COMPUTER STUDIES **SCHEME OF WORK** **YEAR 9 (Express)**

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Information System	Be able to explain what an information system is. Be able to draw a block diagram to explain how an information system operates.	Group Work: • Identify the data and devices involved in an information system in terms of input-process-output.	• explain what an information system is. • draw a simple block diagram to show how an information system works.	U6: (Pg 9 – 11) U10: (Pg 1-7) U14: (Pg 7) Online Resource: ICT system (Appendix 6)	Suggested Exercises U14: (Pg 22-23)
	Data VS Information	Be able to differentiate between data and information.	Discussion: • Examples of data and information. • Differences between data and information	• differentiate between data and information. • provide examples on o data o information	U3: (Pg 1-2) U10: (Pg 1-2) U13: (Pg 21) U14: (Pg 7) Online Resource: Data & Information (Appendix 6)	Suggested Exercises U10: (Pg 53 Q.3) U14: (Pg 11 Q.10)
	Bits and Bytes	Be able to differentiate various measurement of storage capacity in a computer storage device.	Discussion: • Comparison between Decimal and Binary Number system • Relationships between various measurements (bit, bytes, kilobyte, megabyte, gigabyte, etc)	• differentiate between Base-2 (Binary) and Base-10 (Decimal) Number System. • convert from one measurement to another (e.g. convert from kilobyte to bytes or bits and vise-versa)	U3: (Pg 1) U10: (Pg 31) U13: (Pg 23) U14: (Pg 25, 32-33) Online Resource: Bits & Bytes (Appendix 6)	Suggested Exercises U9: (Pg 14-15) U14: (Pg 36-37)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
	Bits and Bytes (Cont)	Be able to differentiate various measurement of storage capacity in a computer storage device.	Demo: • Show a table of ASCII codes. • The storage capacity of various storage devices.	• suggest a suitable measurement of storage capacity for any given permanent storage device.	U3: (Pg 1) U10: (Pg 31) U13: (Pg 23) U14: (Pg 25-33)	Suggested Exercises U9: (Pg 14-15) U14: (Pg 36-37)
1 week	Types of computers	Be able to categorize types of computers based on size. Be able to list characteristics of different types of computers.	Group Work: • To categorize computers based on size. • To list the characteristics of different types of computers.	• state the differences between desktop computers and notebook computers. • describe the characteristics of microcomputer, minicomputer, mainframe computer, supercomputers.	U1: (Pg 88-89, 97-98) U10: (Pg 11-12) U14: (Pg 9-10) Online Resource: Types of computers (Appendix 6)	Suggested Exercises U14: (Pg 11)
	Microprocessors	State the use of microprocessors in everyday life.	Group work: • Identify the use of microprocessors in embedded system. • Identify the data and devices involved in embedded system in terms of input-process-output.	• differentiate between microcomputer and microprocessors. • identify the data and devices involved in embedded computers in terms of input-process-output (e.g. mobile phone, washing machine, etc) • state the use of microprocessors in everyday life o digital cameras o digital watch o CCTV, etc	U10: (Pg 11-12) U14: (Pg 8-9) Online Resource: Embedded system (Appendix 6)	

COMPUTER STUDIES **SCHEME OF WORK** **YEAR 9 (Express)**

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Software	Be able to differentiate system software and application software.	Group work: • Identify various system software and application software. Demonstration : • Show some courseware developed by using authoring tools (e.g. Hyperstudio, Authorware)	• distinguish between system software and application software. • give examples of system software o Operating System e.g. DOS, Windows XP, etc o Utility programs e.g. antivirus, backup, etc o Translation programs (compilers and interpreters) • give examples of application software. o Word processing software o Electronic spreadsheet packages o Database management packages o Graphic packages o Desktop publishing packages o Presentation software o Web design software o Authoring tools software o etc	U6: (Pg 46 – 80) U10: (Pg 36 - 41) U14: (Pg 38 - 53) Online Resource: Software (Appendix 6)	Suggested Exercises U14: (Pg 41)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
2 weeks	Operating System	Be able to state the functions of operating system.	Demonstration: • Use of some DOS commands such as CLS, COPY, CD, MD, DIR etc. • Utility software: run any antidote software, anti spyware, error checking, defragmenting, etc.	• define operating system • state the tasks of OS o control the hardware o manage data files on the disk o run computer program o etc • state what utility software is and give examples.	U6: (Pg 48 - 53) U10: (Pg 36 – 38) U14: (Pg 42 - 53) Online Resource: Software (Appendix 6)	Checklist on DOS Commands Suggested Exercises U10: (Pg 42) U14: (Pg 51 - 52)
	User Interface	Be able to list the different types of user interface. Be able to use graphical user interface for file management.	Hands-On: • Create folders and sub-folders. • Move and copy folders.	• state the advantages and disadvantages of the different user interface o Command line interface o Menu driven interface o Graphical user interface (GUI) • create folders and sub-folders. • copy, move, list, delete, save, rename, retrieve and print files. • identify root directory and subdirectories. • state the use of subdirectories.	U1: (Pg 113-115) U6: (Pg 46 - 48) U10: (Pg 37- 38) U14: (Pg 44 - 49) Online Resource: User interface Create folders (Appendix 7)	Suggested Exercises U1: (Pg 119)
	Operating system Facilities	Be able to identify different operating system facilities.	Group Work: • Discuss the real time transaction processing in o airline booking system o online stock control system o etc	• explain batch OS, real-time OS (real-time transaction processing), online and offline OS, multi-access OS, network OS, multitasking OS, process-control OS.	U1: (Pg 107-110) U6: (Pg 82 - 83) U10: (Pg 74 -77) U14: (Pg 22, 267-268) Online Resource: Operating system (Appendix 7)	Suggested Exercises U1: (Pg 117)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Input devices	Be able to list the standard and specialist input devices and state the uses of these devices.	Group Work: • Discuss the different sensors that could be used to measure all aspects of the weather. • Discuss the devices to communicate with virtual reality systems.	• List and state the uses of standard and specialist input devices. o keyboard o point and touch devices e.g. mouse, touch sensitive screens. o video digitisers and scanners with the use of Analog to Digital Converter or A/D Converter or ADC) o Magnetic input devices - magnetic stripes by using magnetic encoder -magnetic ink by using magnetic ink character recognition (MICR). o optical mark reader (OMR) with multiple choice questions. o optical character recognition(OCR) o bar code reader, graphic tablets o light pens, microphones, MIDI o Sensors (temperature, sound, magnetism, radar, light), proximity sensors (pressure, touch, microwave) o special goggles and electronic gloves (for virtual reality system) o Speech recognition, etc	U1: (Pg 89-94) U6: (Pg 19 – 28) U10: (Pg 14-27) U14: (Pg 11 – 18) Online Resource: Input devices (Appendix 7)	Suggested Exercises U10: (Pg 27-29)
	Output devices	Be able to list the standard and specialist output devices and state the uses of these devices.	Group Work: • Discuss the input and output devices to help disabled people: o blind o limbless o etc	• list and state the uses of standard and specialist output devices o monitor o printer (laser printer, inkjet printer, dot matrix printer, plotter) o speakers o control devices, etc	U1: (Pg 94-97) U10: (Pg 14-27) U14: (Pg 18 -22) Online Resource: Output devices (Appendix 7)	Suggested Exercises U10: (Pg 27-29)

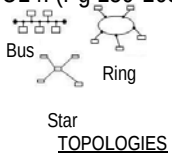
Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Data capture	Be able to differentiate manual, direct and automatic data capture methods with its advantages and disadvantages.	Group Work: • Discuss the use of turnaround documents. • Discuss the use of manual, direct and automatic data capture.	• describe the manual data capture (key to disk) • list different direct data capture methods with its advantages and disadvantages o Magnetic strips reader o Magnetic ink character recognition (MICR) o Optical Mark Recognition (OMR) o Bar code reader o Optical Character Recognition (OCR) o Speech recognition • describe the automatic data capture using signals o remote sensing, etc	U10: (Pg 46-50) U14: (Pg 231 – 233) Online Resource: Data capture (Appendix 7)	Suggested Exercises U10: (Pg 51) U14: (Pg 235 – 236)
1 week	storage media	Be able to state the function and characteristics of storage media.	Group Work: • Discuss the suitability of storage devices for different purposes. • Discuss the process of formatting a disk done by the operating system.	• state the functions and characteristics of storage media such as o RAM, o ROM, o CDROM, o CD-R/W, o DVD, USB o flash memory, o disks o tapes.	U1: (Pg 98-101) U10: (Pg 31-34) U14: (Pg 25 – 31) Online Resource: Storage media (Appendix 7)	Suggested Exercises U10: (Pg 35)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Mail merge	Be able to identify features in mail merge and to create a data source using Microsoft word	Hands-on: • Create and save a data source file in a tabular form containing names, addresses …	• create form letters, mailing labels, envelopes … • open, create data source table and save it.	U10: (Pg 245, 286) U11: (Pg 20-30) U14: (Pg 74 – 78) Online Resource: Mailmerge (Appendix 7)	Suggested Exercises U14: (Pg 76 - 78) Suggested
	Mail merge using word processing	Be able to create a document with variable fields. Be able to merge the data source to the document.	Hands-on: • Create a document with variable fields such as name, address, etc. • Merge the data source with the letter to produce personalize letters.	• create a document with different merged fields . • produce merged documents.		
1 week	Central Processing Unit	Be able to identify the main elements of the central processing unit.	Role play: • Students play the role of control unit, ALU and IAS to solve simple arithmetic problems.	• list and explain briefly the functions of the three main elements of CPU. o Control unit o Arithmetic and logic unit (ALU) o Immediate access store (IAS)	U6: (Pg 9 - 10) U10: (Pg 7 – 10) U14: (Pg 8) Online Resource: CPU (Appendix 7)	
	Peripheral device control	Be able to explain the communication between the computer and external devices and how this communication is controlled.	Demonstration: • A video clip to show how buffer works. Group Work: • Discuss the use of buffers in printers.	• define interrupts and interrupt priorities, spooling, polling, handshaking and checksums. • describe the use of buffers in printers.	U1: (Pg 115-116) U10: (Pg 165) U14: (Pg 20 – 21)	Suggested Exercises U1: (Pg 118)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Graphics packages	Be able to list main types of graphics packages. Be able to state the features of graphics packages.	Discussion: • Resolutions in graphics packages. • Comparison between bitmap and vector graphics.	• define pixels • list different type of graphic packages o Photoshop, MS Paint o CAD o etc • state the features of graphics packages • list the features of bit-mapped graphics and vector graphics	U10: (Pg 37) U13: (Pg 109-111) U14: (Pg 34 – 35, 80 – 83, 190 - 193) Online Resource: Graphics packages (Appendix 8)	Suggested Exercise: U10: (Pg 42 - 43)
	CAD (Computer-Aided Design)	Be able to state the features of CAD packages.	Demonstration: • 3D design produced using CAD software (3D Home Architect, Home Design) .	• list the features of CAD program • list CAD packages • list peripherals needed • state main applications of CAD • list advantages of using CAD	U6: (Pg22, 64, 66, 69) U10: (Pg205, 318) U13: (Pg (109 – 110) U14: (Pg 275) Online Resource: CAD (Appendix 8)	
	Computer Aided Manufacturing (CAM)	Be able to state the differences between Computer Aided Design and CAM.	Group work: Discuss advantages of CAD and CAM. Demonstration: Use video clips to view the application of CAD and CAM.	• state the differences between CAD and CAM. • identify the advantages of using CAD and CAM.	U14: (Pg 275 - 277) Online Resource: CAM (Appendix 8)	

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to …)	Resources	Assessment
1 week	Web Design	Be able to explain the purpose of designing a web page.	Demonstration: • shows some web designing packages. • show HTML codes. • show few websites which are personal, business, educational, news, entertainment and e-commerce.	• list examples of web designing packages • state the language used in designing website e.g.HTML • list the steps in designing a website	U5: (Pg 190 – 196) U10: (Pg 216 – 230) U14: (Pg 182, 199 –211) Online Resource: Web Design (Appendix 8)	
	Generic packages VS Specially-written packages	Be able to differentiate and provide advantages and disadvantages of generic packages and specially-written packages.	Group Work: • Various computing tasks carried out in different organisations, general office or at home are given to students. Identify which of the tasks are done using a generic software and which are done by a specially-written software. • Discuss the virtues and limitations of each type of packages.	• define and provide an example of a Generic package • define and provide an example of a Specially-written software • state advantages and disadvantages of each package. (Appendix 1 & 2)	U8: (Pg 28 & 32) U13: (Pg 106-107) U14: (Pg 39 – 41) Online Resource: Software (Appendix 8)	Suggested Exercise: U9: (Pg 28, 33)
	Integrated Packages	Be able to differentiate and provide advantages and disadvantages of integrated packages.	Demonstration: • Load and run an integrated package. Discussion: • Discuss the features in an integrated package.	• define and provide an example of an Integrated package • state the different packages you would expect in an integrated package. • state advantages and disadvantages of an integrated package. (Appendix 3)	U10: (Pg 39) U13: (Pg 110-111) U14: (Pg 39) Online Resource: Integrated packages (Appendix 8)	Suggested Exercise: U10: (Pg 43)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Spreadsheets: Basic features	Be able to create a spreadsheet with functions and formulae.	Hands-on: • Create a class mark sheet.	• enter text, numbers and formulae. • convert marks to grades. • arrange ranking. • create charts.	U4: (Pg 220-238) U14: (Pg 88 – 101) Online Resource: Spreadsheets (Appendix 8)	Suggested Exercise: U14: (Pg 90 - 102)
2 weeks	Spreadsheets: Business Applications	Be able to use spread sheet for business applications such as payroll and invoicing.	Hands-on: • Produce a workbook with at least 3 worksheets of data. Use the workbook for processing Payroll and/or invoicing using FORMULAE and various spreadsheet functions such as VLOOK and HLOOK. Try to make use of CONDITION(IF) as well.	• use VLOOK and HLOOK functions appropriately. • create a payroll program • produce an invoice program for any business. • use macro to record a number of keystrokes for future use.	U4: (Pg 220-238) U14: (Pg 104 – 118) Online Resource:	Suggested Exercise: U14: (Pg 105 – 109, 113 – 117)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
2 Weeks	Network	Be able to identify the topologies of Network.	Group work: Distinguish what is LAN, MAN and WAN. Draw diagrams of Star, Ring and Bus topologies. * Types of networks: LAN, MAN & WAN. * Basic Topologies of network: Bus, Star & Ring.	• state the basic characteristics of LAN, MAN and WAN. • draw network topologies such as Ring, Star and Bus. • identify the advantages of each topology.	U10: (Pg 117-120) U14: (Pg 159-163)  Online Resource: Network (Appendix 8)	Suggested Exercise: U14: (Pg 165-166)
	Internet & Intranet	Be able differentiate Internet & Intranet relating to WAN, LAN and MAN. Be able to name some applications of Internet and Intranet. Be able to state the advantages of using broadband over dial up connection. Be able to state the advantages and disadvantages of wireless technology	Group Work: Discuss the differences between Internet and Intranet. Discuss the popular services provided by an ISP. (Internet, Email, Message boards, On-line shopping…etc.) Hands-on: Browse the Internet and some school websites.	• list some features of Internet and Intranet. • use a search engine to look for specific educational resource. • use some of the services provided by an ISP. • list some advantages of using broadband. • list the advantages and disadvantages of wireless technology.	U14: (Pg 166 - 184) Online Resource: Internet (Appendix 8)	Suggested Exercise: U14: (Pg 185-188)

COMPUTER STUDIES **SCHEME OF WORK** **YEAR 9 (Express)**

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
2 weeks	Programming languages	Be able to describe machine code and assembly language. Be able to differentiate between low level language and high level language. Be able to discuss between the different types of translators.	Demonstration: • Show students different types of translators and programming languages.	• describe what is machine code • describe the differences between high-level languages and low-level languages. • discuss the advantages and disadvantages of assembly languages • differentiate between object code and source code. • discuss the differences between the three types of translation programs; assemblers, compilers and interpreters.	U10: (Pg 39-41) Online Resource: Programming Language (Appendix 8)	
	LOGO Programming	Be able to write simple procedures using LOGO commands.	Task: • Draw geometrical shapes like square, rectangle, circles, pentagon, octagon etc using LOGO instructions and procedures.	• use some LOGO commands • use LOGO instructions to draw simple diagrams • define a procedure and the use of variables	U10: (Pg 295-297) Online Resource: LOGO Programming (Appendix 8)	

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
2 weeks	Algorithm & Pseudo-code	Be able to write an algorithm to solve a problem.	Task: Students to design a program in pseudo code: o to prepare your favorite recipe o to create a shopping list. Task: Students to dry run simple algorithms to evaluate the output.	• write a correct algorithm to solve a problem. • design a program in a structured manner • dry run an algorithm to evaluate its output.	U1: (Pg 44-48) U6: (Pg 113) U10: (Pg 167) Online Resource: Algorithm & Pseudo-code (Appendix 9)	Suggested exercise: U1: (Pg 48)
	Structured or Modular programming	Be able to break down a task into manageable sub-tasks.	Group Work: Discuss the advantages of Modular programming. Task Students to write their own pseudo-code using the three program structures: o sequence o selection o repetition e.g. to explain how a vending machine works.	• develop top-down design skill • use the three program structures sequence, selection and repetition appropriately	U1: (Pg 49-53) U10: (Pg 89-90, 167-168) Online Resource: Structured or Modular programming (Appendix 9)	Suggested exercise: U1: (Pg 168)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
2 weeks	Source Document	Be able to design a proper source document.	Discussion: • Distribute samples of source documents that are badly designed. • Discuss their weaknesses and suggest improvements. • Distribute samples of the corrected or improved source documents. • Discuss what are the changes made and the advantages of having the changes done.	• list factors to be considered when designing a source document. • design a source document for a given application • provide reasons for coding data • suggest suitable codes for a particular data item in a given application. • design on-line form using combo boxes, drop-down lists, etc. (Appendix 4)	U3: (Pg 24) U8: (Pg 46-47) U10: (Pg 44-51) U13: (Pg 41-44)	Suggested exercise: U10: (Pg 44, 52-54)
	Data Checking	Be able to differentiate between the different data checking methods. Be able to identify suitable data checking methods for different data items.	Discussion: • Consequences of error (GIGO) • Two types of error • Differences between Data Verification and Data Validation. • Examples of different Data verification methods. • Examples of different Data validation methods. • Case Study: Students to suggest suitable validation checks for different data items. • Case Study: Calculation of check digit - ISBN barcode	• explain the concept of GIGO (Garbage In Garbage Out) • state two types of error • define the term verification • identify the various data verification method. • define the term validation • identify the various data validation method. • suggest suitable validation checks for different data items with reasons provided. • calculate check digit e.g. modulus-11	U3: (Pg 25) U8: (Pg 48-49) U10: (Pg 8, 55-60) Online Resource: Data checking (Appendix 9)	Suggested exercise: U9: (Pg 46-48) U10: (Pg 61)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Types of data	Be able to differentiate between the different types of data and process of data conversions.	Discussion: • Give example of Digital data and Analogue data. • Comparison between the graphs of these two types of data. • ADC and DAC.	• define the terms: digital and analogue data • describe the function of an ADC and a DAC with examples • define the term sound synthesizing • state advantages and disadvantages of analogue display and digital display	U3: (Pg 61) U13: (Pg 27-28,169-170) U10: (Pg 81-82) Online Resource: Analogue & digital data (Appendix 9)	Suggested exercise: U13: (Pg 37 Q.1)
	File access Methods	Be able to suggest file access methods for different types of storage media.	Discussion: • Students to suggest the type of file access methods used for various storage media.	• differentiate between serial access, random access, sequential access and indexed sequential access. • suggest the file access method used in a given storage medium	U3: (Pg 28) U8: (Pg 50-51) U10: (Pg 66-67) U13: (Pg 85-86) Online Resource: File access methods (Appendix 9)	Suggested exercise: U9: (Pg 50-51)
	File update processes	Be able to identify different file update processes.	Case Study: • For a given application e.g. a student record system, suggest an occurrence when a record would be inserted, deleted or amended?	• differentiate between insertions, deletions and amendments in a file. • provide examples of insertions, deletions and amendments for a particular application.	U10: (Pg 68-69) U13: (Pg 87)	Suggested exercise: U13: (Pg 91-92)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	File Maintenance	Be able to differentiate between a master file and a transaction file. Be able to provide procedures for backup methods .	Discussion: • Case study of a file used for a particular application e.g. a patient master file. Students to suggest possible changes to the data. • Where are the updates stored? • Which file needs to be updated? • How is the updates carried out? • How to recover a lost master file?	• state the purpose of a master file and a transaction file • provide an example of a master file and a transaction file • provide the reason for sorting a transaction file before updating a master file • define the term merging based on the updating process • define the term file generation and file dumping.	U3: (Pg 28) U8: (Pg 52-53) U10 (Pg 63-69) U13: (Pg 87-89)	Suggested exercise: U9: (Pg 52-53)

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
2 weeks	Building a database	Be able to identify the different types of database. Be able to describe the use of fixed and variable length fields. Be able to create a simple database. Be able to edit and format a database structure and setting up a primary key.	Group work: Discuss on: o different types of databases o the advantages and disadvantages of fixed and variable length fields. Hands-on: • Create a database on: o employee details • Open a database and edit its structure and certain field's properties. Task: Students to visit a library that uses database. Interview a librarian to find out more about the database (e.g. information stored in the database, how is the database searched and updated).	• compare the advantages and disadvantages of using a manual database and a computerized database • differentiate between the two main types of databases (flat file database and relational database) • identify the hierarchy of data (Files, Records, Fields, Characters) and data types • differentiate between fixed and variable length fields • create a database table • format a field's properties (date/time format currency, number format, etc) • assign a field as a primary key in a database. • insert validation rules and input masks. (Appendix 5)	U10: (Pg 63-66) U14: (Pg 119-134) Online Resource: Data types Access Tutorials (Appendix 9)	Suggested exercise: U11: (Pg 69-81, 82-106) U14: (Pg124-126, 128-129, 131-135)
1 week	Form and Report	Be able to design a form and a report using wizard features.	Hands-on: • Create a form and a report for a database.	• identify the criteria for designing a good form for data-entry • create and edit form and report in database • insert logos and pictures	U14: (Pg 149-151)	

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
1 week	Query	Be able to create a query statement to display records with special conditions	Hands-on: • Create simple queries	• search and display information in a database by using: o filter by form o filter by selection • use logical and relational operators in queries (is equal to (=), is less than (<), is greater than (>), is not equal to (<>), AND, OR, NOT) • create complex searches that use two or more search conditions	U5: (Pg 216-223) U14: (Pg 135-142)	Suggested exercise: U14: (Pg 142-149, 151-154)

APPENDIX 1

SUGGESTED CHECK LIST ON GENERIC VS SPECIALLY-WRITTEN SOFTWARE

Suggested tasks for Generic VS Specially-Written Software		Tick here
Examples of Generic Software		
	Wordprocessing software	
	Database generators	
	Spreadsheet software	
	Desktop Publishing	
	Presentation software	
	Web browsers	
	Email software	
	Graphics software	
	CAD software	
Examples of Specially-Written Software		
	Stock-control system	
	Payroll including time-keeping	
	Aircraft Navigation	
	Hotel bookings	
	Traffic light control	
	Student database system	
	Insurance premium calculations	
	Weather forecasting	

APPENDIX 2

SUGGESTED CHECK LIST ON GENERIC VS SPECIALLY-WRITTEN SOFTWARE (Con't)

Advantages of Generic Software		
	Can be used right after purchased	
	Well tested and documented	
	Supported by training courses, on-line help and publication	
	Mass production cut down cost	
Disadvantage of Generic Software		
	Need to be customized to meet user's requirement.	
Advantages of Specially-written Software		
	Custom-made to meet the user's requirements	
	Special training and support can be provided by the developers	
Disadvantage of Specially-written Software		
	Not as well tested as those software available in the market	
	Substantial amount of development time	
	Due to fewer sales; software is expensive	

APPENDIX 3

SUGGESTED CHECK LIST ON STAND-ALONE VS INTEGRATED PACKAGES:

Suggested check list for Stand-alone VS Integrated package		Tick here
Examples of Stand-alone Packages		
	Macromedia Flash	
	Microsoft Word	
Examples of Integrated Packages		
	Microsoft Works	
Advantages of Stand-alone Packages		
	More powerful features are available	
Disadvantages of Stand-alone Packages		
	Different menus and icons in each application	
	Cumbersome to export and import data among different applications	
Advantages of Integrated Packages		
	Data produced in one program can be easily transferred for use in another program.	
	Cheaper than buying separate packages	
	Similar menus and icons in each program.	
Disadvantages of Integrated Packages		
	To cut down cost not all features are available compared to a Stand-alone package	

APPENDIX 4

SUGGESTED CHECK LIST ON SOURCE DOCUMENT:

Suggested check list for Source Document:		Tick here
Factors to be considered when designing a form		
	Make sure all necessary details would be collected	
	Heading to describe the form usage	
	Clear instructions should be given	
	Layout should be in a logical sequence	
	Sections for Data Subject and Data User	
	Data Coding	
Reasons for coding data		
	Faster data-entry	
	Reduces sizes of the files	
	Solve problems of variations in spellings	

APPENDIX 5

GUIDELINE FOR TEACHERS:

SUGGESTED CHECK LIST ON CREATING A DATABASE:

TOPIC	TASKS	SUGGESTED TASKS AND DIRECTION OF ACTIVITIES	TICK HERE:
DATABASE MANAGEMENT SYSTEM USING MICROSOFT ACCESS: BASIC LEVEL	Create database	Open and create a database	
		Save it and create a database structure for that particular database. Close the database.	
		Close the database	
	Customizing the structure and field properties	Open a database and change it's structure	
		Identifying fields like numbers, date/time and currency. Edit the properties like the validation rule, the null value and the format, the primary key settings.	
		Save the edited structure and proceed with data-entry based on the new structure. Watch the different.	
	Design a form using wizard	Create a form using wizard	
		Specify a suitable style, background and layout for the form	
		Save the form	
	Design a report using wizard	Create a report using wizard	
		Specify a suitable style, background and layout for the records to be printed	
		Making use the sorting features	
		Save the report.	
	Design a query statement with different criteria	Create a query statement using relational and logical operators	
		Insert or add a database / table ← ADD and CLOSE	
		Specify the criteria for searching particular information	
		Create a form to display the answers for the query created earlier	
		Create several queries on different searching criteria.	
DBMS: INTERMEDIATE LEVEL	Tables and relationships	Create a new table in a database created earlier.	
		In the new table specify a primary key and save the table.	
		Activate the database, if it is closed. Click at the TOOL menu and choose Relationship at the option list. A dialog box [Relationships] appear on the screen, which contain the two tables. Link the primary key of the first table to the second table. Tick the small box [Enforce Referential Integrity] in the edit relationships dialog box, and finally click the CREATE button.	
		Create a One-Many link, simply drag a field name (in one table) to more than one fields in the second table Create a many-One link, simply drag multiple fields (in the first table) to a single field in the second table.	
	Working with Multiple tables	Activate a database, click on query tab and create a NEW query. In the show table window, select and add the tables (more than one) to the query. Click and drag the table fields to the field row of the design area, save the query or click RUN icon to see the result.	
		Activate a database, click on Forms tab then on New. In the Form wizard dialog box, select one table first and select some fields from the available fields' column. Then select another table and select other fields from the available fields' column. Then click NEXT button. Choose appropriate layout and Finish	
		Activate a database, click on reports tab, select Report Wizard, select the fields from several tables then click Next, and finally Finish button after saving.	
	Sharing Information between application	Copy access data to word: use the copy and paste method OR using the Export method, select a query table then click at the File → EXPORT option list.	
		Linking access table to Word document: In word, select View menu -> Toolbars → database. Click the INSERT DATABASE icon and GET DATA. In the open data source window select Ms Access database and the database's file, choose a table in it. Select a style and finally OK. Click (tick it) INSERT DATA and ALL option. Check the INSERT DATA AS field. With the steps above, the lnk to the database file is now established.	
		Creating a Mail merge : Type a letter or a certificate in word. Select Tools menu → Mail merge. Click CREATE button and choose Form letters. Select active window, click GET DATA → Open Data Source. State the access table to get the data form. Select and insert the FIELDS into the appropriate place in the document (i.e letter or certificate). Click MAIL MERGE HELPER ico and the MERGE… Select ALL (records to be merge) and click MERGE button.	
		Export Access Data To Excel: 3 methods: (1). Use copy & Paste Method : Open access table, highlight it and click on the COPY icon, start Excel and Paste it. (2), Export Method : start and open an access table, select File → Export, in the export table 'payroll' to window, select the file type Microsoft Excel and click SAVE. (3). Office Links: Open the access table, select Tools menu → Office links. Select Analyze It With Ms Excel. A copy appear in excel	

APPENDIX 6

Web Links

Information/ICT System
http://www.teach-ict.com/gcse/theory/infosystems/miniweb/index.htm
http://www.bbc.co.uk/schools/gcsebitesize/ict/system/0ictsystemsrev2.shtml

Data, Information
http://www.teach-ict.com/gcse/theory/datainfo/miniweb/index.htm

Bits & Bytes
http://www.teach-ict.com/gcse/hardware/bits_and_bytes/students/s_bitsandbytes.htm
http://www.technologystudent.com/comps/comp4.htm

Binary_Decimal
http://www.wikihow.com/Convert-from-Decimal-to-Binary

Types of computers
http://www.teach-ict.com/gcse/hardware/types/miniweb/index.htm

Embedded systems
http://www.embedsystems.com/
http://www.howstuffworks.com/microprocessor.htm

Software
http://www.teach-ict.com/gcse/software/software/miniweb/categories.htm
http://www.teach-ict.com/gcse/software/software/miniweb/operatingsystem.htm
http://www.teach-ict.com/gcse/software/software/miniweb/applications.htm

Operating system
http://www.teach-ict.com/gcse/software/opsystems/miniweb/index.htm

APPENDIX 7

Web Links (Con't)

User Interface
http://www.teach-ict.com/gcse/software/userinterface/miniweb/index.htm

Folders
http://www.cybertechhelp.com/tutorial/article/how-to-create-folders

Input devices
http://www.teach-ict.com/gcse/hardware/input/miniweb_manual/index.htm
http://www.teach-ict.com/gcse/hardware/input/miniweb_automatic/index.htm
http://www.bbc.co.uk/schools/gcsebitesize/ict/hardware/0inputandoutputdevicesrev2.shtml

Output devices
http://www.teach-ict.com/gcse/hardware/output/miniweb/index.htm
http://www.bbc.co.uk/schools/gcsebitesize/ict/hardware/0inputandoutputdevicesrev3.shtml

Data capture
http://www.teach-ict.com/gcse/software/datacapture/miniweb/index.htm

Storage media
http://www.teach-ict.com/gcse/hardware/storage/miniweb/index.htm
http://www.teach-ict.com/contributors/eilish_padgett/gcse_data_storage/data_storage.html

Mailmerge
http://mistupid.com/technical/mailmerge/
http://personal-computer-tutor.com/mailmerge.htm

CPU Componenets
http://www.teach-ict.com/gcse/hardware/parts/miniweb/CPU_components.htm

APPENDIX 8

Web Links (Con't)

Graphics Packages
http://www.bbc.co.uk/schools/gcsebitesize/ict/software/1graphicssoftwarerev1.shtml
http://www.teach-ict.com/gcse/software/graphics/miniweb/pg2.htm

CAD/CAM
http://www.teach-ict.com/gcse/software/cadcam/miniweb/index.htm
http://www.bbc.co.uk/schools/gcsebitesize/ict/software/1graphicssoftwarerev4.shtml

Web Design
http://www.teach-ict.com/gcse/software/webdesign/miniweb/index.htm

Integrated Application
http://www.teach-ict.com/gcse/software/software/miniweb/integrated.htm

Spreadsheets
http://www.teach-ict.com/gcse/software/spread/miniweb/index.htm
http://www.baycongroup.com/excel2003/index.htm
http://www.baycongroup.com/el0.htm

Network
http://www.teach-ict.com/gcse/hardware/networks/miniweb/net.htm

Internet
http://www.teach-ict.com/gcse/theory/internet/miniweb/index.htm

Programming Languages
http://www.teach-ict.com/gcse/software/programming_languages/miniweb/pg2.htm

LOGO Programming
http://mckoss.com/logo/

APPENDIX 9

Web Links

Algorithm & Pseudo-code
http://cache.search.yahoo-ht2.akadns.net/search/cache?ei=UTF-8&p=algorithm+%26+pseudo+codes&fr=slv8-msgr&u=www.comp.nus.edu.sg/%7Ecs1101x/4_misc/jumpstart/chap3.pdf&w=algorithm+algorithms+pseudo+codes+code&d=QCRAmjWxQzQ2&icp=1&.intl=us

Structured or Modular programming
http://en.wikipedia.org/wiki/Top-down_and_bottom-up_design
http://c2.com/cgi/wiki?StructuredProgramming
http://c2.com/cgi/wiki?ModularProgramming

Visual Basic Tutorials
http://cuinl.tripod.com/tutorials.htm

Data Checking
http://www.teach-ict.com/gcse/software/validation/miniweb/index.htm
http://www.teach-ict.com/gcse/software/db/miniweb/index.htm
http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/3datavalidationrev1.shtml

Analogue and digital data
http://www.ib-computing.com/program/core/analog_digital.html

File Access Methods
http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/4directserialaccessrev1.shtml

Data Types
http://www.teach-ict.com/gcse/software/db/miniweb/pg7.htm

MS Access Tutorials
http://www.teacherclick.com/access2003/index.htm

Suggested Book List For Year 3, 4 and 5

Book Ref	Book Author	Book Title	Publisher	Year
U1	Chris Leadbetter & Stewart Wainwright	Computer Studies and Information Technology	Cambridge University Press	2004
U2	Colin Harber	GCSE ICT Study Guide	Letts Educational	2007
U3	Colin Harber-Stuart	GCSE ICT The Revision Guide	Coordination Group	2005
U4	C W Kong	Learning Microsoft Visual Basic 6.0	Venton Publishing	2000
U5	Stephen Doyle	Information Systems for you- Skill builder	Stanley Thornes	2000
U6	Steve Cushing	The Ultimate Study Guide - Revise GCSE ICT	Letts	2005
U7	Jonathan Chan & Choy Wai Tse Kelly	Computer Applications-Upper Secondary	Pearson Longman	2007
U8	Sean O'Byrne	GCSE SUCCESS: Visual Revision Guide ICT	Letts Publications	2001
U9	Sean O'Byrne	GCSE SUCCESS: Visual Revision Guide ICT, Questions & Answers	Letts Publications	2003
U10	Stephen Doyle	Information Systems for you 3rd Edition	Nelson Thornes	2001
U11	Stephen Doyle	Applied ICT GCSE	Nelson Thornes	2002
U12	Tim Anderson	Visual Basic in Easy Steps	Computer Step	1997
U13	Tony Rackham	GCSE Information Technology	Letts Educational	1995
U14	Roger Crawford, Roland Birbal and Joseph Balir	Longman ICT for IGCSE	Pearson Longman	2006
U15	Stephen Doyle	Information System For You: Teacher Support Pack	Nelson Thornes	2001
U16	Sharon J.Podlin & Pamela Palmer	Hands on Visual Basic 6	Tech Publications	1998