

Teaching Plan

FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI UNIVERSITI TEKNIKAL MALAYSIA MELAKA

PROGRAMMING I

DITP1113 SEMESTER 1 SESI 2020/2021

DITP 1113 PROGRAMMING I (3, 2, 2)

TYPE OF COURSE: P

EDITION: 1

UPDATED: 01-10-2020

1.0 LEARNING OUTCOMES

Upon completion this course, students will be able to:

- i. Express solution of a problem with suitable tool, programming techniques and structures. (C2, A2)
- ii. Discover program codes in troubleshooting program and problem solving. (C3, CTPS1)
- iii. Construct computer program codes by applying suitable programming techniques and structures. (C3, P4)

2.0 SYNOPSIS

This course covers the introductory topics in structured programming language. It includes the introduction to computers and programming as well as the fundamentals of programming problem. Data types and operators, selection, repetition, function are among the topics covered in the course.

3.0 PRE-REQUISITE

None

4.0 PRACTICAL

Students will attend the laboratories for constructing programs using programming techniques that they have learnt.

5.0 REFERENCES

- [1] Gaddis, T., Walters, J., Muganda, G., (2011), "Starting Out with C++: Early Objects: International Version 7th Edition", Pearson Education International.
- [2] Gaddis, T., (2018), "Starting Out with C++: From Control Structures Through Objects 8th Edition", Pearson Education International.
- [3] Malik, D.S (2011), "C++ Programming from Problem Analysis to Program Design 5th Edition", Cengage Learning.
- [4] Liang, Y. D.(2010), "Introduction to Programming with C++ 2nd Edition", Pearson Education International.
- [5] Friedman, Koffman (2011), "Problem Solving, Abstraction and Design using C++ 6th Edition", Pearson.

6.0 COURSE IMPLEMENTATION

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

6.0 COURSE EVALUATION

Assessment Method	Percentage	LO1	LO2	LO3	Scheme, Rubric/ guideline
Quiz (4)	5%	Q1(1.25%) Q2(1.25%) Q3(1.25%) Q4(1.25%)			AnsQuiz1.docx AnsQuiz2.docx AnsQuiz3.docx AnsQuiz4.docx
Lab Test (3)	30%			T1(10%) T2(10%) T3(10%)	AnsLabTest1.docx AnsLabTest2.docx AnsLabTest2.docx
Lab Assessment	10%		LA (10%)		AnsLabAssmt.docx
Assignment (Group)	10%			A(10%)	AnsAssgn.docx
Mid Term	15%	M1(10%)	M2(5%)		MTScheme.docx
Final	30%	F1(15%)	F2(15%)		FEScheme.docx
TOTAL (=100%)	100%	30%	30%	40%	

7.0 STUDENT LEARNING TIME (SLT)

8.0

		Guid		Leai me	rning		Ind	eper	ıdar	nt Le	earn	ing		А	ssess	men	t Time	
Week	CLO	L	Т	Р	0	L	Т	P	0	F	T	Α	0	F	Т	Α	0	SLT
W1	1	2		2		1	0	1		0	0	0	0					6
W2	1	2		2		1	0	1		0	0	0	0					6
W3	1	2		2		1	0	1		0	0	0	0					6
W4	1	2		2		1	0	1		0	0	0	0					6
W5	1	2		2		1	0	1		0	0	2	0					8
W6	1	2		2		1	0	1		0	6	0	0		1.5			13.5
W7	3	2		2		1	0	1		0	4	0	0		1			11
W8						1	0	1		0	0	0	0					6
W9						1	0	1		0	0	4	0					10
W10	2	2		2		1	1 0 1 0 0 0 3									9		
W11	2	2		2		1	0	1		0	0	0	0					6
W12	2	2		2		1	0	1		0	0	0	0					6
W13	2	2		2		1	0	1		0	0	0	0					6
W14	3	2		2		1	0	1		0	4	0	1		1		0.25	12.25
>W14										8	0	0	0	2				10
Overall		28	0	28	0	14	0	14	0	8	14	6	4	2	3.5	0	0.25	121.75
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9.0 DETAILED SYLLABUS AND TEACHING PLAN

Week	Session	Contents	References	Delivery Method
1	Lecture 1	Introduction to Computer & Programming Language	[1,2,3,4,5]	Lecture
		 Lecture content Introduction to Computer and its application area, computer components, hardware and software Introduction to programming language: Machine Language, Assembly Language, High Level Language How does a computer run a program Write, edit, compile and link a program 		
	Lab 1	 Laboratory content Compile and execute basic structured program. Example programs and exercise 		Lab
2	Lecture 2	Problem Solving	[1,2,3,4,5]	Lecture
		 Lecture content Introduction to problem solving Basic techniques of problem solving: Pseudo Code, Flow Chart Introduction to function Develop algorithm 		
	Lab 2	 Laboratory content Developing algorithm using pseudo code and flow charts. Using MS Visio to draw flowchart 		Lab
3	Lecture 3	Basic Elements of Structured Program	[1,2,3,4,5]	Lecture
		 Lecture content Basic elements of structured language Character set, Token: keyword, identifiers, operator & punctuation, input, output Data type and its declaration & statement Operator – assignment operator, arithmetic operators, relational operators and logical operators Formatting Input/Output 		
	Lab 3	 Laboratory content Develop structured program. Exercise on operators, data types and input/output statements 		Lab

4	Lecture 4	Problem Solving using Function (Part 1) Lecture content Divide and conquer Types of function Prototype and function declaration Function call without returning value Laboratory content Developing program using function	[1,2,3,4,5]	Lecture Lab
		Defining and calling functions with variables (functions of type void)		
5	Lecture 5	Problem Solving using Function (Part 2) Lecture content Local and global variables Divide and conquer with variables Pass by value function Simple assignment statements Function call with returning numeric and Boolean values	[1,2,3,4,5]	Lecture
	Lab 5	Laboratory content Practice knowledge learned during lecture		Lab
6	Lecture 6	Problem Solving using Function (Part 3) Lecture content Using Reference Variables as Parameters (Pass by reference)	[1,2,3,4,5]	Lecture
	Lab 6	Laboratory content Practice knowledge learned during lecture		Lab
7	Lecture 7	Problem Solving using Function (Part 4) Lecture content Combination of different type of variable (Pass by value and reference) Standard library functions	[1,2,3,4,5]	Lecture
	Lab 7	Laboratory content Practice knowledge learned during lecture		Lab
8		Mid term examination		

		The first half of the semester is intended for students to understand PROGRAM STRUCTURE. The later part is to develop understanding of LOGICAL THINKING.		
9	Lecture 8	Problem solving using Selection Control Structure Lecture content Relational operator The control structure The selection structure: if The selection structure: ifelse Combine conditional statement (and or) Laboratory content Programs on selection control techniques	[1,2,3,4,5]	Lecture
10	Lecture 9	Problem solving using Selection Control Structure : nested ifelse Lecture content Linear and non-linear nested if	[1,2,3,4,5]	Lecture
		■ Programs on selection control techniques based on lecture content		Lab
11	Lecture 10	Problem solving using Selection Control Structure : nested ifelse Lecture content Problem solving using switch case Transformation between if else and switch case	[1,2,3,4,5]	Lecture
		Laboratory content Programs on selection control techniques based on lecture content		Lab
12	Lecture 11	Problem solving using Repetition Control Structure	[1,2,3,4,5]	Lecture
	Lab 11	Lecture contentThe while loopLaboratory content		
		Programs on repetition control structure while loop		Lab
13	Lecture 12		[1,2,3,4,5]	Lecture

	Lab 12	Problem solving using Repetition Control Structure Lecture content The dowhile Laboratory content Programs on repetition control structure do while loop		Lab
14	Lecture 13	Problem solving using Repetition Control Structure Lecture content The for control structure	[1,2,3,4,5]	Lecture
	Lab 13	Laboratory content ■ Programs on repetition control structure for		Lab
15	Lecture 14 Lab 14	Problem solving using Repetition Control Structure Lecture content The nested loops Conditional Statement within repetition Laboratory content Programs on repetition control structure based on lecture content	[1,2,3,4,5]	Lecture Lab
16		REVISION WEEK		
17-18		FINAL EXAMINATION WEEK		

10.0 MATRIX OF LEARNING OUTCOMES

SUBJECT vs PROGRAM OUTCOME (PO)

				PROG	GRAM (OUTCOM	IE (PO)		
Subject									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
DITP									
1113	X	X			X				

LEARNING OUTCOME (LO) vs PROGRAM OUTCOME (PO)

LO				PROC	RAM (OUTCOM	IE (PO)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
LO1	X								
LO2		X							
LO3					X				

LEARNING OUTCOME (LO)

	ETH (G G C T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T C G T
LO1	Illustrate program codes by tracing and debugging in troubleshootin program applications (C2)
LO2	Construct computer program codes by applying suitable programmin tools, structures and techniques. (P3)
LO3	Apply suitable programming structures and techniques in problem solv (A3,CTPS1)

SUBJECT vs SOFT SKILLS

											SOF	T SKI	LLS										
Subject	communication skill critical thinking & problem solving					ing	te	am wo	rk	lifelo	ong lear	rning	entre	epreneu skills	rship		nics&mo		leade				
	CS1	CS2	CS3	CS4	CS5	CTPS1	CTPS2	CTPS3	CTPS4	CTPS5	TS1	TS2	TS3	LL1	LL2	LL3	ES1	ES2	ES3	EM1	EM2	EM3	LS1
DITP				_																			
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LEARNING OUTCOME (LO) vs SOFT SKILLS

											SOF	T SKI	LLS										
LO	communication skill critical thinking &						ing & pro	blem solvi	ing	te	am wo	rk	lifelo	ong lear	rning	entrepreneurship skills			ethics & moral professionalism			leade	
	CS1	CS2	CS3	CS4	CS5	CTPS1	CTPS2	CTPS3	CTPS4	CTPS5	TS1	TS2	TS3	LL1	LL2	LL3	ES1	ES2	ES3	EM1	EM2	EM3	LS1
LO1					1																		
LO2					1																		
LO3						X																	

SUBJECT vs TAXONOMY

								,	Taxonomy	y								
Subject		Α	ffectiv	e				Cogni	tive					Psy	chomo	tor		
	A1	A2	A3	A4	A5	C1	1										P6	P7
DITP																		
1113			X															

LEARNING OUTCOME (LO) vs TAXONOMY

	Taxonomy																	
LO	Affective					Cognitive						Psychomotor						
	A1	A2	A3	A4	A5	C1	C2	C3	C4	C5	C6	P1	P2	P3	P4	P5	P6	P7
LO1							X											
LO2														X				
LO3			X															
	·																	

TEACHING P	LAN APPROVAL
Prepared by;	Approved by;
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