SCHEME OF WORK

MARCH – JULY 2025

COURSE NAME	**: INTRODUCTION TO ALGORITHM DESIGN AND DEVELOPMENT**
COURSE CODE	**: CSC121**
LEVEL	**: DIPLOMA**
CREDIT UNIT	**: 3**
CONTACT HOUR	**: LECTURE (2 HOURS) & LAB (2 HOURS)**
PROGRAM	**: DIPLOMA IN COMPUTER SCIENCE (CDCS110)**
PART	**: 1**
FACULTY	**: COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS**
LECTURER	**: SITI SARAH BINTI MD ILYAS** **013 - 4586414** **B1 - 60**
ASSESSMENTS	**: QUIZ – 10%** **PRACTICAL TEST – 25%** **WRITTEN TEST – 30%** **GROUP PROJECT – 35%**

Course Learning Outcomes:

CLO1: Apply the concepts of computer systems, problem solving and algorithm design and development (C3)

CLO2: Display practical skills in algorithm design and developments for different types of programming control structures (P3)

CLO3: Demonstrate professional and ethical practices in tasks related to problem-solving solutions and algorithm developments (A3)

AKTIVITI PERKULIAHAN			
PERINGKAT PROGRAM	**AKTIVITI**	**TARIKH**	**TEMPOH**
Pra-Diploma / Diploma (Pelajar Part 1 Sahaja)	Minggu Interim		
	Cuti Minggu Interim		
Semua Pelajar	**Kuliah 1**	**24 – 30 Mac 2025** ***24 – 29 Mac 2025**	**1 Minggu** **(Online)**
	Proses Entrance Survey	24 Mac – 27 April 2025	4 Minggu
	Cuti Khas Perayaan	31 Mac - 5 April 2025 [Aidil-Fitri: 31 March – 1 April]	1 MInggu
	Kuliah 2	**7 April – 29 Mei 2025** ***6 April – 29 Mei 2025**	**8 Minggu**
	Cuti Pertengahan Semester/ Cuti Khas Perayaan	30 Mei – 8 Jun 2025 *30 Mei – 7 Jun 2025 [Pesta Menuai: 30 – 31 Mei] [Gawai: 1 – 2 Jun]	1 Minggu
	Kuliah 3	**9 Jun – 13 Julai 2025** ***8 Jun – 12 Julai 2025**	**5 Minggu**
	Student Feedback Online (SuFO)	23 Jun – 27 Julai 2025	5 Minggu
	Proses Exit Survey	23 Jun – 27 Julai 2025	5 Minggu
	English Exit Test (Speaking)	14 – 20 Julai 2025	1 Minggu
	Cuti Ulangkaji	14 – 20 Julai 2025	1 Minggu

SAM Block	Week	Topic	Description
1	1 24 – 30 March	**INTRODUCTION TO THE COURSE** • Ice breaking • Overview of OBE and course via lesson plan and syllabus contents	**Entrance survey**
		TOPIC 1: INTRODUCTION TO COMPUTER SYSTEMS • Computer Definition • Overview and History of Computers • Basic Components of the Von Neumann Architecture	
		Lab activity: Tutorial 1	
	31 March – 6 April	**SPECIAL BREAK**	**31/3 – 1/4 (Aidil Fitri)**
	2 7 - 13 April	**TOPIC 1: INTRODUCTION TO COMPUTER SYSTEMS** • Electronic Data and Instructions • System Unit: system board, microprocessor, RAM & ROM • Input/Output devices	**Entrance survey**
		Lab activity: Tutorial 2	
	3 14 – 20 April	**TOPIC 2: INTRODUCTION TO PROBLEM-SOLVING AND ALGORITHM DESIGN** • What is a problem and examples of problems: Simple Real-world problem/transaction • What is problem-solving? • Program development life cycle	**Entrance survey**
		Lab activity: • Group Project briefing (Guidelines, scoring rubrics and report template) • Introduction to software and installation: http://www.flowgorithm.org/download/	
	4 21 – 27 April	**TOPIC 2: INTRODUCTION TO PROBLEM-SOLVING AND ALGORITHM DESIGN** • Details of problem analysis: Input, Process and Output • Basic concepts of algorithm and algorithm presentation (pseudocode and flowchart): The basic structure/symbols in Pseudocode and flowchart	**QUIZ (10%)** **TOPIC 1 & 2** **Entrance survey**
		Lab activity	
	5 28 April – 4 May	**TOPIC 3: ALGORITHM DESIGN FOR SEQUENCE CONTROL STRUCTURE** • Understanding about data type, data, information • Arithmetic Operators, identifiers (variables and constants) • Assignment statements	**Labor Day (1 May)**
		Lab activity	
	6 5 – 11 May	**TOPIC 3: ALGORITHM DESIGN FOR SEQUENCE CONTROL STRUCTURE** • Analysis of simple problems (state problem objectives, input, process and output) • Algorithm development for sequence control structure (pseudocode and flowchart)	
		Lab activity	

2	**7** 12 – 18 May	**TOPIC 4: ALGORITHM DESIGN FOR SELECTION CONTROL STRUCTURE** • Analysis of problems requiring selection structure • Boolean values, relational operators, and expressions • Logical operators • Operator precedence **Lab activity**	**Wesak Day (12 May)** **Keputraan DYMM Tuanku Raja Perlis (17 May)**
	8 19 – 25 May	**TOPIC 4: ALGORITHM DESIGN FOR SELECTION CONTROL STRUCTURE** • Algorithm development for selection control structure (pseudocode and flowchart) **PRACTICAL TEST (25%) - TOPICS: 3 & 4**	
	9 26 – 29 May	**TOPIC 5: ALGORITHM DESIGN FOR REPETITION CONTROL STRUCTURE** • Analysis of problems requiring repetition control structure • Setting three requirements of a repetition structure: initialization, condition and updating **Lab activity**	
	30 May – 8 June	**MID TERM BREAK**	**30 – 31 May (Harvest Festival)** **1 -2 June (Gawai)** **7 – 8 June (Aidil Adha)**
3	**10** 9 – 15 June	**TOPIC 5: ALGORITHM DESIGN FOR REPETITION CONTROL STRUCTURE** • Algorithm development for repetition control structure (pseudocode and flowchart) **Lab activity**	
	11 16 – 28 June	**TOPIC 6: ALGORITHM DESIGN FOR PROGRAMS USING MODULES (FUNCTIONS)** • Analysis of problems requiring modules (functions) • Basic types of functions • Parameter passing: Passing-by-value and passing-by-reference. • Algorithm development for modular programming (pseudocode and flowchart) **Lab activity**	**WRITTEN TEST (30%)** **TOPICS: 2 – 5** **27 June (Awal Muharam)**
	12 23 – 29 June	**TOPIC 6: ALGORITHM DESIGN FOR PROGRAMS USING MODULES (FUNCTIONS)** • Algorithm development for modular programming (pseudocode and flowchart) **Lab activity**	**SUFO**
	13 30 June – 6 July	**TOPIC 6: ALGORITHM DESIGN FOR PROGRAMS USING MODULES (FUNCTIONS)** Algorithm development for modular programming (pseudocode and flowchart) **Lab activity**	
	14 7 – 13 July	**GROUP PROJECT PRESENTATION AND REPORT SUBMISSION (35%)** **TOPICS: 2 - 6**	**SUFO**
	14 – 20 July	**REVISION WEEK**	**SUFO**