

Full Title:	Software Process Quality
Language of Instruction:	English
Module Code:	SWRE C8019
Credits:	10
Valid From:	Semester 1 - 2014/15 (September 2014)
Module Delivered in	No Programmes
Module Description:	Students completing this module will understand and be able to describe different processes for software development, describe a problem situation, select an appropriate process to solve a particular problem, implement that process, design a software quality plan, understand and compare process maturity models, implement parts of the CMMI, have an understanding of the field of computing as a profession and be able to write a research-type technical working papers.
Learning Outcomes:	
<i>On successful completion of this module the learner should be able to</i>	
<ol style="list-style-type: none"> 1. Describe a problem context. 2. Identify a suitable process for a particular problem 3. Demonstrate an understanding of the differences between agile and plan-driven approaches. 4. Implement a process from start to end. 5. Be able to design a software quality plan. 6. Understand process maturity models. 7. Implement parts of the CMMI. 8. Have an understanding of the field of computing as a profession within the context of a larger society. 9. Be able to write short, research-type, technical working papers. 	

Module Content & Assessment

Indicative Content
Context Analysis Systems Thinking - Soft Systems Methodology
Linking Context to Software Development Processes Characteristics of development processes - Generic Processes - Plan-Driven Processes
Agile Methods Characteristics of Agile Methods (Ams) - Extreme Programming, Scrum - Topical Research (e.g. scaling, distribution)
Process Implementation Follow a development method from start to finish - Reflection on application of method - Comparison with other methods
Process Tailoring Tailoring Processes - Agile vs Plan-driven approaches
Process Patterns Types of Process Patterns - Organizational Patterns Process Pattern Documentation
Software Quality Definitions, Characteristics, Quality Plan, Metrics
Risk Management Risk Identification, Risk Assessment, Risk Assessment & Decision Making, Risk Control
Process Maturity and Assessment Capability Maturity Model Integration (CMMI), ISO 9000/2000, Implement parts of the CMMI., Informal Assessment approaches
Professionalism & Ethics Issues of ethical conduct, Codes of conduct and practice, Professional development

Assessment Breakdown	%
Course Work	50.00%
End of Module Formal Examination	50.00%

Full Time

Course Work							
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Marks Out Of</i>	<i>Pass Marks</i>	<i>Assessment Date</i>	<i>Duration</i>
Class Test	Two class based examinations will examine the content covered in the module. A class examination will take place at the mid point and end of this module. Each will be worth 10%.	1,2,3,5,6,8	20.00	0	0	n/a	0
Project	Each student group will participate in a group project. An oral examination will accompany submission of the project.	1,2,3,4	15.00	0	0	n/a	0
Written Report	Each student will deliver a short research-style paper on a selected topic.	2,3,6,7,9	15.00	0	0	n/a	0

No Project

No Practical

End of Module Formal Examination							
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Marks Out Of</i>	<i>Pass Marks</i>	<i>Assessment Date</i>	<i>Duration</i>
Formal Exam	A formal written exam will be conducted at the end of the year.	1,2,3,5,6,7,8	50.00	0	0	End-of-Semester	0

DKIT reserves the right to alter the nature and timings of assessment

Module Workload & Resources

Workload: Full Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	No Description	2.00	Every Week	2.00
Practical	No Description	1.00	Every Week	1.00
Directed Reading	No Description	3.00	Every Week	3.00
Independent Study	No Description	3.00	Every Week	3.00
Total Weekly Learner Workload				9.00
Total Weekly Contact Hours				3.00

This course has no Part Time workload.

Resources

Recommended Book Resources

- Mike Cohn 2009 2009, *Succeeding with Agile: Software Development Using Scrum*, 1 Ed., Addison Wesley [ISBN: 0321579364]
- Moreira M. 2013, *Being Agile: Your Roadmap to Successful Adoption of Agile*, APRESS [ISBN: 143025839X]
- Aherne D. 2008, *CMMI Distilled: A Practical Introduction to Integrated Process Improvement*, 3 Ed. [ISBN: 0321461088]

Supplementary Book Resources

- Ian Sommerville 2010, *Software Engineering*, 9 Ed., Addison Wesley [ISBN: 9780137035151]
- Mike Holcombe, 2008, *Running an Agile Software Development Project: Practical Solutions*, Wiley-Interscience [ISBN: 978-0470136690]
- Beck K., Andres C. 2005, *Extreme Programming Explained : Embrace Change*, 2 Ed., Addison Wesley [ISBN: 978-0321278654]

This module does not have any article/paper resources

Other Resources

- Website: InternetCMMI
<http://www.sei.cmu.edu/>
- Website: InternetComputing journal
<http://www.acm.org/>