APPROVED

DTAI H3013: Object Oriented Analyses & Design

Module Details

Module Code:	DTAI H3013
Module Long Title:	Object Oriented Analyses & Design APPROVED
Banner Title:	
Version:	1
Indicative NFQ level:	Level 7
Valid From:	Semester 2 - 2017/18 (January 2018)
Language of Instruction:	English

ECTS Credits::	5

ISCED Code:	0710 - Engineering and engineering trades not further defined or elsewhere classified

Module Type
No Module study modes listed

Current Coordinator::	Paul Stacey

Module Coordinators:	Paul Stacey (01 January 2018 to ---)

School Responsible:	Blanchardstown Campus (BL)

Campus:	Blanchardstown

Module Overview	In this module learners will gain an appreciation of Object Oriented analysis and design techniques, an awareness of the role methodologies play in software development, a comprehensive understanding of systems designed using UML; competence in the application of the above techniques to realising Java based software solutions.

Indicative Syllabus
1. Introduction to Java programming 1.1) Java Platform Overview, Java programming fundamentals, IDEs for Java (Eclipse)
2. Java Application development (GUI applications, events, Applets, etc.) 2.1) GUI applications, events, Applets, etc. Java for mobile application development (android)
3. Detailed OOP concepts and techniques 3.1) Analysis Design techniques e.g. requirements gathering, Functional, Structural and Behavioral Modelling, statecharts, class diagrams, sequence diagrams, event loops, The Unified Modelling Language; Implementation of OO concepts in Java
4. Software Lifecycles 4.1) History of software engineering, The waterfall lifecycle and variants e.g. the V-lifecycle, agile: scrum Other lifecycle models – e.g. RAD, UP, etc
5. Quality Management 5.1) Defining quality, McCall's Quality Factors, Trade-offs, Metrics, Measurements, Quality Assurance, ISO/IEC25000 (SQuaRE), Object Oriented Patterns and anti-patterns, Design by contract, Open-closed principle, Liskov substitution Principle
6. Ethical and Professional standards in Software Development 6.1) Study and application of the IEEE-CS/ACM Software Engineering Code of Practice of Ethics and Professional

Learning Outcomes	
Upon successful completion of this module the learner will be able to	
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MLO1	Have a working knowledge of the major phases in Object Oriented methods of analysis and design
MLO2	Apply OO methods of analysis and design through working with tools that support the OO approach.
MLO3	Have an understanding of OOP principles
MLO4	Apply Java programming techniques.
MLO5	Appreciate and comply with the IEEE-CS/ACM Software Engineering Code of Practice of Ethics and Professional Practice.

Requisites		
Requisite Type	***Module Title***	***Type***
No requisites exist.		

Module Content & Assessment

Assessment Breakdown	%
Other Assessment(s)	100.00%

Assessments

No Formal Examination

Other Assessment(s)

Assessment Type	Practical/Skills Evaluation	**% of Total Mark for Module**	25
Indicative Week	n/a (Inactive)	**Learning Outcomes**	1,2,3,4
Semester	Not Yet Determined	**Assessment Threshold:**	
Assessment Role		**Assessment Authenticity**	
Pass/Fail	No		

Assessment Description
Learners will work their way through a series of tasks which will help develop the learners OO Analysis & Design skills.

Assessment Type	Case Study	**% of Total Mark for Module**	10
Indicative Week	n/a (Inactive)	**Learning Outcomes**	5
Semester	Not Yet Determined	**Assessment Threshold:**	
Assessment Role		**Assessment Authenticity**	
Pass/Fail	No		

Assessment Description
Learners will examine ethical failures in real-world case studies and retrospectively apply the ACM/IEEE code of ethics to examine how the outcomes may have been different.

Assessment Type	Journal/Reflective Journal	**% of Total Mark for Module**	15
Indicative Week	n/a (Inactive)	**Learning Outcomes**	1,3,5
Semester	Not Yet Determined	**Assessment Threshold:**	
Assessment Role		**Assessment Authenticity**	
Pass/Fail	No		

Assessment Description
Learners will maintain an ongoing reflective journal

Assessment Type	Project	**% of Total Mark for Module**	20
Indicative Week	n/a (Inactive)	**Learning Outcomes**	1,2,3,4,5
Semester	Not Yet Determined	**Assessment Threshold:**	
Assessment Role		**Assessment Authenticity**	
Pass/Fail	No		

Assessment Description
Mini-project 1 – Working individually learners will analysis, design and implement a software solution to a given problem

Assessment Type	Project	**% of Total Mark for Module**	30
Indicative Week	n/a (Inactive)	**Learning Outcomes**	1,2,3,4,5
Semester	Not Yet Determined	**Assessment Threshold:**	
Assessment Role		**Assessment Authenticity**	
Pass/Fail	No		

Assessment Description
Mini-team-project 2 – Working in a team of 2 or 3 learners will analysis, design and implement a software solution to a given problem

Reassessment Requirement

No repeat examination
Reassessment of this module will be offered solely on the basis of coursework and a repeat examination will not be offered.

Module Activity

Full Time hours per semester	
Activity Type	*Duration (Hours)*
Studio	50
Self Directed	50
Hours (up to 100 for 5 ECTS credits)	100.00

Recommended Reading List

Recommended Book Resources

Kathy Sierra & Bert Bates/Mike Loukides. Head First Java, 2nd. O'Reilly, [ISBN: 978-059600920].

Alexander Shvets. Design Patterns Explained Simply, https://sourcemaking.com/design-patterns-ebook.

This module does not have any journal article/paper resources

This module does not have any other resources

Review

Module Extra Information

Editor(s)

Editor
Maria Donohue
Paul Stacey
Mark Deegan

Affiliated Programmes

Programme Code	Programme Title	Programme Version
TU719	Bachelor of Science in Design, Technology & Innovation	2
TU719	Bachelor of Science in Design, Technology & Innovation	3
TU812	Bachelor of Science (Honours) in Design, Technology & Innovation	2
TU812	Bachelor of Science (Honours) in Design, Technology & Innovation	3

Status Log

No Status Log Information