

**CADANGAN SILABUS SAINS KOMPUTER
PROGRAM MATRIKULASI 2 TAHUN**

Semester 1

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
1. INFORMATION AND COMMUNICATION TECHNOLOGY AND SOCIETY				
1.1 Introduction to Information and Communication Technology 1.1.1 Overview of Information and Communication Technology (ICT) 1.1.2 ICT in everyday life	Define what is Information and Communication Technology Application of Information and Communication Technology in life	At the end of the lesson, students should be able to <ul style="list-style-type: none"> • Define what is Information and Communication Technology • Identify different applications of Information and Communication Technology in life 	Education, Business, Entertainment, Law, Sport, Medical, Transportation	1
1.2 Computer Ethics and Legal Issues 1.2.1 Definition 1.2.2 Privacy	a) Computer Ethics b) Code of Ethics c) Intellectual Property Authorized access: user authentication and verification	Define a) Computer Ethics b) Code of Ethics c) Intellectual Property <ul style="list-style-type: none"> • Pattern • Copyright • Trademark • Explain the importance of authentication and verification of users to access information system 	User ACM codes of Ethics : http://acm.org	1
1.2.3 Controversial Contents and Control	Controversial issue	<ul style="list-style-type: none"> • Identify different controversial issues surrounding application of ICT • Discuss the controversial issues related to the control of information accessibility 	a) Pornography Slander/Label b) Control example: - Filtering	

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
1.2.4 Computer Crimes:	Definition: Computer crime and Cyber law	<ul style="list-style-type: none"> • Give definition of computer crimes • Give examples of computer crime • Identify the Elements of Malaysian Cyber Law 	Examples of computer crimes: a) Fraud b) Copyright Infringement c) Theft d) Attacks e) Virus Malaysian Cyber Law	
1.3 Computer Security 1.3.1 Definition 1.3.2 Security threats: 1.3.3 Security Measures:	Computer Security Different types of security threats Ways to protect the safety and security of data in computer	<ul style="list-style-type: none"> • Define what is computer security • Identify different types of security threats • Identify different ways of protecting the safety and security of data in computers 	a) Malicious codes b) Hacking c) Natural/environment d) Theft a) Data backup b) Cryptography: encryption and decryption c) Antivirus d) Anti-spy ware e) Firewall f) Human aspects : awareness	1
1.4 Impact of ICT on society		Discuss the impact of Information and Communication Technology on society	Economy Politics	1

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
2. MULTIMEDIA				
2.1 Multimedia Concepts		At the end of the lesson, students should be able to :		3
2.1.1 Definition of multimedia	Definition of Multimedia	Define the meaning of multimedia		
2.1.2 Multimedia in various fields	Application of Multimedia in various field	Identify application of multimedia in various fields	Education Information Business, etc	
2.1.3 Interactivity of multimedia :	Linear Nonlinear	Differentiate mode of multimedia interactivity		
2.1.4 Medium of distribution :	Web CD DVD	Differentiate medium of distribution		
2.1.5 Multimedia elements	Different elements in multimedia application	Identify different elements in multimedia application	a) Text b) Audio c) Video d) Graphic e) Animation f) Interactivity	
2.2 Software				1
2.2.1 Authoring tools:	a) Time frame concept b) Icon concept	Differentiate different concept in multimedia authoring tools	a) Director b) Authorware	
2.2.2 Support software	Multimedia editor software	Apply different types of editor in multimedia presentation	a) Text editor b) Graphic and Image editor c) Audio editor d) Video and Animation editor	
2.3 Multimedia Development		At the end of the lesson, students should be able to :	Macromedia Director	13
2.3.1 User Interface	How the presentation should be	Identify principles in creating different types of	a) Children	

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
2. MULTIMEDIA				
Principles 2.3.2 Development team	revealed to the user Individual Group	user interface a) Identify individuals involved in multimedia production b) Identify the role of each individual in multimedia production	b) Adult a) Project Manager b) Multimedia Designer, c) Interface Designer, d) Writer, Video Specialist, e) Audio Specialist, f) Multimedia Programmer, g) Producer	
2.3.3 Multimedia production	a) Analysis b) Design and Develop c) Implementation d) Testing/ Evaluation e) Documentation f) Publishing (Packaging/Uploading) g) Maintenance	Identify steps involved in multimedia development Apply steps involved in multimedia development	Project Based Learning Graphic - Adobe Photoshop Animation – Flash and Swish Flash based Mini Project (1 minutes)	
2.4 Current and Future Development of Multimedia in Education	The use of multimedia in Education	Identify different types of multimedia use in education	Hardware and software requirement	1

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
3. INTERNET AND CONTEMPORARY COMPUTER ISSUES				
3.1 Internet		At the end of the lesson, students should be able to :		1
3.1.1 Introduction to the internet	<ul style="list-style-type: none"> a) What is internet and how it work b) History of the development of internet c) Operation of the internet 	<p>Define what is internet</p> <p>Discuss the history development of internet and how the internet operate</p>		
3.1.2 Determine internet address	Identification of individuals within the network	Determine internet address		
3.1.3 Expose to the World Wide Web (WWW)	<ul style="list-style-type: none"> a) How network pages functions b) General searching software c) Searching information through sites 	<p>Identify the function of network page</p> <p>Identify software used for searching information</p>		
3.1.4 Introduce other internet services	<ul style="list-style-type: none"> a) E-mail b) FTP c) Telnet d) Newsgroup e) IRC 	Differentiate types of internet services		
3.2 Web Page	<p>Develop WEB page (Example of language selection : html)</p> <ul style="list-style-type: none"> a) Concept b) Processes involved 	Develop web page using Web Page Authoring Tools		5
3.3 Cyber System (e..)	<ul style="list-style-type: none"> a) Introduce the history of the Cyber Systems (e...) b) Introduce the cyber system services 		<ul style="list-style-type: none"> a) E-government b) E-commerce 	1
3.4 Contemporary Issues on the ICT				1

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
3. INTERNET AND CONTEMPORY COMPUTER ISSUES				
3.4.1 To discuss computers issues related to the following:	<ul style="list-style-type: none"> a) Education b) Home c) Office d) Stress e) Assisting the disabled etc. 	Discuss contemporary issues on ICT		

Semester 2

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
4. COMPUTER SYSTEM				
4.1 System Concept		At the end of the lesson, students should be able to:		2
4.1.1 Overview of computer system	Cycle of Processes		Input → Process → Output	
4.1.2 Data Representation	How data is represented in computer	<ul style="list-style-type: none"> Explain how data is represented in computer 	01 on-off state (binary digit)	
4.1.3 Introduction to Binary coding: ASCII	Coding system used by machine in processing data	<ul style="list-style-type: none"> Identify the coding system used in processing data 	Examples of standard computer characters EBCDIC ASCII	
4.1.4 Data measurement	Measure the size of the data Hierarchy of Data Organization	<ul style="list-style-type: none"> Explain how the data are measured 	a) Bit b) Byte c) Kilobyte d) Megabyte e) Gigabyte	
4.1.5 Clock speed measurement	Measure how fast the processors work	<ul style="list-style-type: none"> Explain the unit of measurement used in a processor 	a) MHz b) GHz	
4.2 Hardware				2
4.2.1 Input devices	Devices use to bring data from outside into the computer system	<ul style="list-style-type: none"> Identify different types of input devices 	Keyboard, mouse, microphone, diskette, optical reader, scanner, Camera Video capture devices	
4.2.2 Output devices	Devices use to display, show the product as a result of process within the computer system	<ul style="list-style-type: none"> Identify different types of output devices 	Monitor, printer, speaker, plotter, storage etc	
4.2.3 Motherboard	Basic Component of motherboard	<ul style="list-style-type: none"> Identify basic components of a 	a) Intel / AMD / Motorola	

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
4. COMPUTER SYSTEM				
	a) Central processing unit (CPU) b) Expansion slots c) Expansion cards d) RAM slot e) Ports and Connectors	motherboard	b) PCI / AGP c) Display, Sound, Modem, Network etc d) SDRAM, e) Types of different port - USB, - Parallel, - Serial, - Com Port - Printer - Modem - Joystick	
4.2.4 Storage	a) Primary Storage	<ul style="list-style-type: none"> Identify different types of Primary Storage 	a) ROM / EPROM / EEPROM b) RAM	
	b) Secondary storage	<ul style="list-style-type: none"> Identify different types of Secondary Storage 	a) magnetic medium b) optical medium, c) memory card	
4.3 Installation and un-installation of Hardware and software				1
4.3.1 PC assembling	How personal computers are assembled	<ul style="list-style-type: none"> Connect the core component of a computer 	Zero Force Insertion – 1-1 matching	
4.3.2 Software	a) Operating system b) Application software c) Utility program	<ul style="list-style-type: none"> Identify different types of software 		
4.3.3 Plug and Plug Hardware	Removing Hardware using USB port from system	<ul style="list-style-type: none"> Identify the correct way of removing peripherals from the system 	Thumb Drive, Camera, Mass Storage Device	
4.4 Software				4
4.4.1 Operating System	a) Platforms	<ul style="list-style-type: none"> Identify different type of platform available in computing world 	a) Personal Computer Window, Linux, Mac	

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
4. COMPUTER SYSTEM				
4.4.2 Application Software:- types and usage			OS b) Minicomputer :Unix c) Mainframe d) Super computer	
	b) Functions	<ul style="list-style-type: none"> Differentiate the functions of operating system Identify types of interface in different operating system 	Why we need operating system Prompt GUI	
	a) Word processing - function	<ul style="list-style-type: none"> Identify different types of word processing usage 	Create flyers, brochures	
	b) Spreadsheet -function	<ul style="list-style-type: none"> Identify different types of spreadsheet usage 	Schedule, graph, calculation	
	c) Presentation - function	<ul style="list-style-type: none"> Identify different types of presentation usage 	Teaching, Paper Presentation, Marketing	
	d) Database Creating Database Table Query Form Report	<ul style="list-style-type: none"> Identify objects in a database Identify examples of databases <ul style="list-style-type: none"> field record data type field size set up relational database <ul style="list-style-type: none"> 2 tables Primary key Foreign key Advantages of database 	Student database, video database	
4.4.3 Utility Program:- types and usage	d) Graphics -function	<ul style="list-style-type: none"> Identify different types of graphics usage 	Photo Editing, create new graphic	
	a) File management	<ul style="list-style-type: none"> Copy, cut and paste Move, Delete and rename File or folder 	a) File and Folder Copy /Cut / Paste Move / Delete	

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
4. COMPUTER SYSTEM				
		<ul style="list-style-type: none"> Change the properties of the file 	Rename	
	b) Diagnostic	<ul style="list-style-type: none"> Use systems tools such as scan disk, defrag and disk cleanup 	b) Properties a) Scan disk b) Disk Defragmenter c) Disk Cleanup	
	c) File compression	<ul style="list-style-type: none"> Compress file using software such as WinZip and WINRAR 	WinZip files, WINRAR	
4.5 Current and Future Technologies	Open Source Software	<ul style="list-style-type: none"> Identify the application of Open Source Software 		1

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
5 PROGRAMMING				
5.1 Programming Concepts 5.1.1 Definition 5.1.2 Types of Programming Languages 5.1.3 Programming Language paradigm 5.1.4 Translator	Programming Language a) Low-Level Languages b) High-Level Languages a) Structured Based on procedures b) Object-oriented a) Assembler b) Interpreter c) Compiler	At the end of the lesson, students should be able to : Define programming language Differentiate between Low-level and High-level language Differentiate the language paradigm in programming Identify the function of different types of translator used in programming	BORLAND C++ C++, BASIC, Java, Php Assembly, machine C++, Java, html C C++, Java, Visual Basic, Definition of each translator	1
5.2 Approach in solving programming problem 5.2.1 Flow chart 5.2.2 Pseudo code	a. symbols in flow chart b. steps in building flow chart c. appropriate examples (sequence, selection, looping) a) General pseudo code format b) Steps in writing pseudo code c) appropriate examples (sequence, selection, looping)	Differentiate approaches in problem solving Identify the steps in flow chart Solve problem using flow chart a) Identify steps in building pseudo code. Solve problem using pseudo code.		4
5.3 Introduction to C++ 5.3.1 Introduction 5.3.2 Using Compiler	Introduce C++ a. comment b. # include instruction and header file c. Function d. Declaration e. Reserve words f. Input/Output console g. C++ statement Introduction to Compiler	a) Define and write comment including differentiating instructive statement b) Define and use instruction #include and header file, function, declare, reserve words, input/output console and C++ statement. c) Edit, compile, link and execute program d) Know and use the basics in Integrated Development Environment (IDE) in executing program		1

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
5 PROGRAMMING				
	a. edit, compile, link and execute b. Integrated Development Environment			
5.4 Data, Operator and expression 5.4.1 Data type 5.4.2 Operator 5.4.3 Expression	a. Types of basic data and constant and their usage <ul style="list-style-type: none"> • character set • identifier, variables and keyword • data type • declaration of data type • constants <ul style="list-style-type: none"> ⇒ Integer ⇒ String ⇒ Real numbers • Escape Sequence • Defining variables • Initializing variable b. Operation on variables and usable operators <ul style="list-style-type: none"> • <i>size of operator</i> • Operator <ul style="list-style-type: none"> ⇒ Arithmetic ⇒ Relation and logic ⇒ Assignment. • Hierarchy of operator c. Types of expression and output (with program example) <ul style="list-style-type: none"> • mixed mode expression and 	a) Identify basic data type and constant b) Differentiate basic data type and constants and their usage c) Clarify operations on variables and operators that can be used. d) Identify operator hierarchy e) Clarify usage of type of expression.		2

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
5 PROGRAMMING				
	<ul style="list-style-type: none"> cast • space and parenthesis 			
5.5 Control Structure 5.5.1 Sequence 5.5.2 Selection 5.5.3 Looping 5.5.4 Structured Problem Solving	a. Selection structure <ul style="list-style-type: none"> • If – else • nested if – else • switch b. Looping Structure <ul style="list-style-type: none"> • while • do-while • for c. Jump statement <ul style="list-style-type: none"> • break • continue • return 	a) use statements from the following selection structure <ul style="list-style-type: none"> • if – else • nested if – else • switch b) use statements from the following looping structure <ul style="list-style-type: none"> • while • do – while • for c) use statements from the following from jump structure <ul style="list-style-type: none"> • break • continue • return d) Decide appropriate control structure		5
5.6 Header file and functions 5.6.1 Standard Header file 5.6.2 Defining Header File	Types and usage of header files and function <ol style="list-style-type: none"> 1. iostream.h 2. ctype.h 3. string.h 4. stdlib.h 5. time.h 6. dos.h 7. math.h 	a) Use appropriate header file to carry out specific process b) Using special functions based on pre-defined header files		1
5.7 User Define Function	a) Define functions b) Pass argument to functions c) Call functions d) Return values from functions	a) Define functions and it's need in programming b) Define and declare functions in C++ c) Call the functions and pass argument to		2

TOPICS	SPECIFICATION	LEARNING OUTCOME	REMARK	LECTURE HOURS
5 PROGRAMMING				
	e) Prototype function	certain functions d) Return values from called function to main program / caller function		
5.8 Array	a) 1 dimensional array b) Write simple sorting program	Use array in C++ Declare 1 dimensional array Initialize 1 dimensional array Use Bubble sort		2

This document was created with Win2PDF available at <http://www.daneprairie.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.