receive a 10% penalty. Assignments handed in more than 24 hours late will receive a further 10% penalty. Each subsequent 24 hours will result in a further 10% penalty.
- In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with University regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment or extension can be arranged.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account. The criteria for grading are listed at the end of the syllabus

Assessment	Grade Weighting	Deadline Assessment
Mid Exam	35 %	
Presentation & assignments	25 %	
Final Exam	40%	

Description of Exams

Test questions will predominately come from material presented in the lectures. Semester exams will be conducted during the regularly scheduled lecture period. Exam will consist of a combination of multiple choice, short answer, writing code or descriptive questions.

No make-up exams, homework or quizzes will be given. Only documented absences will be considered as per HU guidelines.
Grades are not negotiable and are awarded according to the following criteria*:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION		
Topic	**Chapter in Text**	**Week #**
Quality Concepts 15.1 What Is Quality? 15.2 Software Quality 15.3 the software quality dilemma 15.4 Achieving software quality	15	Week1 (3 Lectures)
Reviews – A Recommended Approach: 16.1 Cost impact of software quality 16.2 Defect amplification and removal 16.3 Review metrics 16.4 Criteria for types of review 16.5 Informal Review 16.6 Formal Technical review	16	Week2,3 (6 Lectures)
Software Quality Assurance 17.1 Elements software assurance 17.2 SQA process and product characteristic 17.3 SQA tasks, goals and metrics	17	Week 4,5 (6 Lectures)

17.4 17.5 Formal approach for SQA 17.6 Statistical SQA 17.7 The ISO 9000 standards		
Software Testing – Component Level 19.1 strategic approach for testing 19.2 Planning and Recordkeeping 19.3 Test case design 19.4 White Box Testing	19	Week 6,7 (6 Lectures)
Software Testing – Integration Level 20.1 Software Testing fundamental 20.2 Integrating Testing 20.3 Integrating Testing in OO Context 20.4 Validation Testing	20	Week 8,9 (6 Lectures)
Software Testing – Specialized Testing for Mobility 21.1Mobile Testing Guideline 21.2 The Testing Strategies 21.3 User Experience testing 21.4 Web application testing 21.5 Security Testing 21.6 Testing in System 21.7 Testing in virtual Environment	21	Week 10,11 (6 Lectures)
Software Configuration Management 22.1 Software Configuration testing 22.2 Continuous Integration 22.3 Version Control Testing 22.4 Continuous Integration	22	Week 12,13 (6 Lectures)
Software Metrics and Analytics 23.1 Software Management 23.2 Software analytic 23.3 Product metrics 23.4 Metrics for management 23.5 process and project management	23	Week 14 (3 Lectures)

ASSESSMENT RUBRICS

ASSESSMENT for the Project					
Criteria	**Quality**				**Total**
Presentation	Full with a good SQA topic and good presentation	Full but with weak	Lot of missing things	Report is very poor and there is no much work on it	
	5	3	2	0	**/5**
Assignments	Upload all assignments correct and good working	Upload some assignment with mistakes	Incomplete or small number of assignments	No or incorrect assignments	
	20	12	8	0	**/20**
					Total out of 25