

Course Outline (Higher Education)

Institute / School: Institute of Innovation, Science & Sustainability

Course Title: SOFTWARE TESTING

Course ID: ITECH7409

Credit Points: 15.00

Prerequisite(s): (ITECH1400 or ITECH5104)

Co-requisite(s): Nil

Exclusion(s): Nil

ASCED: 020103

Description of the Course:

This course equips students with the knowledge and skills required to plan, document and undertake testing from the initial stages of software requirements through to the final testing of a fully implemented software system. Topics may include an overview of testing, test levels and test types, the testing lifecycle and methodologies, critical analysis of software requirements and proposed solutions, testing scoping and approaches that may be used, non-functional testing, development of test artefacts, defect identification, logging, tracking and reporting, along with future trends in software development and the implication this may have on the test.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Does Recognition of Prior Learning apply to this course? No

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

Knowledge:

- K1.** Critically evaluate software requirements as inputs toward testing of the final solution;
- K2.** Analyse and critically evaluate appropriate tools and techniques to support the testing process;
- K3.** Explain key factors when selecting and applying measures and models used for testing that are compliant with professional industry standards such as the ACS and IEEE;
- K4.** Critically reflect on the outcomes of software testing and propose strategies for improving quality and performance outcomes in the software process;

Skills:

- S1.** Analyse and critically evaluate software requirements and proposed solutions;
- S2.** Apply complex decision making to select appropriate testing techniques;
- S3.** Write professional-level management, planning, quality assurance and testing documentation for a software system;
- S4.** Work in a team to evaluate and implement appropriate methods for determining quality and reliability in software systems;
- S5.** Undertake quality assurance processes

Application of knowledge and skills:

- A1.** Develop and maintain plans for scheduling quality assurance tasks including software testing;
- A2.** Carry out the process of software testing and writing reports detailing the results;

Course Content:

Topics may include:

- Overview of testing, test levels and test types
- Testing lifecycle and methodologies
- Critical analysis of software requirements
- Critical analysis of proposed solutions
- Testing scoping and approach
- Non-functional testing
- Testing artefacts and deliverables
- Test management metrics and reporting
- Applying quality management to testing
- Defect identification, logging, tracking and reporting
- Tools and techniques to support the testing process
- Future trends and the implication for testing

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**tttributes **S**kills and **K**nowledge)

provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are to be embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni course, and all must be directly assessed in each program.*

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 1 Interpersonal	Students at this level will demonstrate an advanced ability in a range of contexts to effectively communicate, interact and work with others both individually and in groups. Students will be required to display high level skills in-person and/or online in: <ul style="list-style-type: none"> • Using and demonstrating a high level of verbal and non-verbal communication • Demonstrating a mastery of listening for meaning and influencing via active listening • Demonstrating and showing empathy for others • High order skills in negotiating and conflict resolution skills • Demonstrating mastery of working respectfully in cross-cultural and diverse teams. 	S4	AT1
FEDTASK 2 Leadership	Students at this level will demonstrate a mastery in professional skills and behaviours in leading others. <ul style="list-style-type: none"> • Creating and sustaining a collegial environment • Demonstrating a high level of self-awareness and the ability to self-reflect and justify decisions • Inspiring and initiating opportunities to lead others • Making informed professional decisions • Demonstrating initiative in new professional situations 	Not applicable	Not applicable
FEDTASK 3 Critical Thinking and Creativity	Students at this level will demonstrate high level skills in working in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: <ul style="list-style-type: none"> • Reflecting critically to generate and consider complex ideas and concepts at an abstract level • Analysing complex and abstract ideas, concepts and information • Communicate alternative perspectives to justify complex ideas • Demonstrate a mastery of challenging conventional thinking to clarify complex concepts • Forming creative solutions in problem solving to new situations for further learning 	K4	AT1
FEDTASK 4 Digital Literacy	Students at this level will demonstrate the ability to work competently across a wide range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: <ul style="list-style-type: none"> • Mastering, exploring, evaluating, managing, curating, organising and sharing digital information professionally • Collating, managing complex data, accessing and using digital data securely • Receiving and responding professionally to messages in a range of professional digital media • Contributing competently and professionally to digital teams and working groups • Participating at a high level in digital learning opportunities 	A2	AT1

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 5 sustainable and Ethical Mindset	<p>Students at this level will demonstrate a mastery of considering and assessing the consequences and impact of ideas and actions in enacting professional ethical and sustainable decisions. Students will be required to display skills in:</p> <ul style="list-style-type: none"> • Demonstrate informed judgment making that considers the impact of devising complex solutions in ambiguous global economic environmental and societal contexts • Professionally committing to the promulgation of social responsibility • Demonstrate the ability to evaluate ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Communicating lifelong, life-wide and life-deep learning to be open to the diverse professional others • Generating, leading and implementing required actions to foster sustainability in their professional and personal life. 	Not applicable	Not applicable

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, K3, K4, S1, S2, S3, S4, S5, A1, A2	Develop skills in the analysis and practical application of content introduced	Team and Individual assignments	60% - 80%
K1, K2, K3, K4, S1, S2	Participate in lectures and laboratories/tutorials, read and summarise theoretical and practical aspects of the course	Examination(s) / Test(s)	20% - 40%

Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a program level. Although courses must undertake MiCS mapping, there is NO expectation that courses will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS program level reporting highlights how each program embraces the principals and practices associated with the Co-Operative Model. Evidence of program alignment with the MiCS, can be captured in the Program Modification Form.

MICS Mapping has been undertaken for this course No

Date:

Adopted Reference Style:

APA

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)