



Teaching Plan
FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

COMPUTER GAME PROGRAMMING II

BITE 1523

SEMESTER 2

SESSION 2014/2015

BITE 1523 COMPUTER GAME PROGRAMMING II (3, 2, 2) Type of course: P

1.0 LEARNING OUTCOMES

Upon completion of this course the student will able to:

- i. Describe the different abstract data type & algorithms used in game programming and the effects towards performance (C2, A2).
- ii. Apply structured data and algorithm in game application that requires data structures(C3, CTPS1)
- iii. Produce program codes by applying suitable type of data structures and algorithms to solve game programming problems. (CS1,P3).

2.0 SYNOPSIS

This course covers the topics in data structure and basic algorithm using C++ language which applied in games application. It includes the algorithms of sorting, searching, and indexing which are always used in games and for the data used in games, the data structure such as linked-list, tree, queue, stack and graph will be emphasized during the program development. This subject require the student to have a background in C++ programming techniques.

3.0 PRE-REQUISITE

C++ Programming (BITE1513)

4.0 PRACTICAL

Microsoft Visual C++ will be used as the tool for practical session. Students will attend the laboratories for constructing programs using programming techniques that they have learnt in BITE 1513 as well as applying the algorithms and data structure they have learnt during the lecture.

5.0 REFERENCES

- [1] Ron Penton, "Data structures for Game Programmers", Premier Press. 2003
- [2] Tony Gaddis, "Starting Out with C++, From Control Structures Through Objects", Pearson, 2010.
- [3] Allen Sherrod, "Data Structures and Algorithms for Game Developers", Course Technology PTR, 2007
- [4] Malik, D. S., "Data Structures Using C++". Course Technology, Cengage Learning, 2011
- [5] Adam Drozdek, "Data Structures and Algorithms in C++", Course Technology, 2011.

6.0 IMPLEMENTATION METHOD

- i) Lecture
 - 2 hours per week for 14 weeks (Total = 28 hours)
- ii) Practical
 - 2 hours per week for 14 weeks (Total = 28 hours)

7.0 COURSE EVALUATION

8.0 Assessment Method	LO1	LO2	LO3	Scheme, Rubric/guideline
Quiz (2) = 5%	Q1(3%)	Q2(2%)		
Project 1 = 10%		P1(5%)	P1(5%)	
Lab Assessment = 10%		(5%)	(5%)	
Project 2 = 10%			P2(10%)	
Presentation (1)= 5%	5%			
Lab Test (2) = 20%		LT1(10%)	LT2(10%)	
Mid Term (1) = 10%	(5%)	(5%)		
Final (1) = 30%	(18%)	(12%)		
Total	31%	39%	30%	

8.0 STUDENT LEARNING TIME (SLT)

LEARNING ACTIVITIES	STUDENT LEARNING TIME (BITE 1523)											
	GUIDED LEARNING TIME						INDEPENDENT LEARNING TIME					
	OFFICIAL CONTACT HOURS	FREQ	TOTAL	GUIDED LEARNING HOURS	FREQ	TOTAL	SELF STUDY HOURS	FREQ	TOTAL	ASSESSMENT TIME	FREQ	TOTAL
Lecture	2	14	28	-	-	-	2	14	28	-	-	-
Laboratory + Report	2	14	28	-	-	-	1	14	14	-	-	-
Tutorial	0	0	0	-	-	-	0	0	0	-	-	-
Quiz	-	-	-	-	-	-	0.5	2	1	0.25	2	0.5
Theoretical Test (Midterm)	-	-	-	-	-	-	2	1	2	1	1	1
Lab Test	-	-	-	-	-	-	2	1	2	1	1	1
Discussion	-	-	-	-	-	-	-	-	-	-	-	-
Mini Project - Group	-	-	-	-	-	-	4	1	4	-	-	-
Mini Project - Individual	-	-	-	-	-	-	4	0	0	-	-	-
Assignment - Group	-	-	-	-	-	-	2	1	2	-	-	-
Assignment - Individual	-	-	-	-	-	-	2	1	2	-	-	-
Presentation - Group	-	-	-	-	-	-	1	1	1	0.5	1	0.5
Presentation - Individual	-	-	-	-	-	-	1	1	1	0.5	1	0.5
Final	-	-	-	-	-	-	8	1	8	2	1	2
TOTAL	56		0			65			5.5			
GRAND TOTAL	126.5											
TOTAL CREDIT	3.1625											

9.0 DETAILED SYLLABUS AND TEACHING PLAN

Week	Session	Contents	References	Delivery Method
1	Lecture 1	Chapter 1: Concept of OOP with C++		Lecture
2	Lecture 2	Chapter 2: Templates, Introduction To Data Structures & Algorithms Analysis And Basic Algorithm Analysis		Lecture
3	Lecture 3 Lab 1	Chapter 3: Arrays, Bitvector And Multidimensional Array Lab 1 - Arrays, Bitvector And Multidimensional Array Quiz 1 – Chapter 1 - 2		Lecture Lab Quiz
4	Lecture 4 Lab 2	Chapter 4: Linked List Part 1 Lab 2 - Linked List Part 1		Lecture Lab
5	Lecture 5 Lab 3	Chapter 5: Linked List Part 2 Lab 3 - Linked List Part 2 Project 1 Release – Chapter 1 – 5		Lecture Lab
6	Lecture 6 Midterm	Chapter 6: Stack Midterm Test – Chapter 1 - 5		Lecture Test
7	Lecture 7 Lab Test 1	Chapter 7: Queue Lab Test 1 – Stack and Queue		Lecture Test

8	Mid Semester Break			
9	Lecture 8 Lab 4	Chapter 8: Hash Tables Lab 4 – Hash Tables Project 1 Submission Project 2 Release		Lecture Lab
10	Lecture 9 Lab 5	Chapter 9: Recursion and Trees Lab 5 – Recursion and Trees		Lecture Quiz 2
11	Lecture 10 Lab 6	Chapter 10: Binary Trees and Binary Search Trees Lab 5 – Binary Trees		Lecture Lab
12	Lecture 11 Lab Test 2	Chapter 11: Graphs and Heaps Lab Test 2 – Binary Trees Project 2 Submission		Lecture Test
13	Lecture 12 Demo Part 1	Chapter 12: Sorting Data and Random Numbers		Lecture Presentation
14	Lecture 13 Demo Part 2	Revision on BITE 1523		Lecture Presentation
15	Lecture 14 Demo Part 3	Revision on BITE 1523		Lecture Presentation

16		REVISION WEEK		
17,18		FINAL EXAM		

GAME PROGRAMMING II (BITE 1523)

Matriks LO Kursus Lawan PO Fakulti & Taksonomi

Bil	LO Kursus	Matriks LO Kursus Lawan PO Fakulti									Matriks LO Kursus Lawan Tahap Taksonomi																										
		PO Fakulti (Pembangunan Permainan Komputer)									Kognitif (K)						Psikomotor (P)							Afektif (A)													
		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	1	2	3	4	5	6	7	1	2	3	4	5									
1	Describe the different abstract data type & algorithms used in game programming and the effects towards performance (C2, A2).	x	x				x				x	x															x	x									
2	Apply structured data and algorithm in game application that requires data structures(C3, CTPS1)	x	x								x	x	x														x	x	x								
3	Produce program codes by applying suitable type of data structures and algorithms to solve game programming problems. (CS1,P3).	x	x				x																			x	x	x									
Subject: Computer Game Programming II		x	x				x				x	x	x													x	x	x									

Matriks LO Lawan Kemahiran Insaniah (LO & KI)

Bil	LO Kursus	LL			CS								CTPS							ES				TS					EM			LS			
		1	2	3	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	1	2	3	4	1	2	3	4	5	1	2	3	1	2	3	4
1	Describe the different abstract data type & algorithms used in game programming and the effects towards performance (C2, A2).																																		
2	Apply structured data and algorithm in game application that requires data structures(C3, CTPS1)												x																						
3	Produce program codes by applying suitable type of data structures and algorithms to solve game programming problems. (CS1,P3).				x																														
	Subjek: Pengaturcaraan Permainan Komputer Lanjutan				x							x																							

PENGESAHAN PERANCANGAN MENGAJAR

Disediakan oleh ;

Disahkan oleh ;

.....
Nama : HAMZAH ASYRANI SULAIMAN
Jawatan : PENSYARAH
Cop :

.....
Dekan/TimbalanDekan(Akademik)/KetuaJabatan
Cop :

Tarikh : _____

Tarikh : _____

**PEMANTAUAN PELAKSANAAN PERANCANGAN MENGAJAR
(CUTI PERTENGAHAN SEMESTER)**

Ulasan/Komen :

Disemak oleh ;

.....
Dekan/TimbalanDekan(Akademik)/KetuaJabatan
Cop :

Tarikh: _____

**PEMANTAUAN PELAKSANAAN PERANCANGAN MENGAJAR
(MINGGU KE-16 SEMESTER)**

Ulasan/Komen :

Disemak oleh ;

.....
Dekan/Timbalan Dekan(Akademik)/Ketua Jabatan
Cop :

Tarikh: _____