COURSE OUTLINE

Department/ Faculty:	Software Engineering/Computing	**Page:**	1 of 6
Course code:	SECJ2154	**Academic Session/Semester:**	2020/2021/2
Course name:	Object Oriented Programming	**Pre/co requisite (course name and code, if applicable):**	Programming Technique 1 Programming Technique 2
Credit hours:	4		

Course synopsis	This course presents the concepts of object orientation and object-oriented programming techniques using Java programming language. It provides students with a thorough look at the basic constructs of the Java programming language such as its basic data types and operations. It also emphasizes on the use of standard Java APIs that allow students to develop text-based and GUI applications. It will also provide the programming techniques on exception handling and input/output files. At the end of this course, students should be able to use the basic constructs in object-oriented programming and utilize the selected Java APIs			
Course coordinator	Dr Nur Eiliyah Wong			
Course lecturer(s)	**Name**	**Office**	**Tel No**	**E-mail (@utm.my)**
	Dr Nur Eiliyah Wong	N28A-2-01	0129050323	nureiliyah
	Ms Lizawati Mi Yusuf	N28-438-03	0127409224	lizawati
	Dr Zuraini Ali Shah			
	Dr Tarmizi Adam			
	Mr Norizam			
	Dr Bahiah			
	Dr Ruhaidah Samsudin			
	Dr Norsham Idris			
	Dr Mohamad Ashari Hj Alias			
	Dr Haza Nuzly Bin Abdull Hamed			
	Dr Muhammad Ariff			

Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching & Learning (T&L) methods and Assessment methods:

No.	Course Learning Outcome	*Program Learning Outcome	Weight (%)	**Taxonomies and generic skills	T&L methods	***Assessment methods
CLO1	Apply OOP concepts in problem solving and develop Java applications.	PO1 (Knowledge Understanding)	40	C3	L,T	T2,F,Q

Prepared by:		Certified by:	
Name:	Norsham Idris (Course Owner)	Name:	PM. Dr.Radziah Mohamed (Director of Software Engineering)
Signature:		Signature:	
Date:	24 August 2017	Date:	

CLO2	Develop Java applications that leverage the object oriented features of the Java language such as encapsulation, inheritance and polymorphism in a given time frame.	PO3 (Problem Solving)	50	P4	L,P	A,T1,LE
CLO3	Work in a team to develop a medium to complex program as a group mini project using Java programming language.	PO5 (Thinking Skill)	10	P4	P	PR, Pre

*Program Learning Outcome
PO1 - Ability to acquire and apply theory and principles of computer science and equip with social science and personal development knowledge.
PO3 - Ability to design and construct computer programs using standard approaches.
PO5 - Ability to work effectively in a team

**Taxonomies and Generic Skills
*** LE – Lab exercise, Q – Quiz, A – Assignment, T1 – Test 1, T2-Test 2, F – Final Exam, PR – Mini Project, Pre – Presentation
L – Lecture, T – Tutorial, P – Practical

Details on Innovative T&L practices:

No.	Type	Implementation
1.	Blended learning	Combining both online and face to face learning. ● Online learning (30%-70% of the course content is delivered online & Independent Study through E-learning) ● Face to face learning (Active Learning-Conducted through in-class activities).
3.	Project-based learning	Conducted through study assignment and mini projects. Tasks are given in sequential steps throughout the semester. Students in a group of 3-4 are given a case study that requires them to use object oriented programming to solve certain problems efficiently.

Weekly Schedule:

Week 1 14/3– 18/3	**Chapter 1 Introduction to Object-oriented concepts and a general overview of Java API** ● Object oriented definition ● Object oriented concept
Week 2 21/3 – 25/3	**Chapter 1 (continued)** ● Classes in Java ● Java Basics ● Creating Java Programs ● Java Variables and data types 23 March (Tuesday) – Hari Keputeraan Sultan Johor (JB)

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Week 3 28/3 – 1/4	**Chapter 2: Introduction to Classes and Objects (QUIZ 1)(LE 1)** • Instance Fields, Accessor and Mutator Methods • Constructors • UML class diagram • Static Class Members • Passing and returning Objects to/from Methods
Week 4 4/4 – 8/4	**Chapter 3 : Enumerated Type, Wrapper Class and Java Package(A1)** • Enumerated Types • Garbage Collection • Wrapper Classes • Packages and import Statements
Week 5 11/4 – 15/4 **Week 6** 18/4 – 22/4	**Chapter 4: Arrays** Defining One-Dimensional Array **(TEST 1) 24 Apr 2021 (10 am, Saturday) until Array** • Array Lists • Passing Arrays As Arguments to Methods • Returning Arrays from Methods • String Arrays • Arrays of Objects • Defining Two-Dimensional Array 13 April (Tuesday) – Awal Ramadhan (JB)
Week 7 25/4 – 29/4	**Chapter 5: Vectors & Collections** Vector **(QUIZ 2)** (LE2) • Array Lists • Vector 29 April (Thursday) – Hari Nuzul Al-Quran (KL) 1 May (Sat) – Labour Day
Week 8 2/5 – 6/5	**Chapter 6: Class Relationships (A2)** • Association • Aggregation • Composition
9/5 – 13/5	**MID-SEMESTER BREAK (W9)** **13 & 14 May (Thursday & Friday) – Hari Raya Aidilfitri**
Week 10 16/5 – 20/5	**Chapter 7: Inheritance** • Introduction to Inheritance • Protected Members • The Object Class • Calling the Superclass Constructor • Chains of Inheritance • Overriding Superclass Methods
Week 11 23/5 – 27/5	**Chapter 8: Polymorphism (TEST 2) 29 May 2021 (10am, Saturday) until Chap 5: Vector** • Introduction to Polymorphism • Abstract Classes and Abstract Methods • Interface and implements 26 May (Wednesday) – Hari Wesak

Week 12 30/5 – 3/6	**Chapter 9: Exception Handling (LE3) (QUIZ 3)** ● Introduction to Exceptions ● Checked vs Unchecked exceptions ● Throwing Exceptions
Week 13 6/6 – 10/6	**Chapter 10: GUI Applications, Event-Driven Programming and User Interface** (LE4) ● The Swing and AWT Class Hierarchy ● The event-driven programming ● Creating User Interface ● Applets
Week 14 13/6 – 17/6 **Week 15** 20/6 – 24/6	**Group Project Demo/Presentations**
27/6 – 1/7	**REVISION WEEK (1 WEEK)**
4/7 – 22/7	**EXAM WEEK SEM 2 (3 WEEKS)** 20 July (Tuesday) – Hari Raya Haji

Transferable skills (generic skills learned in course of study which can be useful and utilised in other settings):

Team working and Presentation

Student learning time (SLT) details:

Distribution of student Learning Time (SLT) Course content outline	Guided Learning (Face to Face)				Teaching and Learning Activities: Guided Learning Non-Face to Face	Teaching and Learning Activities: Independent Learning Non-Face to face	TOTAL SLT
CLO	**L**	**T**	**P**	**O**			
CLO 1	21h	15h	9h		3h	15h	**63h**
CLO 2	11h	9h	13h		3h	10h	**46h**
CLO 3	2h		8h		3h	5h	**18h**
Total SLT	**34h**	**24h**	**30h**		**9h**	**30h**	**127h**
Grand Total SLT							**160h**

L: Lecture, T: Tutorial, P: Practical, O: Others

No	Continuous Assessment	PLO	Percentage	Total SLT
1	Assignments (2)	3	10	**As in CLO2 6h**
2	Lab Exercises (4)	3	10	**As in CLO2 8h**
3	Quiz (3)	1	10	**As in CLO1 1.5h**
4	Test 1	3	15	**As in CLO2 2h**
5	Test 2	3	15	**As in CLO2 1.5h**
6	Mini Project	5	5	**As in CLO3 9h**
7	Presentation	5	5	**As in CLO3 2h**
	Final Assessment	**PLO**	**Percentage**	**Total SLT**
1	Final Exam	1	30	**As in CLO1 3h**
Grand Total SLT				**160h**

Special requirement to deliver the course (e.g: software, nursery, computer lab, simulation room):

Software: JAVA SDK (latest version)

Learning Resources:

Main references:

Norazah Yusof, Radziah Mohamad, dan Nor Bahiah Hj.Ahmad. Object Oriented Programming Using Java. 7th Edition. 2014. Penerbit UTM.

Additional references:

1. Y. Daniel Liang, Introduction to Java programming. Pearson, 2018.
2. Paul J. Deitel & Harvey M. Deitel, Java How to Program. Pearson, 2017.
3. Tony Gaddis, Starting out with Java - From Control Structures through Objects. Pearson Education, 2015.
4. Walter Savitch & Kenrick Mock, Absolute Java. Pearson Education, 2015.
5. Joyce Farrel, Java Programming. Cengage Learning Asia Pte Limited, 2019.

Academic honesty Learning resources and plagiarism:

Copying of work (texts, lab results etc.) from other students/groups or from other sources is not allowed. Brief quotations are allowed and then only if indicated as such. Existing texts should be reformulated with your own words used to explain what you have read. It is not acceptable to retype existing texts and just acknowledge the source as a reference. Be warned: students who submit copied work will obtain a mark of **zero** for the assignment and exams and disciplinary steps may be taken by the Faculty. It is also unacceptable to do somebody else's work, to lend your work to them or to make your work available to them to copy.

Other additional information (Course policy, any specific instruction etc.):

1. Attendance is compulsory and will be taken in every lecture session. Student with less than 80% of total attendance is not allowed to sit for final exam.
2. Students are required to behave and follow the University's dressing regulation and etiquette all the timel.
3. Exercises and tutorial will be given in class and some may be taken for assessment. Students who do not do the exercise will lose the coursework marks for the exercise.
4. Assignments must be submitted on the due dates. Some points will be deducted for late submissions. Assignments submitted **three days** after the due date will not be accepted.
   Make up exam will not be given, except to students who are sick and submit medical certificate confirmed by UTM panel doctors. Make up exam can only be given within one week of the initial date of exam.

Disclaimer: