# Solent University Module Descriptor

## **Module Code: COM422** **Module title: Software Testing and Reliability Engineering**

### **Why is this module important?**

Software testing is a vital part of the software lifecycle. If software does not work as expected then this can lead to problems resulting in a loss of time, money and reputation.

Testing is not strictly about running tests and looking for logic errors. It is a process consisting of many different practices that need to be understood.

Knowledge in testing will help you build more robust and reliable software that meets the expectations of both users and clients.

### **What you will learn on the module**

You will learn about the testing process and the different types of tests that are commonly used, these will include component/module testing, usability testing and user acceptance testing.

You will also analyse requirements and develop testing strategies for given circumstances and you’ll get hands on with number of tools that will aid you in the testing process.

### **How you will learn?**

This module attempts to underpin the underlying theory of testing processes and how this is applied in practice. As such, your first session each week will start with the lecturer presenting the topic and delivering the important concepts that you will need to know for that week. Then you will have the opportunity to apply these practices in a computer lab.

You will also have access to resources and support material which will be published to Solent Online Learning to aid you in your studies.

### **How much time the module requires:**

This module is a 20-credit module. This means you are expected to undertake 200 hours of study time over the duration of the module. This time should be divided between class time, directed learning tasks, your own independent study and assessments. Your tutor will offer you guidance on how you should best manage your study time on this module

### **How you will be assessed**

#### **Tasks which help you to learn and prepares you for summative tasks (Formative):**

The weekly tasks will be structured to help build you up towards completing your assessment. The lecturer will be on hand to help you complete these tasks and will also provide feedback on your work both as you are working and after you have completed.

The feedback you receive will help inform your approach to the assessment.

You will also have an opportunity to show the lecturer any initial drafts/designs of your assessment in order to get direct feedback against your assessment.

#### **Tasks which count towards your degree (Summative):**

You will be given an assignment brief that will contain a scenario describing the needs of a business who require some bespoke software to be developed. Upon receiving this brief, you will be required to analyse the scenario and devise an appropriate testing strategy to ensure requirements are met and that the software will be as robust and reliable as possible.

You will also develop tests using tools that you will select based on what you feel is most appropriate for your testing strategy and evaluate the effectiveness of the methods and tools you selected.

You will submit the work as a report in which you detail your strategy, justify the decisions you have made and evidence the tests you have created.

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#### **When assessment does not go to plan?** Pending the decision of the exam board, under most circumstances you will be required to re-sit the assessment.

The re-sit will take the form of the original assessment, you will be asked to improve your work in light of feedback.

### **What you will be able to do after the module**

### Explain the different approaches to testing

### Identify and apply appropriate testing practices

1. Select and use appropriate testing tools
2. Analyse requirements and design appropriate testing strategies
3. Evaluate selected tools and test plans

### **How this relates to the dimensions of Solent’s Real-world curriculum framework**

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| --- | --- | --- |
| **Dimensions** | **How students learn** | **How students are assessed** |
| Students are challenged to think in critical, creative and applied ways | Students will evaluate and select appropriate tools and methodologies and will also critique their own approach. | As part of the assessment, students will be required to develop their own test strategy. This will involve making an informed decision about what tools, methods and techniques are most appropriate and therefore should be used. |
| Students experience an intellectually stimulating curriculum which inspires them to learn for life | Students will design and develop strategies to given requirements, as would be the case in industry | Students link theory and practice to develop a test strategy, as well as create actual tests that would be run against software developed in accordance with the requirements. |
| Students reflect and grow inwardly, socially and ethically to be able to confront the challenges of the world | Students will reflect on and evaluate their own work, considering whether they could have approached things differently or more efficiently | As part of the assessment, students will be required to evaluate the testing strategy they devised, along with the tools they selected. |
| Students learn from authentic, engaging and programmatic assessment | Students will undertake tasks that will mirror practice in the discipline | Students will be given requirements to work from, as with most client based situations. |

### **Summative assessment details**

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| AE1 | Weighting: | 100% |
|  | Assessment type: | Report |
|  | Aggregation: | N/A |
|  | Length/duration: | 2000 Words |
|  | Online submission: | Yes |
|  | Grade marking: | Yes |
|  | Anonymous marking: | Yes |

### **Module Author:**

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| --- | --- | --- | --- |
| Module Title: Software Testing and Reliability Engineering | | | |
| Credit Points: | 20 | Module Code: | COM422 |
| FHEQ Level: | 4 | School/Service | School of Media Arts and Technology |
| Module Delivery Model: | CD | Max/Min student numbers |  |
| Module Leader: | Darren Cunningham | | |
| HECOS code | 100374 | | |

### **Module change history:**

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| --- | --- | --- | --- |
| Module Approved/Year Implemented/Code | July 2019 | 2020/21 | COM422 |
| Module modified/Year Implemented/Code |  |  |  |