MULTIMEDIA UNIVERSITY®

COURSE INFORMATION

1 .	**Name of Course**	Object-Oriented Analysis and Design
2 .	**Course Code**	TCP2201
3 .	**Type of Course** **(e.g. : Core, major, elective etc.)**	Speciaization Core
4 .	**Synopsis**	The course introduces students to using object-oriented analysis and design methods when developing software. Content covered includes approaches for analyzing and designing an application, system, or business by applying object-oriented programming, as well as using visual modeling throughout the development life cycles. Design patterns are also introduced to familiarise students with tried and tested software architectures.
5 .	**Version** **(State the date of theSenate's approval - previous and the current approval date)**	Current: January 2018 Previous: June 2016
6 .	**Name(s) of Academic Staff**	Soo Wooi King, Ian Chai, Ku Day Chyi, Angeline Pang Nyuk Khee
7 .	**Semester and Year Offered**	Trimester 1 (Gamma)
8 .	**Credit Value**	4
9 .	**Pre-Requisite**	TCP1201 Object-Oriented Programming and Data Structures

10 . **Objective of the course in the programme:**

To equip students with knowledge of fundamental principles of object-oriented analysis and design techniques and its effects on the implementation of a software system

11 . **Justification for including the course in the programme:**

To provide students with object-oriented analysis and design concept for large scale programming or application development

12 .

Course Learning Outcomes (CLO)		**Domain**	**Level**
CLO1:	Explain object-oriented concepts	Cognitive	2
CLO2:	Interpret the analysis and design of an object-oriented software	Cognitive	3
CLO3:	Examine object-oriented analysis and design by using the latest UML notation	Cognitive	4
CLO4:	Employ design patterns towards the solving of object-oriented design problem	Cognitive	3

13 . **Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:**

Course Learning Outcomes (CLO) (Must tally with CLOs in item 12)	**Programme Learning Outcomes (PLO)**												**Teaching Methods**	**Assessment Method**
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12		
CLO1	✓	✓											Lectures, Tutorials	Assignments, Quizzes, Tests
CLO2			✓										Lectures, Tutorials	Assignments, Quizzes, Tests
CLO3			✓										Lectures, Tutorials	Assignments, Final exam
CLO4		✓		✓	✓								Lectures, Tutorials	Assignments
Total	**1**	**2**	**2**	**1**	**1**								*Indicate the relevancy between the CLO and PLO by ticking "✓" the appropriate relevant box (This description must be read together with standards 2.1.2, 2.2.1, and 2.2.2 in Area 2 – pages 16 & 18 of COPPA 2.0)*	

14 . **Transferable Skills:**

Transferable skills : Creativity in problem solving.
How is it developed : Through open ended group assignments implementing object-oriented methodology
Assessment : Assignment presentation, prototype demonstration and written report

15 . **Distribution of Student Learning Time (SLT)**

	Course Content Outline	****CLO**	**Teaching and Learning Activities**				**Guided Learning (NF2F)***	**Independent Learning (NF2F)***	**Total SLT**
			Guided Learning (F2F)*						
			***L**	***T**	***P**	***O**			
1	**Review on Object Oriented Concepts** What is Object Oriented, Models, Classes, Objects, Encapsulation, Abstraction, Inheritance, Polymorphism.		4	4				8	16
2	**Object Oriented Analysis** Overview of analysis, Analysis Object Model and Dynamic Model, Entity, Boundary and Control Objects, Generalization and Specialization		2	4			4	6	16
3	**Object Oriented System Design** Overview of design, Subsystem and classes, Services and subsystem interfaces, Coupling and cohesion, Layers and partition		4	8			8	12	32
4	**UML and Object Oriented Analysis and Design** Overview of UML, Use Case Diagrams Class Diagams, Interaction Diagrams Statechart Diagrams, Activity Diagrams		6	6				12	24
5	**Introduction to Design Patterns** Reuse concepts, Selecting Design Patterns, Heuristics for selecting design pattern, examples of design patterns (execution pattern, implementation pattern, structural design pattern etc)		6	6				12	24
								Total SLT	**112**

	SUMMATIVE ASSESSMENT			
	1. Continuous Assessment	**Percentage %**	**Total SLT**	
	Quizzes	10%	3	
	Assignments	30%	21	
	Test	20%	6	
		Total SLT for Continuous Assessment	**30**	
	2. Final Assessment	**Percentage %**	**Total SLT**	
			F2F	**ILT**
	Final Exam	40%	2	16
		Total SLT for Final Assessment (F2F + NF2F)	**18**	
	Grand Total	**100%**	**160**	
	****Indicate the CLO based on the CLO's numbering in Item 12.** ***L= Lecture, *T= Tutorial, *P= Practical, *O= Others, F2F*= Face to Face, NF2F*= Non Face to Face**			
16 .	**Identify Special Requirement to Deliver the Course (e.g., software, nursery, computer lab, simulation room):** Computer lab			
17 .	**Main References:** Grady B, Robert A. M, Michael W. E, Bobbi J. Y, Jim C, Kelli A. H, Object-Oriented Analysis and Design with Applications(Third Edition),Addison Wesley Professional, 2007			
18 .	**Additional References:**			
	Brett D. M, Gary P & David W, Head First Object-Oriented Analysis & Design, O'Reilly, 2009. Eric F, Elisabeth F, Bert B and Kathy S, Head First Design Pattern, O'Reilly, 2009. Bernd B, Allen H. D, Object Oriented Software Engineering Using UML, Patterns and Java, Pearson Prentice Hall, 3rd Edition, 2013			

Note:

	Cells shaded light grey contain formulas / fixed values. Edit these formulas only if needed.