

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	Tables and Relationships	Be able to create and set relationships between tables.	<p>Demo:</p> <ul style="list-style-type: none"> • Open a database which has multiple tables. • Show students different types of relationship between two or more tables. <p>Hands-on:</p> <ul style="list-style-type: none"> • Create a database with two or more tables. • set up a relationship between them: <ul style="list-style-type: none"> ○ one-to-one ○ one-to-many 	<ul style="list-style-type: none"> • differentiate between One-To-One and One-To-Many relationships. • set up a relationship between two tables. • enforce a referential integrity to create a relationship between the two tables. <p>(Appendix 1)</p>	<p>U5: (Pg 230-239)</p> <p>U11: (Pg 73)</p> <p>Online Resource: Access Tutorials (Appendix 14)</p>	Suggested exercise: U14: (Pg 142-149, 151-154)
		Be able to create forms and queries based on multiple tables.	<p>Hands-on:</p> <ul style="list-style-type: none"> • Create a form based on two tables. • Create a query based on two tables 	<ul style="list-style-type: none"> • create a form and a query based on two tables. <p>(Appendix 1)</p>	<p>U5: (Pg 223-227, 240-250)</p>	

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
3 weeks	System Analysis	Be able to list the main stages of system analysis.	Task: Draw the system life cycle diagram	<ul style="list-style-type: none"> • list the main stages of system analysis: (suggested model) <ul style="list-style-type: none"> ○ Fact finding ○ Feasibility Study ○ Analysis ○ Design ○ Implementation ○ Testing ○ Documentation ○ Evaluation / Maintenance 	U5: (Pg 93-99) U8: (Pg 60-69) U10: (Pg 97-103) Check list: (Appendix 4)	Suggested exercise: U9: (Pg 58-59)
		Be able to explore the problems of existing system. Be able to state the tasks that are involved in the feasibility study stage. Be able to evaluate alternative or possible solutions.	Group work: Discuss methods of fact findings. Discuss on examples of problems faced by an organization/company: <ul style="list-style-type: none"> ○ Too long to find customers details. ○ Sales figures are not up to date. ○ Etc 	<ul style="list-style-type: none"> • state the methods of fact finding <ul style="list-style-type: none"> ○ observation ○ interviewing ○ questionnaire ○ reviewing • state examples of problems identified by an organization. • list the components of a feasibility report <ul style="list-style-type: none"> ○ determine the organization's objectives ○ determine the nature and scope of the problem ○ propose alternative solutions ○ describe costs and benefits of the new system ○ prepare a preliminary plan and course of action 		

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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
	System Analysis	Be able to analyze and evaluate the current system.	Task: Complete data flow diagrams and systems flowcharts given.	<ul style="list-style-type: none"> • to analyze and evaluate the current system in greater detail <ul style="list-style-type: none"> ○ a broad description of the current system ○ the flow of information of the current system ○ the evaluation of the current system • to identify the flow of information in and out of the system • design data flow diagrams and system flowcharts. 	U5: (Pg 93-99) U8: (Pg 60-69) Online Resource: System flowcharts (Appendix 14)	Suggested exercise: U9: (Pg 60-61, 66-67)
		Be able to apply top-down design principles to problem solving.	Group work: Discuss on the top-down design for a payroll application.	<ul style="list-style-type: none"> • define top-down design. • state the reasons for using top-down design principles. • apply top-down design principles for a software solution. • list the tasks carried out during the design stage 		
		Be able to identify the implementation methods.	Group work: Identification of conversion methods for different systems.	<ul style="list-style-type: none"> • list the tasks in the implementation stage <ul style="list-style-type: none"> ○ install any new hardware ○ provide training to the users ○ convert or use the new system through direct, parallel or phased approach. • identify the methods of implementation <ul style="list-style-type: none"> ○ direct change over ○ parallel running ○ phased implementation • list the advantages and disadvantages for each implementation method. 		

Duration (no of weeks)	Topic	Learning Objectives	Learning Activities	Learning outcome (At the end of the lessons, students will be able to ...)	Resources	Assessment
	System Analysis	Be able to design data testing strategy.	Group Work: Discuss on examples of test data used in a system. e.g. data used in a school marks processing system	<ul style="list-style-type: none"> • design a sample test data to test a system using: <ul style="list-style-type: none"> ○ normal/standard data ○ abnormal/invalid data ○ extreme data 	U5: (Pg 93-99) U8: (Pg 60-69)	Suggested exercise: U9: (Pg 64-65)
Be able to differentiate between user documentation and technical documentation.		Group Work: Discuss the purpose of user and technical documentation.	<ul style="list-style-type: none"> • differentiate between user documentation and technical documentation • list examples of items in user documentation and technical documentation. 			
Be able to state the needs for maintenance and evaluation of the system.		Group work: Discuss reasons for evaluating the system.	<ul style="list-style-type: none"> • identify ways to maintain the system: <ul style="list-style-type: none"> ○ performance monitored ○ modification made if required ○ errors corrected ○ documentation kept up-to-date • state the reasons for maintenance <ul style="list-style-type: none"> ○ program faults ○ changing needs of the organization ○ accommodate changes in its external environment ○ improve system performance upon customer's request ○ changes in legislation • state the reasons for evaluation 			

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Data Privacy	<p>Be able to identify where personal information are kept and the misuse of these data.</p> <p>Be able to state some of the principles involve in the data protection act.</p>	<p>Demonstration:</p> <ul style="list-style-type: none"> • Show students some places where personal information is kept. Students to suggest more places where personal information is kept. • Show a video on how our personal information can be disclosed to others without our consent. Alternatively, students can copy or download and watch the video at home. 	<ul style="list-style-type: none"> • define the term data privacy. • identify where one's personal information is kept e.g. hospital health records and magazine subscription. • give examples of possible misuse of one's personal information. • list at least 3 principles involve in the data protection <p>(Appendix 2)</p>	<p>U10: (Pg 137-140)</p> <p>U13: (Pg 212-213)</p> <p>Online Resource: Video on data privacy</p> <p>Data Protection</p> <p>(Appendix 9)</p>	

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 Security	Be able to identify factors affecting data security and methods of data recovery.	<p>Demonstration:</p> <ul style="list-style-type: none"> Show pictures of various ways in which data can be lost. Suggest ways to recover lost data and provide examples of various ways to back-up data. <p>Hands-on: Students to back-up information stored on a selected folder in the hard disk onto a floppy disk or other storage media.</p> <p>Restore data from the back-up disk.</p> <p>Group Work: Task worksheet with various scenarios of data lost. Students to determine the causes and what can be done to overcome the problem.</p>	<ul style="list-style-type: none"> define the term data security. list possible dangers of losing files. Suggest ways to recover lost data. <p>(Appendix 2)</p>	<p>U6: (Pg 121-127)</p> <p>U10: (Pg 130-133)</p> <p>Online Resource: News on Data security</p>	<p>Suggested Exercise:</p> <p>U9: (Pg 56-57)</p>
	Consequences of system failure	<p>Be able to explain the consequences of computer system failure.</p> <p>Be able to explain methods of data recovery in case of system failure.</p>	<p>Group Work: Discuss various consequences of system failure in various applications: air traffic control system, traffic-light control system, payroll system, etc.</p>	<ul style="list-style-type: none"> compare the varied degree of seriousness posed by system failure in various situations. state the precautionary methods to prevent system failure. state the methods of system recovery. 	<p>U14: (Pg 266-267)</p>	

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Practice with MS PowerPoint	Be able to develop and format simple presentations.	Hands-on: <ul style="list-style-type: none"> • Create a presentation containing 5-6 slides. 	<ul style="list-style-type: none"> • create, save, open and close a presentation. • enter and format text. • format slides. • switch between open presentations. • use available help functions. <p>(Appendix 6)</p>	U14: (Pg 194-199) Online Resource: Presentation packages	Suggested exercise: U14: (Pg 196-199)
		Be able to identify the general features and make use them for a multimedia applications.	Hands-on: <ul style="list-style-type: none"> • Open a presentation file and incorporated sound or video and animated images. • Incorporate a recorded voice into a presentation file. • Hyperlink slides. 	<ul style="list-style-type: none"> • make use of some interesting elements or features in a multimedia presentation: video, sound and animation. • hyperlink slides to other slides, other presentation files or different format files or a website. <p>(Appendix 7)</p>	PowerPoint Tutorial (Appendix 14)	
1 week	Movie maker application package	Be able to create a simple storyboard using a movie maker program.	Demonstration: <ul style="list-style-type: none"> • Produce a simple movie clips. 	<ul style="list-style-type: none"> • create save, open a movie using still pictures or video clips. • make use of the task button. <p>(Appendix 7)</p>	Online Resource: Movie maker (Appendix 14)	

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	Multimedia System	Be able to understand the need & features of Multimedia System	<p>Discussion: The Definition of Multimedia System Hardware Components and examples of such system. [Encyclopedia, Computer Aided Learning, E-commerce, Graphics in movie making...]</p> <p>Hands-on: Log-on to the internet browse http://dir.yahoo.com/Computers_and_Internet/Multimedia/ And find some application of multimedia system in business.</p>	<ul style="list-style-type: none"> explain the need for a multimedia system justify the need for various hardware components in the multimedia system 	<p>U10: (Pg 84-85)</p> <p>U11: (Pg 230)</p> <p>Online Resource: Multimedia (Appendix 14)</p>	

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Computer Control	Be able to explain the use of sensors in data collection and detection in computer-controlled applications.	<p>Demonstration: Show diagram of relationship between sensors, computers, ADC, DAC and etc.(using example of Greenhouse control system)</p> <p>Show pictures of the various types of sensors and their uses. e.g. light sensor, sound sensor, temperature sensor, etc.</p> <p>Group work: Explore examples of computer control.eg. alarm clock, buzzer for shop, light house, etc.</p> <p>Discuss on the paper manufacturer which uses process control with radiation to make paper.</p>	<ul style="list-style-type: none"> state the role of computers in control. describe the role of sensors in control. identify the different types of sensors used in computer-controlled applications. <ul style="list-style-type: none"> light temperature pressure sound etc describe the need of an ADC in conversion of analog to digital data. describe the purpose of feedback loops in a computer-controlled system. describe what is a process control. 	<p>U3: (Pg 61-65)</p> <p>U10: (Pg 163-168)</p> <p>U11: (Pg141-147)</p> <p>U14: (Pg 218-230)</p> <p>Online Resource: Computer Control (Appendix 15)</p>	<p>Suggested exercise:</p> <p>U10: (Pg 169-172)</p> <p>U14: (Pg 221, 228-229)</p>
	Data Logging	Be able to explain the data logging process and to give examples of data logging.	<p>Group Work:</p> <ul style="list-style-type: none"> Case study of various data logging experiments. Students to suggest suitable data logging period and data logging interval for each application. Discuss their virtues and limitations. 	<ul style="list-style-type: none"> define the term data logging. provide examples of data logging experiments. state a suitable data logging interval and data logging period for a given application. list the hardware and software used in the data logging experiment. state the advantages and disadvantages of a given data logging experiment. 	<p>U3: (Pg 61-62)</p> <p>U8: (Pg 40-41)</p> <p>U10: (Pg 107-111)</p> <p>U13: (Pg 176-177)</p> <p>U14: (Pg 214-218)</p> <p>Online Resource: Data Logging (Appendix 15)</p>	<p>Suggested exercise:</p> <p>U9: (Pg 40)</p>

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Commercial and general data processing	Be able to state the advantages of using computers in commercial and general data processing.	<p>Group work: Discuss the benefits of computers in commercial use:</p> <ul style="list-style-type: none"> o supermarkets o banks o dental clinic o etc <p>Field trip: Explore the use of computers in commercial banks.</p>	<ul style="list-style-type: none"> • state the devices used at a point-of-sale(POS) terminal.eg. supermarkets • list the benefits of computers in commercial use: eg. in supermarkets(in stock control and order processing). • list advantages and disadvantages of: <ul style="list-style-type: none"> o EFTPOS o Credit cards o Debit cards o etc 	<p>U7: (Pg 118-122) U8: (Pg 74-75) U10: (Pg 200-205, 207-212) U11: (Pg135-139, 160-161, 166-173) U14: (Pg 269-274)</p> <p>Online Resource: E-commerce (Appendix 15)</p>	Suggested exercise: U9: (Pg 70-71)
	Industrial, technical and scientific uses	Be able to state advantages of computers in industrial, technical and scientific use.	<p>Group work: Discuss the advantages and identify the devices needed for each of the applications below:</p> <ul style="list-style-type: none"> - CAD/CAM - Image processing - Weather forecasting - Industrial inspection system - Simulation - Virtual Reality - Modeling <p>Field trip: A visit to RBA training centre (flight simulator)</p>	<ul style="list-style-type: none"> • list advantages of computers in industrial, technical and scientific use. • define and give examples of CAD/ CAM. • define and give examples of simulation and modeling. 	<p>U3: (Pg 66-68) U10: (Pg 86, 183-189) U11: (Pg 120-123) U14: (Pg 227-228, 275-276)</p> <p>Online Resource: CAM (Appendix 15)</p>	

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Expert systems	<ul style="list-style-type: none"> Be able to describe the application of expert system. 	Group work: Discuss on examples on the use of expert system: <ul style="list-style-type: none"> medical diagnosis mineral prospecting fault diagnosis 	<ul style="list-style-type: none"> define expert system. describe the three components of an expert system: <ul style="list-style-type: none"> knowledge base inference engine user interface list advantages and disadvantages of using expert system. give examples of expert system. 	U10: (Pg 186-187) U14: (Pg 281) Online Resource: Expert systems (Appendix 15)	
	Robotics	Be able to identify the advantages and limitations of using Robots.	Group Work: Discuss the advantages, limitations and applications of Robotics. Demonstration: Use video clips to view the application of Industrial Robots from http://www.robots.net http://www.merlinrobotics.co.uk/merlinrobotics/?gclid=CInwvIDM2osCFR0TTAod5U-UXQ	<ul style="list-style-type: none"> identify the advantages and the limitations of using Robots. 	U10: (Pg 162-163) U14: (Pg 224-226) Online Resource: Robotics (Appendix 15)	Suggested Exercise: Produce a report on industrial OR domestic robot.

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Miscellaneous areas	Be able to state the advantages of using computers in: <ul style="list-style-type: none"> o Education and Training o Entertainment o helping the handicapped. 	Group work: Discuss the advantages of CBL(Computer-based learning) Discuss how computers can help people with special needs.	<ul style="list-style-type: none"> • define CBL(computer based learning). • state the advantages and disadvantages of CBL. • list and identify types of CBL software: <ul style="list-style-type: none"> o drill and practice o tutorial o game o problem solving • describe the use of computer in production and generation of music by mixing different signals • describe the use of computers in television and film: <ul style="list-style-type: none"> o computer graphics o animation • state devices used to help people with special needs: <ul style="list-style-type: none"> o Braille keyboard, Braille monitor o speech recognition systems, etc 	U7: (Pg 122-127) U10: (Pg 205-206, 213-215) U11: (Pg 300-304) U14: (Pg 276-277) Online Resource: Education & ICT Entertainment (Appendix 15 & 16)	
	Office Automation (OA)	Be able to state the meaning of OA and state the order of stages in an OA project.	Group Work: Discuss the advantages and meaning of Office Automation. Demonstration: Browse internet for modern OA facilities.	<ul style="list-style-type: none"> • explain the meaning of OA. • identify equipments like PBX, fax and vending machines as conventional OA facilitation. • identify the advantages and disadvantages caused by OA. 	U10: (Pg 178-181) Online Resource: Automation (Appendix 16)	

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Changing work patterns	Be able to explain the changes in employment trends brought about by computer controlled technology.	<p>Group Work: Discuss the changes in employment trends.</p> <p>Identify the effects of de-skilling: manufacturing, publishing, services, etc.</p> <p>Discuss the needs for re-training.</p>	<ul style="list-style-type: none"> explain the changes in employment trends. explain what de-skilling is and provide examples. explain what electronic scabbing is. explain the needs for re-training. list advantages and disadvantages of tele-commuting (tele-working). explain what a call centre is and provide examples. (Appendix 8) 	<p>U3: (Pg 86) U8: (Pg 72-73) U10: (Pg 154-155) U11: (Pg255) U14: (Pg 284-285)</p> <p>Online Resource: Changing work patterns (Appendix 16)</p>	<p>Suggested exercise:</p> <p>U9: (Pg 68-69)</p>
	Changing lifestyles	<p>Be able to identify changes in lifestyles due to technology.</p> <p>Be able to state the benefits of new products.</p>	<p>Assignment: Visit a commercial website and browse through the ordering procedures for e-shopping (on-line shopping).</p> <p>Assignment: Search for new products and related information.</p> <p>Group Presentation: New products.</p>	<ul style="list-style-type: none"> explain what a cashless society is. list advantages and disadvantages of cashless society. describe what a smart card is. list advantages and disadvantages of on-line shopping (e-commerce). list the benefits of office automation. name the modern gadgets used at home. identify new products that allow us to lead to more comfortable and secure life. <p>(Appendix 10 & 11)</p>	<p>U7: (Pg 160-163) U10: (Pg 156-158) U11: (Pg 247-249)</p> <p>Online Resource: Changing lifestyles (Appendix 16)</p>	

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Health and safety	<p>Be able to identify health problems associated with using computers.</p> <p>Be able to identify precautions to reduce health risks when working with computers.</p>	<p>Demonstration: Show pictures of ergonomically-designed equipments.</p> <p>Assignment: Collect information on safety issues at work.</p>	<ul style="list-style-type: none"> list some health problems caused by using computers and suggest remedies to overcome them. list some safety issues at work and suggest remedies to overcome them. list some Health and Safety Regulations. <p>(Appendix 9)</p>	<p>U8: (Pg 76 – 77)</p> <p>U11: (Pg 271-276)</p> <p>U14: (Pg 285-286)</p> <p>Online Resource: Health & Safety (Appendix 16)</p>	<p>Suggested exercise: U9: (Pg 72-73)</p>
	Moral and social issues	<p>Be able to identify areas on moral and social issues with the use of computers.</p> <p>Be able to identify the undesirable usage of Internet.</p>	<p>Group work: Discuss the effects on some moral issues: copyright, unethical websites, hacking, etc.</p> <p>Discuss the effects on some social issues: electronic scabbing, de-skilling, etc.</p> <p>Group work: Discuss some drawbacks of using the Internet.</p>	<ul style="list-style-type: none"> state some moral issues related to the use of computers. state some social issues related to the use of computers. describe the effects of these moral and social issues. state some drawbacks of using the Internet. <p>(Appendix 10)</p>	<p>U3: (Pg 88-89)</p> <p>U8: (Pg 88-89)</p> <p>U11: (Pg 264-267, 281-283)</p> <p>Online Resource: Moral & social issues (Appendix 16)</p>	<p>Suggested exercise: U9: (Pg 84-85)</p>

COMPUTER STUDIES

SCHEME OF WORK

YEAR 10 (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	Video Conferencing	Be able to identify the advantages and limitations of Video conferencing.	<p>Group work: Discuss the advantages, limitations and system requirements.</p> <p>Demonstration: Participate in an ongoing video conference.</p>	<ul style="list-style-type: none"> take part in a video conference. identify the advantages of using a video conference. 	<p>U3: (Pg 79) U14: (Pg 181)</p> <p>Online Resource: Video Conferencing (Appendix 8)</p>	<p>Suggested Exercise:</p> <p>Explain the advantages and the disadvantages of Video Conferencing</p>
1 week	Computer Crime	<p>Be able to provide examples of computer crime.</p> <p>Be able to explain ways to protect against computer crime.</p>	<p>Demonstration: Slide-show of various examples of computer crime and prevention methods.</p> <p>Field trip: Visit a bank to view their security features.</p>	<ul style="list-style-type: none"> define the term computer crime. provide examples of computer crime. define the term hacking. define the term software piracy. provide various safeguard against computer crime. <p>(Appendix 11)</p>	<p>U7: (Pg 66-79, 136-141,157-159) U10: (Pg 148-152) U14: (Pg 286-290)</p> <p>Online Resource: Computer crime (Appendix 17)</p>	
	Computer virus	Be able to state and list precautions against computer virus.	<p>Hands-on: Using an anti-virus software to scan and remove viruses.</p> <p>Group work: Discuss the effects of and ways to overcome virus infections.</p>	<ul style="list-style-type: none"> define the term computer virus. state the sources of virus infections. list precautions against virus infections. <p>(Appendix 12)</p>	<p>U7: (Pg 139-141, 147-149) U10: (Pg 131-132) U14: (Pg 183-184)</p> <p>Online Resource: Computer virus (Appendix 17)</p>	

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SCHEME OF WORK

YEAR 10 (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	The Data Protection Act	<p>Be able to justify the need to control how data and information can be collected and used.</p> <p>Be able to identify the data protection legislations.</p>	<p>Group work: Discuss the use of personal data and how these data users (data collectors) should be held responsible for using the data.</p>	<ul style="list-style-type: none"> differentiate between data commissioner, data controller/user and data subject. list the rights of data subjects. list the eight principles under the Data Protection Act. state the exemptions from the Data Protection Act. (Appendix 13) 	<p>U3: (Pg 85) U8: (Pg 80-81) U11: (Pg267-269)</p> <p>Online Resource: Data Protection Act (Appendix 17)</p>	<p>Suggested exercise: U9: (Pg 76-77)</p>
	Data and Computer misuse	<p>Be able to give examples of computer misuse at work.</p>	<p>Group work: Discuss various examples of computer misuse at their work place.</p>	<ul style="list-style-type: none"> list examples of computer misuse at work. list some rules under the Computer Misuse Act. describe examples of misuse of data: electronic fraud, credit card fraud, etc. (Appendix 13) 	<p>U3: (Pg85) U11: (Pg270)</p> <p>Online Resource: Data and Computer misuse (Appendix 17)</p>	
	Copyright	<p>Be able to explain the concept of copyright applied to software and files.</p> <p>Be able to explain copyrights issues which involve file or software downloading from the Internet.</p>	<p>Group work: Discuss copyrights issues.</p>	<ul style="list-style-type: none"> explain terms like Freeware, Shareware and User licenses. list examples on how copyright laws can be broken. (Appendix 13) 	<p>U3: (Pg 85) U10: (Pg 151) U11: (Pg270-271)</p> <p>Online Resource: Copyright (Appendix 17)</p>	

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	
	Working with Multiple tables	Create a many-One link, simply drag multiple fields (in the first table) to a single field in the second table.	
		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	
	Sharing Information between application	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.	
		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 link 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	

SUGGESTED CHECK LIST ON DATA PRIVACY AND SECURITY:

Suggested check list on Data Privacy and Data Security		Tick here
Examples of computer crime		
	Software Piracy	
	Data Espionage	
	Computer Fraud	
	E-mail Scams	
Examples of hacking		
	Password guessing	
	Spyware/plug-Ins to capture personal details e.g. Credit-card details	
Physical safeguards against hacking		
	Locking CPU/notebook	
	Accessing a Computer lab via special key like a magnetic stripe card	
	Accessing a Computer lab via biometric characteristic { like retina-scan, face recognition, fingerprint-scan and voice recognition}	
Software safeguards against hacking		
	User ID and Password	
	Data Encryption	
	Firewall	
Sources of virus infections		
	Sharing diskettes/computers	
	Free software distributed with magazines	
	Downloading software/shareware from untrusted web-sites	
	E-mail attachment	

SUGGESTED CHECK LIST ON DATA PRIVACY AND SECURITY:

Virus protection measures.		
	Avoid the use of any programs of doubtful origin, such as free software.	
	Write-protect disk	
	Avoid sharing diskettes/computers.	
	Use of antivirus software and updating the virus definition files.	
	Back up files on a regular basis	
Possible dangers of losing files		
	Lost e.g. losing storage discs/tapes, bad filename	
	Destroyed e.g. natural disaster, accidental deletion	
	Corrupted e.g. scratches on a disc/ faulty disc drives , electronic interference	
	Modified e.g. accidentally overwritten, fraud, updated with wrong data.	
	Accessed by unauthorized	
Recover lost data		
	Use of back up file	
	Uninterruptible Power Supply (UPS)	

GUIDELINE FOR TEACHERS:

SUGGESTED CHECK LIST ON SYSTEM ANALYSIS:

PHASE	Tasks	Suggested tasks and direction of activities	Tick here
Preliminary Investigation	Preliminary Analysis	Determine organization objectives	
		Determine nature / scope of the problem.	
	Proposed Alternative solutions	Leave the system as it is	
		Improve the system	
		Develop a new system	
Describe Costs & Benefits	Aware of: unnecessary steps / errors/ redundancy		
Submit a Preliminary Plan	All findings compiled in a written report		
Analysing the system	Gather data	Tools: gather any written document e.g: organizational chart	
		Held structured interviews, set questionnaires, observation and sampling	
	Analyze the data	Use modeling tools: (any 5) data flow diagram, systems flowcharts, connectivity diagrams, grid charts & decision tables. Any analysis phases done above should be documented.	
Design the system	Do a Preliminary Design	Describes general functional capabilities of a proposed information system. Use 3 tools: Prototyping, CASE tools & Gantt Chart/ PERT chart.	
	Do a detail design	Describes a proposed information system will deliver the general capabilities (in the preliminary design): Output/Input requirement; storage; processing requirement & system control / backup	
	Write a Report	Compile both the preliminary as well as the detail design to a detailed report.	
Develop the system	Obtain the hardware	Some organization prefer to lease rather than buy some of the expensive hardware	
	Obtain the software	Make-or-buy decision : an analyst has to decide whether to make a new program (custom-written) or buy it – simply purchase an existing software package.	
	Test the system (2 types)	Unit testing: individual parts of the program (subroutines) are tested using test data.	
System testing: the parts are then linked together and test data is used to see if the parts work together.			
Implement the system	Convert to the new system	Direct approach: stops using the old system and starts using the new one.	
		Parallel approach: old and new system operated side by side until the new system has shown it is reliable.	
		Phased approach: parts of the new system are phased in gradually.	
		Pilot approach: the entire system is tried out but only by some users.	
	Train the users	Using instructional manuals	
Video tapes movie showing clips			
Live classes (1-1) or (1-Many)			
Maintain the system	Auditing	Design an audit trail which helps auditors to trace the record of transaction from its OUTPUT back through all processing and storage to its source.	
	Evaluation	Comparing the workings of the system against some preset criteria.	

TEST YOURSELF

Using the words in the list below, complete all the questions below. The words may be used more than once

<i>output</i>	<i>Systems analyst</i>	<i>Analysis trained</i>	<i>Evaluated</i>	<i>Feasibility report</i>
<i>Parallel documentation</i>		<i>design</i>	<i>Feasibility study</i>	<i>Fact find</i>

1. A _____ is the person who looks at the manual system to see which parts to computerize
2. She looks at the manual system in terms of three stages: input, process and _____.
3. To begin with, she will perform a _____ in order to find out a variety of facts about the business.
4. Going on from this, she will then perform a _____ which will then look at whether an alternative system would be feasible.
5. When she has completed this, she will submit a _____ to the directors of the company.
6. If the directors are happy with the report, they will give the go-ahead for the system and the analyst can start to _____ the system.
7. Detailed system _____ then follows where outputs, inputs, files, software etc. are all decided.
8. The personnel involved with the new system will need to be _____.
9. Also, _____ will need to be written.
10. There are three ways that a system can be implemented: _____ running, phased implementation and direct implementation.
11. After a system has been in use for some time, it needs to be _____ to make sure that the objectives of the system are still being satisfied.

SUGGESTED CHECKLIST ON MULTIMEDIA & PRESENTATION APPLICATION PACKAGES.

Suggested check list for hands-on activities		Tick Here
Sound recording software:		
	Open the application: program → accessories → entertainment → sound recorder	
	Identify the simple buttons for recording and play-back	
	Demonstrate the use of other features like: mixing sound, changing the tempo and the frequency of the recorded voice.	
	Save the recorded voice for later use in the Microsoft power point application.	
	Closing the application	
Presentation software: start creating		
	Open, editing, close and save a multimedia application.	
	Create a presentation by using pre-designed layout and templates.	
	Use the undo and redo commands	
	Save a file under a different file type eg. 'slide show' file type	
Formatting text		
	Use different case, build shadows and colours.	
	Try different text alignments: left, right, centre and justified.	
Format the paragraph and slides		
	Adjust line spacing before / after bulleted and numbered point	
	Change between the style of bullets, numbers in a list from built-in standard options	
	Apply the background templates or import other wallpapers.	

APPENDIX 7

SUGGESTED CHECKLIST ON MULTIMEDIA & PRESENTATION APPLICATION PACKAGES.

Suggested check list for hands-on activities		Tick Here
Other features / elements to be incorporated		
	Clip arts, word art, animation or animated clip art	
	Sound or music	
	Slide transitions	
	Incorporate timing features during a slide show presentation	
Hyperlink buttons		
	Hyperlink built- in buttons / user-made buttons	
	Hyperlink to other presentation file or other files	
	Hyperlink to external slides from other presentation file	
	Linking a slide to other files like a movie file, a webpage ...	
Movie Maker application package:		
	How to import pictures into the collection frame	
	Show two viewing mode of media: storyboard and timeline	
	Produce (drag) clips from collection to the storyboard /timeline.	
	Incorporate audio and music effects	
Making use of the TASK button		
	Video effects.	
	Video transition.	
Designing the movie clips with titles or credits (Enrichments)		
	Titles at the beginning / before / after selected slides shows	
	Add credits at the end of the movie	
	Saving video clips in different movie formats: CD format, e-mail; web version; DV format and simply to the computer movie version.	

SUGGESTED CHECKLIST ON THE SOCIAL AND ECONOMIC IMPLICATIONS OF THE USE OF COMPUTERS

Suggested check list on The social and economic implications of the use of computers		Tick here
Changing employment patterns		
	Many of the manual tasks such as assembly work and paint spraying in factories are now performed by robots.	
	Many industrial processes operate 24 hours a day and are continually being monitored and controlled by robots.	
	There are fewer paper-based systems in offices.	
	More people work from home, with the advantage of no travelling and freedom of being able to live in any part of the country(or the world for that matter).	
	Computers are used to monitor the performance of their users. eg. In supermarkets	
Examples of how de-skilling can happen		
	Through replacement of skilled and semi-skilled labour by micro-processor-controlled systems in manufacturing. eg. robots	
	The typesetters who used to set out newspapers were replaced by Desktop Publishing	
Examples of jobs alteration as a result of computers		
	Secretaries use office software	
	Shop assistants scan bar codes	
	Doctors keep computer records and use diagnostic techniques such as CAT scans	
	Police use databases to track criminals and check on drivers and cars	
	Engineers use CAD to design constructions and to perform simulations	
	Civil servants use models to predict economic changes	
Reasons for the need of retraining		
	Existing packages are upgraded	
	New packages are published	
Advantages of homeworking		
	Less travel.	
	Working hours to suit the individual.	
	There is no need to live near the work place.	
	Saving on expensive office space.	

Suggested check list on The social and economic implications of the use of computers		Tick here
Disadvantages of homeworking		
	Less social contact.	
	A suitable room has to be found at home.	
	Likelihood of interruptions from family.	
Hazards in the work place		
	Wires trailing across the floor which people might trip over.	
	Overloaded power sockets, which can cause fires.	
	Wedging a fire door open which should be kept shut at all times.	
	Large quantities of paper lying around, particularly if people are allowed to smoke in the office.	
	Not lifting properly.	
Remedies to overcome hazards in the work place		
	All electrical equipment should be tested for safety at regular intervals.	
	Wires should be bound together and run through proper ducting.	
	Back should be kept straight with legs bent while lifting.	
Health problems which can be linked using a computer		
	Eyestrain	
	Stress	
	Backache or joint aches(RSI)	
Measures to reduce health risks		
	Take regular breaks form computer work. Looking away from the screen, walking around and exercising your fingers and hands.	
	Make sure there are no reflections off the screen. If sunlight is coming in, take time to adjust the binds.	
	Use copy-holder to hold documents rather than read them from the surface of the desk.	
	Adjust your chair to the right height.	
	Adjust the brightness and contrast of the monitor to suit you.	
	Sit up straight.	
	Use special keyboards and wrist guards.	
	Make sure that your screen is clean.	

Suggested check list on The social and economic implications of the use of computers		Tick here
Health and Safety Regulation 1992		
	Analyse workstations, and assess and reduce risks.	
	Ensure workstations meet minimum requirements.	
	Plan work so there are breaks or changes of activity.	
	Provide free eye-tests.	
	Provide health and safety training and information.	
Social Issues		
	"Information Rich" and "Information Poor"	
	The Internet is changing how we interact	
	Over-reliance in technology	
	Impact on literacy	
	Faster pace of life	
	Motivation changes	
	Reduced social interaction at work	
	Changes in leisure time	
Moral issues		
	Unrestricted Internet access	
	Ease of copying of computer files	
	Computers are replacing people at work	
	Increased government surveillance	
Advantages of cashless society		
	It is far more convenient not to have to use cash.	
	The risk of being robbed is reduced. It is safer to move around.	
	You don't have to queue at the bank.	
	Credits cards allow people to buy goods and pay them at the end of the month or obtain them on credit, paying a proportion each month.	

Suggested check list on The social and economic implications of the use of computers		Tick here
Disadvantages of cashless society		
	Credit is normally given only to people who are working and have a steady source of income, so certain people won't be able to get it.	
	It is possible for people to spend more than they can really afford so they can get easily into debt.	
	More information is kept about individuals. Inevitably some of this will be incorrect and lead to people wrongly being refused cash or credit cards.	
	It is harder for people to keep track of how much they have spent.	
Examples of downside of Internet		
	Shopping on the Internet will attract fraud and thieves.	
	Illegal materials - detailed instructions on how to make bombs and their dangerous products are freely available on the Internet	
	Pornographic, obscene, indecent and immoral material can be downloaded by anyone.	
	Starting rumours – it is easy to spread rumours using the Internet through chatrooms.	
Examples of consequences of system failure		
	A failure during a batch update of a sequential master file is irritating and will cause delay	
	A failure in an air traffic control system could well have catastrophic results	
Examples of computer crime		
	The cracking of ineffective security systems to gain unauthorized access to commercially sensitive or confidential data	
	Fraud through improper transfer of funds from one account to another	
Measures taken to combat computer crime		
	Physical security	
	Development of complex security codes and systems	
	Encryption of sensitive data	
	Monitoring of all attempts to access the system	

Virus protection measures		
	Avoid the use of any programs of doubtful origin, such as free software.	
	Write-protect disk	
	Avoid sharing diskettes/computers.	
	Use of antivirus software and updating the virus definition files.	
	Back up files on a regular basis.	
Possible dangers of losing files		
	Lost e.g. losing storage discs/tapes, bad filename	
	Destroyed e.g. natural disaster, accidental deletion	
	Corrupted e.g. scratches on a disc/ faulty disc drives , electronic interference	
	Modified e.g. accidentally overwritten, fraud, updated with wrong data.	
	Accessed by unauthorized	
Recover lost data		
	Use of back up file	
	Uninterruptible Power Supply (UPS)	

Suggested check list on The social and economic implications of the use of computers		Tick here
Data Protection Act		
	Personal data must be obtained and processed fairly and lawfully.	
	Personal data must be held for specific purposes.	
	Personal data must not be used for any reason incompatible with its original purpose.	
	Personal data should be relevant and adequate.	
	Personal data must be accurate and up-to-date.	
	Personal data must not be kept longer than necessary.	
	Personal data must be made available to the individual concerned and provision made for correction.	
	Personal data must be kept secure.	
Misuse of computers at work		
	Wasting time playing games when they should be working.	
	Installing illegal software, thus placing the firm in a difficult position.	
	Running private business interests on the company's equipment.	
	Visiting questionable websites, wasting work time and placing the company in a dubious position.	
	Circulating irrelevant or offensive material via the company's email system.	
Computer Misuse Act		
	It is illegal to unauthorized access to computer material(e.g. hacking). This include viewing of network you are not permitted to see and the illegal copying of programs(software piracy).	
	It is illegal to gain unauthorized access to computer to carry out serious crimes like fraud and blackmail.	
	It is illegal to unauthorized changing of computer files including planting of viruses and deleting files.	
How Copyright Laws may be broken		
	Using software without proper licence.	
	Downloading text or images from the Internet and using them without saying where you got them, or without receiving the copyright owner's permission.	
	Copying a computer program you use at work and running it on a computer at home, without the permission from the copyright holder.	

Web Links

MS Access Tutorials

<http://www.teacherclick.com/access2003/index.htm>

Video on data privacy

<http://www.ictgcse.com/?act=podcast#vid>

News on data security

http://www.teach-ict.com/news/news_dpa.htm

System Flowcharts

<http://www.bbc.co.uk/schools/gcsebitesize/ict/measurecontrol/2systemflowchartrev1.shtml>

Presentation Packages

<http://www.teach-ict.com/gcse/software/presentation/miniweb/index.htm>

http://www.baycongroup.com/powerpoint/00_powerpoint_tutorial.htm

Movie Maker

<http://www.microsoft.com/windowsxp/using/moviemaker/getstarted/default.mspx>

<http://www.mightycoach.com/articles/mm2/index.html>

Multimedia

<http://www.webopedia.com/TERM/m/multimedia.html>

<http://www.webstyleguide.com/multimedia/applications.html>

Web Links (Con't)

Computer Control

<http://www.teach-ict.com/gcse/software/control/miniweb/index.htm>

<http://www.bbc.co.uk/schools/gcsebitesize/ict/measurecontrol/0computercontrolrev1.shtml>

Data Logging

<http://www.teach-ict.com/gcse/software/datalogging/miniweb/index.htm>

<http://www.bbc.co.uk/schools/gcsebitesize/ict/measurecontrol/3dataloggingrev1.shtml>

E-commerce

<http://www.teach-ict.com/gcse/theory/ecommerce/miniweb/index.htm>

Banking & ICT

<http://www.teach-ict.com/gcse/theory/banking/miniweb/index.htm>

CAM

http://www.teach-ict.com/gcse/software/cadcam/students/shome_cadcam.htm

Expert System

<http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/0datainforev6.shtml>

http://www.teach-ict.com/as_a2/topics/rule_based_systems/rule_based_systems.htm

Robotics

<http://www.teach-ict.com/gcse/software/robotics/miniweb/index.htm>

<http://www.merlinrobotics.co.uk/merlinrobotics/?gclid=CInwvIDM2osCFR0TTAod5U-UXQ>

Education & ICT

<http://www.teach-ict.com/gcse/theory/education/miniweb/index.htm>

Web Links

Entertainment

<http://www.bbc.co.uk/schools/gcsebitesize/dida/multimedia/productsrev5.shtml>

<http://www.teach-ict.com/gcse/theory/social/miniweb/entertainment.htm>

Automation

<http://en.wikipedia.org/wiki/Automation>

Employment & ICT

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

<http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/2workpatternsrev1.shtml>

Lifestyles

<http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/1lifestylerev4.shtml>

<http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/1lifestylerev2.shtml>

<http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/1lifestylerev1.shtml>

Health & safety

<http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/3healthandsafetyrev1.shtml>

<http://www.teach-ict.com/gcse/theory/healthsafety/miniweb/index.htm>

Moral & Social Issues

<http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/0moralandsocialissuesrev1.shtml>

Video Conferencing

<http://www.webex.com/overview/video-conferencing.html>

Web Links

Computer Crimes

<http://www.teach-ict.com/gcse/theory/crime/miniweb/index.htm>
<http://www.bbc.co.uk/schools/gcsebitesize/ict/legal/1misuesrev1.shtml>

Sound file on Network security and Video on Phishing:

<http://www.ictgcse.com/?act=podcast>

News on computer crimes:

http://www.teach-ict.com/news/news_crime.htm
http://www.teach-ict.com/news/news_hacking.htm

Computer Viruses

http://www.teach-ict.com/gcse/theory/virus/student/shome_virus.htm

On-line Quiz on computer viruses

http://www.teach-ict.com/gcse/theory/virus/student/s_virus_quiz.htm

Data Protection

<http://www.bbc.co.uk/schools/gcsebitesize/ict/legal/0dataprotectionactrev1.shtml>
<http://www.teach-ict.com/gcse/theory/dpa/miniweb/index.htm>

Data & Computer Misuse

<http://www.bbc.co.uk/schools/gcsebitesize/ict/legal/1misuesrev1.shtml>

Copyright

<http://www.bbc.co.uk/schools/gcsebitesize/ict/legal/2copyrightrev1.shtml>
http://www.teach-ict.com/gcse/theory/copyright_patents_act/teacher/copyrt_theory.htm