# Jordan University of Science and Technology
## Faculty of Computer & Information Technology
## Software Engineering Department

| SE430 Software Testing - JNQF Level: 7 |
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| Second Semester 2023-2024 |

| Course Catalog |
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| 3 Credit Hours. This course teaches quantitative, technical, practical methods that software engineers and developers can use to test their software, both during and at the end of development. Concepts and techniques for testing and modifying (correcting problems or debugging) software in evolving environments. Topics include software testing at the unit, module, subsystem, and system levels; developer testing; automatic and manual techniques for generating test data; designing and implementing software to increase maintainability and reuse; evaluating software for change; and validating software changes. Also, It covers the various subjects, including test models, test design techniques (black box and white-box testing techniques), integration, regression, and system testing methods. |
| **Teaching Method:** On Campus |

| Text Book | |
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| **Title** | Software Testing: An ISTQB-ISEB Foundation Guide, Second Edition |
| **Author(s)** | Brian Hambling, |
| **Edition** | 2nd Edition |
| **Short Name** | Software Testing, An ISTQB-ISEB Foundation Guide |
| **Other Information** | |

| Instructor | |
|---|---|
| Name | **Dr. HAMZA ALKOFAHI** |
| Office Location | N2-L0 |
| Office Hours | Sun : 11:30 - 13:00<br>Tue : 11:30 - 13:00<br>Wed : 08:00 - 09:30<br>Thu : 11:30 - 13:00 |
| Email | hoalkofahi@just.edu.jo |

| Class Schedule & Room |
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| Section 1:<br>Lecture Time: Sun, Tue, Thu : 08:30 - 09:30<br>Room: M2010 |

| Prerequisites | | |
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| **Line Number** | **Course Name** | **Prerequisite Type** |
| 1763200 | SE320 System Analysis And Design | Prerequisite / Study |

| Tentative List of Topics Covered | | |
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| **Weeks** | **Topic** | **References** |
| Weeks 1, 2 | Principles | From **Software Testing, An ISTQB-ISEB Foundation Guide** |
| Weeks 3, 4, 5 | Testing in life cycle | From **Software Testing, An ISTQB-ISEB Foundation Guide** |
| Weeks 6, 7 | Static Testing | From **Software Testing, An ISTQB-ISEB Foundation Guide** |
| Weeks 8, 9, 10, 11 | Dynamic Testing Techniques | From **Software Testing, An ISTQB-ISEB Foundation Guide** |
| Week 12 | Mutation Testing | |
| Week 13 | Regression-Testing | |
| Week 14 | Test Management | From **Software Testing, An ISTQB-ISEB Foundation Guide** |
| Week 15 | Tool support for testing (CAST) | From **Software Testing, An ISTQB-ISEB Foundation Guide** |

| Mapping of Course Outcomes to Program Outcomes and NQF Outcomes | Course Outcome Weight (Out of 100%) | Assessment method |
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| Evaluate and analyze established testing concepts, the fundamental test process, test approaches, and principles across all test levels to support diverse test objectives. [1C2, 1B2] [1L7K1] | 15% | |

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| Assess the effectiveness of various white box testing techniques, demonstrating the ability to calculate test coverage and yield based on a range of criteria. [1C3, 1B3] [1L7S1] | 35% | |
| Design comprehensive test cases based on black box testing techniques to access complex system functionalities against its requirements. [1C6, 1B6] [1L7S1] | 25% | |
| Evaluate software through the facilitation of software reviews and the application of inspections using a range of static testing techniques. [1C13, 1B13] [1L7S3] | 10% | |
| Develop and implement an automated test suite for a software application, integrating various testing tools and frameworks to achieve comprehensive test coverage and efficient test execution. [1C12, 1C13, 1B12, 1B13] [1L7C2] | 10% | |
| Formulate test strategies and plans that account for dynamic project requirements, organizational contexts, and industry best practices. [1C14, 1B14] [1L7C1] | 5% | |

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| SM1p | SM2p | SM3p | EA1p | EA2p | EA3p | EA4p | D1p | D2p | D3p | D4p | D5p | D6p | ET1p | ET2p | ET3p | ET4p | ET5p | ET6p | EP1p | EP2p | EP3p | EP4p | EP5p | EP6p |
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| **Relationship to NQF Outcomes (Out of 100%)** | | | | |
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| L7K1 | L7S1 | L7S3 | L7C1 | L7C2 |
| 15 | 60 | 10 | 5 | 10 |

| **Evaluation** | |
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| **Assessment Tool** | **Weight** |
| Final | 40% |
| First | 20% |
| Second | 25% |
| Course Work (HWs & Quizzes) | 15% |

| **Policy** | |
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| HW | 1. Late work will not be accepted. 2. All work has to be done independently within the team 3. Use your e-learning account to submit a softcopy of your work with your Name, Section#, and ID |
| Exams | 1. Exam?s format is generally (but NOT always) divided into three parts: Basic Concepts, Program Analysis, and Programming. 2. Makeup exam should not be given unless there is a valid excuse accepted by the university policies. |
| Attendance | 1. If you miss a class, it is your responsibility to find out about any announcements, quizzes, or assignments you may have missed. 2. University policies will be applied regarding attendance (check your student book). 3. Your attendance/absence is updated weekly into your student account. |

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