Course Outline (Higher Education)

School / Faculty: Faculty of Science and Technology

Course Title: SOFTWARE ENGINEERING

Course ID: ITECH2309

Credit Points: 15.00

Prerequisite(s): (ITECH2100 or ITECH2306)

Co-requisite(s): Nil

Exclusion(s): (ITECH3201)

ASCED Code: 020305

Grading Scheme: Graded (HD, D, C, etc.)

Program Level:

AQF Level of Program						
	5	6	7	8	9	10
Level						
Introductory						
Intermediate			✔			
Advanced						

Learning Outcomes:

Knowledge:

K1. Describe the requirements elicitation and design phases of the software development life cycle.
K2. Compare and contrast common software development methodologies.
K3. Explain how software developers use models to analyse and modify software systems.
K4. Describe fundamental software engineering concepts.

Skills:

S1. Apply software engineering principles to design and implement software applications.
S2. Operate CASE software to develop appropriate models of software systems.
S3. Develop comprehensive unit test suites.

Application of knowledge and skills:

A1. Write integrated reports, using appropriate models, providing detailed analysis of given textual scenarios.
A2. Implement software applications, using appropriate software engineering techniques, from a given textual scenario.

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Course Content:

Topics may include:

- Software Engineering fundamentals.
- Systems Development Life Cycle (SDLC).
- Requirements analysis and modelling systems requirements.
- Object-oriented system analysis and design.
- Computer Aided Software Engineering and UML.
- Software testing.
- Software maintenance.
- Software Engineering standards.

Values and Graduate Attributes:

Values:

V1. Appreciate the need for adhering to software engineering methodologies and adopting best practice design solutions.

V2. Respect the requirement for a level of professionalism when designing and implementing software solutions.

Graduate Attributes:

FedUni graduate attributes statement. To have graduates with knowledge, skills and competence that enable them to stand out as critical, creative and enquiring learners who are capable, flexible and work ready, and responsible, ethical and engaged citizens.

Attribute	Brief Description	Focus
Knowledge, skills and competence	Students will continue to develop their knowledge and skills to be able to interpret and compare different software engineering approaches.	Medium
Critical, creative and enquiring learners	Through participation in a self-directed and collaborative learning environment, students will develop their critical thinking skills and expertise in the field of software engineering.	Medium
Capable, flexible and work ready	Students will illustrate their flexibility in the production and design of solutions that meet industry standards.	Medium
Responsible, ethical and engaged citizens	Students will illustrate responsibility in the utilisation of Industry-standards when designing and developing software in a professional manner.	Medium

Learning Task and Assessment:

Students should complete all tutorial and lab exercises for the semester. Students should participate in lectures, tutorials / lab classes and maintain a portfolio with notes and exercises. Notes should be enhanced by guided reading.

Assessable tasks: The assessment for this course may include at least one team assignment requiring the design and implementation of a small application. Assignments and class exercises will enable students to demonstrate their mastery of specific concepts tested. The examination will test the knowledge and understanding of the concepts across the whole course.

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Learning Outcomes Assessed	Assessment Task	Assessment Type	Weighting
S1, S2, S3, A1, A2	Students will use object-oriented programming constructs and software engineering methodologies to design, write, implement and document software solutions.	Assignments, Projects, Presentation	40-60%
K1, K2, K3, K4	Students will provide theoretical answers and provide practical solutions to a range of questions and problem types drawn from theory, assignments and examples used during this course.	Tests / Examinations	40-60%

Adopted Reference Style:

APA