UNIVERSITI TEKNOLOGI MARA

CSC555: SOFTWARE ENGINEERING

Course Name (English)	SOFTWARE ENGINEERING APPROVED
Course Code	CSC555
MQF Credit	4
Course Description	The subject provides an introduction to the discipline of Software Engineering. The emphasis is upon a broad coverage of the areas, since students will at this early stage not have adequate programming skills to tackle many of the topics in greater depth. The notion of a software system as a model or approximation of a desired system is introduced, and used as a way of describing such things as the software life cycle and its various models, programming by contract, design and testing issues, maintenance, reuse, project management and software legacy. Upon successful completion of the module, students will have demonstrated knowledge of the strengths and weaknesses of the software development life cycle and the ability to practice software engineering techniques for a given problem. Apply and reflect upon project management techniques used to solve a given problem.
Transferable Skills	Ability to communicate clearly and confidently, listen critically, ability to apply creative, imaginative and innovative thinking and ideas to problem solving, ability to investigate problems and provide effective solutions and ability to work professionally and contribute positively in a team
Teaching Methodologies	Lectures, Lab Work
CLO	CLO1 Describe the concept and software process in software engineering CLO2 Construct the activities in software process in order to deliver a good software product CLO3 Demonstrate the teamwork skill in software process activities
Pre-Requisite Courses	No course recommendations

Topics
1. Software Engineering Concepts 1.1) Introduction to Software Engineering 1.2) Introduction to Software Systems – Socio - Technical and Critical Systems
2. Software Development Paradigms 2.1) Software process models 2.2) Managing software development activities 2.3) Software development project planning and scheduling
3. Software Requirement 3.1) Functional and non-functional requirements 3.2) User and system requirements 3.3) Requirements elicitation, analysis and validation 3.4) Requirements management 3.5) Software requirements document
4. Software design 4.1) Software design process 4.2) Software architectural designs
5. Software Testing 5.1) Software testing 5.2) Testing strategy and process 5.3) Software quality assurance 5.4) Software quality factor

6. Software maintenance and evolution
6.1) Software maintenance
6.2) Software evolution

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	Four assignments will be given to the students based on four fundamental activities in software process.	20%	CLO2
Group Project	Presentation of the software product, artifact and document	10%	CLO3
Quiz	Three quizzes will be given to the students	10%	CLO1
Test	Test1	10%	CLO1
Test	Test2	10%	CLO1

Reading List

Recommended Text

- **Ian Sommerville 2015, *Software Engineering*, 10 Ed., Addison-Wesley [ISBN: 978-013394303]**

Reference Book Resources

- **Seidl, M., Scholz, M., Huemer, C., Kappel, G. 2015, *UML @ Classroom: An Introduction to Object-Oriented Modeling,*, 1 Ed., Springer [ISBN: 978-3319127]**
- **Bruce R. Maxim, Roger S. Pressman 2014, *Software Engineering: A Practitioner's Approach*, 8 Ed., McGraw-Hill Higher Education [ISBN: 978-007802212]**
- **Frank Tsui, Orlando Karam, Barbara Bernal 2016, *Essentials of Software Engineering*, 4th Edition Ed., Jones & Bartlett Learning [ISBN: 978-128410600]**
- **Rod Stephens 2015, *Beginning Software Engineering*, 1st Edition Ed., Wrox [ISBN: 978-812655537]**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources