MINISTRY OF EDUCATION

TONGA

Tonga School Certificate

C O M P U T E R S T U D I E S

P R E S C R I P T I O N

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Introduction

On the doorstep of the 21st millennium communication information technology continues its rapid development and life changing power. This Prescription recognises the dynamism of the subject, the continual need to advance the practical skills of students and the academic standards necessary for a national program.

The Prescription covers the essential learning areas for Computer Studies. It does this through specified Achievement Criterias. These are the skills and knowledge that students need to gain competency in the use of computers.

Elective topics augment these essential skills and provide flexibility in content. The Prescription keeps consistent standards of learning between elective subjects. Teachers choose the elective option which suits the needs of their students and available resources.

The Achievement Criteria in the Prescription clearly outline the skills and knowledge students need to gain in order to complete the course successfully.

Assessment of the course is by Common Assessment Tasks, Projects, Teacher Designed Tasks, and a Final Examination. These are described later in this document and details of these assessment processes will be communicated to schools as required during each academic year.

The core subjects provide a foundation and elective options a flexibility for the Prescription to continue to develop and remain relevant to the skills students need today and tomorrow. The continual development in Communications Information Technology will require further reviews of this Prescription on a regular basis.

Course Structure

The course prescription is divided into core topics supplemented by elective topics.

The Core Topics are:

- General Computer Knowledge
- Hardware
- Software
- Operating Systems
- Word-Processing
- Spreadsheets
- Databases
- Programming

The Elective Topics are:

- Networking
- Desktop Publishing on a Personal Computer
- Using Personal Computers to Make Computer Presentations

The core topics cover EIGHT of the fundamental skills and academic knowledge requirements of computer studies. The elective topics are designed to set minimum standards of skills and knowledge while providing a range of topics in more specialised fields for staff and students to explore. Achievement of the prescription objectives is measured through a national examination, common assessment tasks, common assessment projects and teacher designed tasks. Elective topics are assessed through teacher designed tasks set to the standards specified by the prescription.

The skills and academic standards prescribed for each topic is itemised through a set of specific objectives termed **achievement criteria (AC).** These achievement criterias define the specific learning objectives that can be singularly assessed.

Grade Allocation

Grades are allocated through the National Examination 40% and Internal Assessment 60% administered by the schools and moderated by the Examination Unit.

- Table 1 is a brief of the course grade allocation.
- Table 2 details the content weighting of the Final Examination by Course Topic.
- Table 3 details the content weighting of the Internal Assessment by Course Topic.

The National Examination is designed, supervised and marked by the Examination Unit. The national examination is carried out at the end of the year and will only cover the Five core topics specified in Table 2.

The Internal Assessment is moderated by the Examination Unit after each Internal Assessment. Teacher designed assessment tasks are submitted for approval by the Examination Unit.

Table 1 Course Grade Allocation by Assessment Process

Prescription	Allocation
National Examination	40%
Internal Assessment	60%

Topic	Assessment Method	Weight
1. National Examination	Examination	40%
2. Computer Operations & Word-processing	Common Assessment Task 1	10%
3. Spreadsheets	Common Assessment Task 2	10%
4. Database	Common Assessment Task 3	10%
5. Programming	Common Assessment Project	20%
6. Elective	Teacher Designed Assessment Task 3	10%
	Total IA Programme	100%

Table 2 National Examination Grade Allocation by Topic

Examinable Topic	Allocation
1. General Computer Knowledge	25%
2. Hardware	25%
3. Software	25%
4. Operating Systems	
5. Programming	25%

Table 3 Internal Assessment Grade Allocation by Topic

Topic	Assessment Method	Weight
7. Computer Operations & Word-processing	Common Assessment Task 1	20%
8. Spreadsheets	Common Assessment Task 2	20%
9. Database	Common Assessment Task 3	20%
10. Programming	Common Assessment Project	30%
11. Elective	Teacher Designed Assessment Task 3	10%
	Total IA Programme	100%

Basic Requirements

Teachers designing their TSC coursework must include the core topics, plus ONE elective topic. A school may offer more than one elective topic provided resources are available for students to select from the range of topics.

Each school must submit a course plan to include:

- Schedule of Internal Assessment
- Teacher Designed Assessment Task Projects for Elective(s) Topics
- Marking Schedule for Teacher Designed Assessment Tasks

Although the Elective Topic may be assigned to students as independent study subjects, a more optimal use of electives is to teach students these new skills and use the teacher designed task to assess student retention of these new skills.

Range:

The Range specified in the prescription details exactly which concepts, items and situations, are to be studied. This list is referred to as the Range. Only these concepts listed within the range are to be tested.

Topic 1: General Computer Knowledge

Objectives		Achievement Criterias
1. Display a general knowledge of Computer Systems		*Students should be able to:*
	1.1.1	Differentiate between the four major categories of computers: *Range* ✍✍ Microcomputer ✍✍ Minicomputer ✍✍ Mainframe ✍✍ Supercomputer
	1.1.2	State the definition of a computer
	1.1.3	Given a table be able to convert ASCII to binary
	1.1.4	Be able to convert between bit and byte and understand the differences between kilobyte, megabyte, and gigabyte.
	1.1.5	Distinguish between Local Area Networks (LAN) and Wide Area Networks (WAN)
	1.1.6	Describe the use and meaning of common computing terms *Range* ✍✍ ASCII Code ✍✍ Bit, ✍✍ Byte, ✍✍ Word,
	1.1.7	Identify and describe ethical issues *Range* ✍✍ Corporate Confidentiality ✍✍ Individual Privacy ✍✍ Piracy
1.2 Manage files, Use System and Application Data Security features.		*Students should be able to.*
	1.2.1	Demonstrate the ability to manage files *Range* ✍✍ Create ✍✍ Display directory (folder) contents ✍✍ Locate Directories (folders) ✍✍ Locate Files ✍✍ Name ✍✍ Save
	1.2.2	Print Documents
	1.2.3	Make back-up files to floppy disk
	1.2.4	Understand that files should be regularly saved while working
	1.2.5	Password protect a file where the application provides such a feature
	1.2.6	Describe reliability differences between magnetic media and printed paper. *Range* Electromagnetic Interference Heat
1.3 Describe the people involved in the early development of computing.		*With reference to the following* *Babbage; Pascal; Lovelace; Von Neumann; Hopper; Leibniz;*
	1.3.1	Name people who have made important contributions to the development of computers
	1.3.2	Describe the contributions of these people
	1.3.3	Explain how their contributions were significant in the development of computers
1.4 Describe significant milestones in computer design and development.		*With reference to the following:* *Mark I, ENIAC, EDVAC*
	1.4.1	Name the electronic computers displaying significant milestones in the development of computers.
	1.4.2	Describe the significant milestone signified by these computers.
1.5 Describe significant milestones in the development of the microcomputer as known today		With reference to: MITS Altair, Apple I, Intel 8080, Macintosh, IBM PC, Intel 80386
	1.5.1	Name hardware developments significant to the development of the microcomputer of today
	1.5.2	Describe the significant milestones signified by these developments.

Topic 2: Hardware

	Objectives		Achievement Criterias
2.	Distinguish the difference between hardware devices and display their correct operation.		*Students should be able to:*
		2.1.1	Discuss some guidelines in taking proper care of floppy disks, mouse, and keyboard *Range* ✍✍ Avoiding Environmental problems ✍✍ Cleaning Methods ✍✍ Proper Handling
		2.1.2	Describe these major hardware problems which may occur to computer systems in Tonga *Range* ✍✍ Brownout ✍✍ Dust ✍✍ Humidity ✍✍ Power outage ✍✍ Spike
		2.1.3	Discuss ways to prevent or minimise such hardware problems described in 2.1.2 *Range* ✍✍ Air Conditioning ✍✍ House Keeping Method ✍✍ Voltage regulators (UPS, Line Conditioner, Surge Suppressor)
2.2	Distinguish and operate different Input, Output Devices		*Students should be able to:*
		2.2.1	List and classify external peripherals as input or output devices *Range* ✍✍ Joystick ✍✍ Keyboard ✍✍ Microphone ✍✍ Modem ✍✍ Mouse ✍✍ Printer ✍✍ Scanner ✍✍ Speakers ✍✍ VDU
		2.2.2	Differentiate between serial and parallel ports *Range* ✍✍ Transmission method (one bit versus more than one bit)
		2.2.3	Data transfer reliability. Recognise that bits can get lost and data corrupted in transmission *(not examinable)*
		2.2.4	Discuss what a modem is and what it does
		2.2.5	Differentiate between impact and non-impact printers and be able to give examples of each: *Range* ✍✍ Cost ✍✍ Printing mechanism ✍✍ Quality
		2.2.6	Study the type of keys usually found on a qwerty US computer keyboard and the functions of each key-type *Range* ✍✍ Alpha-numeric ✍✍ Editing Keys (Insert, Home, PageUp, PageDown, Delete, End) ✍✍ Function keys (F1-F12) ✍✍ Modifier Keys (Shift, Ctrl, Alt) ✍✍ Navigation Keys ✍✍ Numeric keypad
2.3	Describe and effectively make use of Storage Devices		*Students should be able to:*
		2.3.1	Define and give examples of Primary Storage *Range* ✍✍ CMOS ✍✍ NVRAM ✍✍ RAM ✍✍ ROM
		2.3.2	Define and give examples of Secondary Storage *Range* ✍✍ Magnetic *{3½", ZIP, JAZ, FDD, HDD, Tape}* ✍✍ Optical {CD-ROM, DVD}
		2.3.3	Distinguish between the types of IBM PC 3 ½" and 5¼" floppy disks *Range* ✍✍ Capacity ✍✍ Density ✍✍ Size
		2.3.4	Describe the organisation of disk storage devices *Range* ✍✍ Format ✍✍ Platters ✍✍ Sector ✍✍ Track

Topic 3: Software

Objectives		Achievement Criterias
3. Describe and use Personal Computer Software		*Students should be able to:*
	3.1	Be able to differentiate between hardware and software
	3.2	Know the difference between major programme categories *Range* ✍✍ Application Programs ✍✍ Compilers & Programming Tools ✍✍ Operating System ✍✍ Utilities & Application Extensions (Add-ons)
	3.3	Define and describe preventative measures for Computer viruses *Range* ✍✍ Anti-virus software ✍✍ Boot-sector virus ✍✍ File based virus ✍✍ Host requirements ✍✍ Macrovirus
	3.4	Identify some important microcomputer applications in several fields: *Range* ✍✍ Database: Corel Paradox, IBM Lotus Approach, Microsoft Access ✍✍ Desktop Publishing: Adobe PageMaker, Microsoft Publisher, Quark Xpress ✍✍ Engineering: AutoCAD ✍✍ Entertainment: Flight Simulator, Quake ✍✍ Spreadsheets: Corel Quattro Pro, IBM Lotus 123, Microsoft Excel ✍✍ Word-processing: Corel WordPerfect, IBM Lotus WordPro, Microsoft Word
	3.5	Identify different mechanisms of software distribution and licensing *Range* ✍✍ Commercial ✍✍ Freeware ✍✍ GPL License ✍✍ Public Domain ✍✍ Shareware

Topic 4: Operating System

	Objectives		Achievement Criterias
4.	Describe the Major functions of an Operating System		*Students should be able to:*
		4.1.1	Define an Operating System
		4.1.2	List the main functions of an Operating System *Range* ✍✍ Device Communications ✍✍ File Management ✍✍ Memory Management ✍✍ Process Management
4.2	Describe the available Operating systems and key differentiating factors.		*Students should be able to:*
		4.2.1	Describe the different Operating systems available for microcomputer systems
		4.2.2	Describe advantages of Single-user, Single-tasking Operating Systems *Range* ✍✍ Can only execute one task/application at a time ✍✍ Examples: MSDOS, PCDOS, Mac System 7
		4.2.3	Describe advantages of Single-User, Multi-tasking Operating systems *Range* ✍✍ Has the ability to monitor and execute multiple tasks/applications at the same time. ✍✍ Examples: IBM OS/2, Microsoft Windows 95/98, Microsoft Windows NT
		4.2.4	Describe advantages of multi-user, multi-tasking Operating systems *Range* ✍✍ Has the ability to monitor and execute multiple tasks/applications at the same time as well as provide these services to multiple users. ✍✍ Example: Unix
		4.2.5	Describe advantages of Network Operating Systems *Range* ✍✍ Optimised for providing file and print services for networked computers. ✍✍ Example: Microsoft Windows NT Server, Novell NetWare
4.3	Describe the start up procedure of a reference IBM PC Compatible Computer		*Students should be able to*
		4.3.1	Describe the relationship between the hardware and the BIOS *Range* ✍✍ Master Boot Sector (MBS) –or- Master Boot Record ✍✍ OS Startup files *(specific names not examinable)* ✍✍ System Boot Sector (SBS)
		4.3.2	Create a system Startup floppy diskette *Range* ✍✍ Start the system from floppy disk
			Notice: Due to the variance in Computer hardware, the terminology used for the IBM PC has been isolated here as a specific example of how a computer system can start.
4.4	Describe and Manage data stored in a filing system including general information maintenance.		*Students should be able to*
		4.4.1	Describe a File System *Range* ✍✍ File Naming Conventions ✍✍ Hierarchical File System
		4.4.2	Perform simple file management tasks *Range* ✍✍ Copy a file to a floppy diskette ✍✍ Copy/Move files ✍✍ Create a folder/directory ✍✍ Delete a folder/directory ✍✍ Rename a folder/directory
		4.4.3	Given a listing of files, identify file attributes *Range* ✍✍ Creation Date ✍✍ File names ✍✍ File Size ✍✍ Folder/Directory Names *Examination questions will clearly indicate differences between above mentioned attributes.*
		4.4.4	Perform the following operations using the Operating system supplied tools *Range* ✍✍ Change the date and Time

Topic 5: Word-processing

	Objectives		Achievement Criterias
5.1	Demonstrate an understanding of word-processing principles and terminology		*Students should be able to:*
		5.1.1	Describe the advantages of computer word-processing
		5.1.2	The principles of word-processing *Range* ✍✍ Document creation ✍✍ Open editing ✍✍ Printing
		5.1.3	Describe word-processing terms, and be able to use the features *Range* ✍✍ Mail-merge ✍✍ Thesaurus
		5.1.4	Font terminology and definition *Range* ✍✍ Font-family ✍✍ Point-size ✍✍ Proportional and fixed spacing ✍✍ Serif, Sans-serif ✍✍ Style/Effect {normal, **bold**, *italic*, ***bolditalic***} ✍✍ Typeface
5.2	Customise application configuration		*Students should be able to:*
		5.2.1	Customise and save application default settings to personal requirements *Range* ✍✍ Font-size ✍✍ Margin settings ✍✍ Paper orientation ✍✍ Paper-size
5.3	Use word-processing principles and functions to enter, edit and format text		*Students should be able to*
		5.3.1	Demonstrate their ability to use the cursor (navigation keys) and insert/type-over functions
		5.3.2	Describe and change font-face formatting *Range* ✍✍ Point-size ✍✍ Special Effects { super-script, sub-script } ✍✍ Style
5.4	Demonstrate the use of text manipulation and application assistance facilities.		*Students should be able to*
		5.4.1	Use the Help facility
		5.4.2	Use spell checking and dictionary options *Range* ✍✍ Run a spell-check ✍✍ Select a Dictionary
		5.4.3	Use search, find and replace options
		5.4.4	Block/Select, move, and copy text
		5.4.5	Sort a short list, or table.

5.5	Demonstrate understanding of text and page layout		*Students should be able to*
		5.5.1	Format the document using line and paragraph options
		5.5.2	Manage, Use tabulation (tab-stop) formatting *Range* ✍✍ Center ✍✍ Decimal ✍✍ Left-aligned ✍✍ Right-aligned
		5.5.3	Manage, Use Tables *Range* ✍✍ Create a Table ✍✍ Insert / Delete Cells ✍✍ Size Table Cells
		5.5.4	Describe and change Paragraph formatting *Range* ✍✍ Alignment { left, centre, right, justified } ✍✍ Indentation { left, right, hanging/first-line }
		5.5.5	Describe and change Page Formatting *Range* ✍✍ Columns ✍✍ Paper orientation
		5.5.6	Footnoting facilities *Range* ✍✍ Auto-numbering ✍✍ Endnotes ✍✍ Footnotes
		5.5.7	Inserting Auto page-numbering
		5.5.8	Inserting a Page Header and Page Footer
5.6	Use word-processing file manipulation techniques		*Students should be able to:*
		5.6.1	Carry out a range of file manipulation procedures *Range* ✍✍ Create a new document ✍✍ Edit ✍✍ Save, Save As
5.7	Preview and print word-processing files		*Students should be able to*
		5.7.2	Use a print preview
		5.7.3	Control print operations *Range* ✍✍ Print Selected pages ✍✍ Print selected text ✍✍ Print the document
			Students should be able to:
5.8	Use word-processing facilities to support Tongan Language specific communications requirements.		*Students should be able to*
		5.8.1	Select fonts with the appropriately accented letters for the Tongan Language. ✍✍ ä, ë, ï, ö, ü
		5.8.2	Name at least two sample fonts with the appropriately accented letters for the Tongan Language *Range* ✍✍ Any Unicode font with a full "Latin-Extended A" section. ✍✍ TG Arial ✍✍ TG Century Schoolbook ✍✍ TG Times New Roman ✍✍ TG Verdana
		5.8.3	Enter letters with the correct accents *Range* ✍✍ acute (ie. independently standing acute ´ the acute with vowels is not examinable) ✍✍ macron (ie. amacron, emacron, imacron, omacron, umacron ¯)
		5.8.4	Enter language specific words into word-processing language dictionaries *Range* ✍✍ Create Custom Dictionary ✍✍ Delete Custom Dictionary ✍✍ Edit Custom Dictionary ✍✍ Use Custom Dictionary
		5.8.5	Install fonts into operating system.
			Fonts supporting accented characters appropriate for Tonga Language composition are supplied courtesy of No-Moa Publishers and are copyrighted material supplied for use in classrooms servicing the Form 5 national prescription. The font-families are: TG Arial, TG Arial Black, TG Copperplate, TG Lucida Handwriting, TG Times New Roman, and TG Verdana. Use of these fonts in any other context than for which it is being supplied is illegal (Tonga's Copyright Act) and discouraged.

Topic 6: Spreadsheets

	Objectives		Achievement Criterias
6.1	Demonstrate knowledge and uses of spreadsheets		*Students should be able to:*
		6.1.1	Describe the advantages of a spreadsheet;
		6.1.2	Reference a cell *Range* ✍✍ Absolute Reference ✍✍ Relative Reference
		6.1.3	Identify Cell Types *Range* ✍✍ formulas ✍✍ Labels, ✍✍ values,
		6.1.4	Demonstrate the ability to quickly move the cursor about the spreadsheet using the keyboard *Range* ✍✍ End ✍✍ Home ✍✍ Page Down ✍✍ Page Up ✍✍ Ctrl (or Command) + (above list)
		6.1.5	Insert and delete columns or rows
		6.1.6	Name common spreadsheet programs *Range* ✍✍ Corel Quattro Pro ✍✍ IBM Lotus 123 ✍✍ Microsoft Excel
6.2	Produce a simple spreadsheet file containing labels, values and mathematical formulae		*Students should be able to:*
		6.2.1	Use online help where available
		6.2.2	Use spreadsheet functions to enter, edit and calculate values *Function: SUM, AVERAGE, COUNT, IF, MAX, MIN* *Operators: addition, subtraction, multiplication, division*
		6.2.3	Describe and change cell formatting *Range* ✍✍ Cell alignment ✍✍ Cell width ✍✍ Date ✍✍ Text
		6.2.4	Describe and change numeric cell formatting *Range* ✍✍ Currency ✍✍ Fixed ✍✍ Percent
6.3	Manage spreadsheet files		*Students should be able to*
		6.3.1	Demonstrate data-integrity practises *Range* ✍✍ Compare data with source ✍✍ Use check totals
		6.3.2	Print a page using appropriate orientation *Range* ✍✍ Landscape ✍✍ Portrait
6.4	Manipulate the data in the spreadsheet		*Students should be able to*
		6.4.1	Fill Cells
		6.4.2	Graph cell ranges within a spreadsheet using default settings
		6.4.3	Apply "what if" queries to a spreadsheet
		6.4.4	Sort a range of data on a given column
6.5	Build and modify spreadsheet based charts and graphs.		*Students should be able to*
		6.5.1	Describe two different charts/graphs available in Spreadsheet applications *Range* ✍✍ Bar ✍✍ Column ✍✍ Line ✍✍ Pie
		6.5.2	Create a chart/graph from a 3 rows by 3 columns table

Topic 7: Databases

	Objectives		Achievement Criterias
7.1	Demonstrate knowledge of the uses and features of databases.		*Students should be able to:*
		7.1.1	Describe the advantages of using databases;
		7.1.2	Describe what is meant by a relational database and its advantages over flat-file databases
		7.1.3	Describe the importance of careful design of a database table *Range* ✍✍ Field name ✍✍ Field type ✍✍ Field width
		7.1.4	Describe techniques used to convert data into information *Range* ✍✍ Calculations {eg. SUM, COUNT} ✍✍ Filter/Select ✍✍ Sorting
		7.1.5	Distinguish between data and information
		7.1.6	Identify at least one example of database programs *Range* ✍✍ Corel Paradox ✍✍ Lotus Approach ✍✍ Microsoft Access ✍✍ Microsoft FoxPro
		7.1.7	Identify at least two examples of database applications *Range* ✍✍ Inventory ✍✍ Library Catalogue ✍✍ Reservations Booking Systems ✍✍ Telephone Directory
7.2	Create and Design a Database		*Students should be able to:*
		7.2.1	Design a flat-file database
		7.2.2	Design a form/report based on two tables in a relational database.
		7.2.3	Design a report based on queries *Range* ✍✍ AND ✍✍ LIKE ✍✍ OR
		7.2.4	Demonstrate data-integrity practices *Range* ✍✍ Compare data with source ✍✍ Input controls ✍✍ Use check totals
		7.2.5	Define what is a Primary key
		7.2.6	Understand the differences of a field and a calculated field
		7.2.7	Describe and perform table maintenance *Range* ✍✍ Addition ✍✍ Delete ✍✍ Modification
		7.2.8	Design a report using calculated fields: *Range* Average Count Total
		7.2.9	Order display of records in a table, form or reports
7.3	Manipulate data in a database		*Students should be able to*
		7.3.1	Use on-line help
		7.3.2	Sort a database on one or two fields *Range* ✍✍ Ascending ✍✍ Descending *Database sorting is language specific and will not correctly sort on Tonga Language specifications unless the database is specifically configured for it.*
		7.3.3	Apply a query using at least one database logic functions *Range* ✍✍ AND ✍✍ OR

A common relational database will be supplied to schools for use in Internal Assessment exercises and will be the reference database from which database query and design examination questions will be based.

Topic 8: Programming

	Objectives		Achievement Criterias
8.1	Apply fundamental principles of problem analysis.		*Students should be able to:*
		8.1.1	Apply problem analysis and decision making to problems
		8.1.2	Apply principles of logic flow in relation to problem solving
8.2	Apply principles of planning for a computer program		*Students should be able to*
		8.2.1	Demonstrate problem specification using at least one method such as ✍✍ Decision Tables ✍✍ Decision Trees ✍✍ Flowcharts ✍✍ Structure Diagrams
		8.2.2	Research a problem in terms of its input/output requirements.
		8.2.3	Evaluate the suitability of developing a computer program to solve a problem
		8.2.4	Correctly apply and interpret program flow control *Range* ✍✍ Decision-making ✍✍ Iteration
		8.2.5	Reference and initiate sub-modules, functions. *Only simple examples will be examinable*
		8.2.6	Apply the use of decision making *Range* ✍✍ Logical operators {and, not, or} ✍✍ Relational operators {less than, less than or equal, equal, greater than, greater than or equal}
8.3	Code a given program from a given structure diagram		Programs contain sequence, selection and repetition Within this range, *Students should be able to:*
		8.3.1	Define and use variables, and name them so they describe the purpose for which they are created
		8.3.2	Define and use storage allocation specifications for variables, for example the use of VAR in Pascal and DIM in QBasic.
		8.3.3	Use documentation features where appropriate
		8.3.4	Display the full range of file management skills in handling the code files, including backups
		8.3.5	Write program code which leads to the solution of the problem as specified.
8.4	Apply String Manipulation Methodologies		*Students should be able to*
		8.4.1	Apply String Manipulation functions *Range* ✍✍ Date and Time manipulation ✍✍ String manipulation {determine length, extract a string token, convert between strings and numeric}
8.5	Apply standard mathematical functions		*Students should be able to*
		8.5.1	Apply Mathematical Functions *Range* ✍✍ Addition, subtraction, multiplication, division, exponentiation ✍✍ Determine the absolute value ✍✍ Determine the Integer of a numeral

Topic 9: Elective Option - Networking

	Objectives		Achievement Criterias
5	Describe and use Microcomputer Networking		*Students should be able to*
		9.1.1	Describe the advantages of networking over standalone
		9.1.2	Describe and diagram the different topologies in common use *Range* ✍✍ Bus ✍✍ Star ✍✍ Token – Ring *(not examinable)*
		9.1.3	Describe two advantages and two disadvantages of the major cabling infrastructures in common use *Range* ✍✍ Co-axial (RG58) ✍✍ Concentrators / Hubs ✍✍ Fibre-Optic (FDDI) ✍✍ Unshielded Twisted Pair (Category-5)
9.2	Identify and use Workgroup Applications		*Students should be able to:*
		9.2.1	Describe the advantages of workgroup applications
		9.2.2	Describe workgroup applications *Range* ✍✍ Conferencing, Notice Boards ✍✍ E-mail ✍✍ Whiteboard
9.3	Install and configure Network Workstations		*Students should be able to:*
		9.3.1	Describe and configure network interface card (NIC) communication with the computer. *Range* ✍✍ Device driver configuration ✍✍ Interrupt Request Line (IRQ) ✍✍ IO Base Address
		9.3.2	Install and configure personal computer network client services *Range* ✍✍ Microsoft Client ✍✍ NetWare Client
		9.3.3	Install and configure network protocols *Range* ✍✍ NetWare IPX/SPX ✍✍ TCP/IP
9.4	Install and configure Internet Client Services required to access Internet Information Services		*Students should be able to:*
		9.4.1	Configure workstations for TCP/IP client services *Range* ✍✍ Domain Name Services ✍✍ Gateway ✍✍ IP Address
		9.4.2	Use a web browser to traverse HTML links *Range* ✍✍ Follow Links ✍✍ http: URL Addresses
		9.4.3	Use networked resources to gather information *Range* ✍✍ Multi-User Gaming ✍✍ Networked Encyclopedia

Topic 10: Elective Option - Desktop Publishing on a Personal Computer

Objectives		Achievement Criterias
10.1 Demonstrate knowledge of the uses and features of desktop publishing on a personal computer		*Students should be able to:*
	10.1.1	Identify uses for Desktop Publishing (DTP)
	10.1.2	Demonstrate the principles of page layout appropriate to the document being produced
	10.1.3	Identify at least two DTP applications *Range* ✍✍ Adobe PageMaker ✍✍ Microsoft Publisher ✍✍ Quark Xpress
10.2 Produce DTP documents		*Students should be able to*
	10.2.1	Load and quit a DTP program
	10.2.2	Use the online help facility if available
	10.2.3	Load a pre-formatted word-processed document into the DTP document and edit and reformat appropriately
	10.2.4	Manipulate Graphic Files *Range* ✍✍ Insert/Place a graphics file ✍✍ Size a graphic ✍✍ Move a graphic file within the document
	10.2.5	Use the following Desktop Publishing Facilities *Range* ✍✍ Boxes ✍✍ Headlines ✍✍ Multi-columns ✍✍ Text flow ✍✍ Use lines
	10.2.6	Add and remove pages as required without loss of essential data
10.3 Manage DTP files		*Students should be able to*
	10.3.1	Demonstrate ability to manage files *Range* ✍✍ Create ✍✍ Display directory (folder) contents ✍✍ Locate directories (folders) ✍✍ Locate Files ✍✍ Name ✍✍ Save
	10.3.2	Print documents.

Topic 11: Elective Option - Using Personal Computers to Make Computer Presentations

Objectives		Achievement Criterias
11.1 Demonstrate knowledge of the uses and features of desktop publishing on a personal computer		*Students should be able to:*
	11.1.1	Identify uses for Computer based Presentations
	11.1.2	Identify at least two Computer Presentation applications *Range* ✍✍ Corel Presentation ✍✍ Microsoft Internet Explorer ✍✍ Microsoft PowerPoint ✍✍ Netscape Navigator
11.2 Exploit the features of computer applications		*Students should be able to:*
	11.2.1	Demonstrate awareness of the potential that different applications have for supporting presentations
	11.2.2	Identify features of particular applications which would be useful in the development of a presentation
	11.2.3	Select features from applications which are to be incorporated within a presentation.
11.3 Plan work that is to exploit features of computer applications		*Students should be able to:*
	11.3.1	Construct a paper plan of a presentation which identifies applications to be used in the development of material for presentation
	11.3.2	Identify and select particular features of applications which are to be incorporated within the presentation
11.4 Draw together computer generated materials		*Students should be able to:*
	11.4.1	Construct elements of the presentation in appropriate applications
	11.4.2	Organise the material within the files of the applications.
	11.4.3	Draw together material from the files of the applications to compile as a single complete presentation
11.5 Identify elements of sound practise		*Students should be able to:*
	11.5.1	List the decisions which were taken in the choices made in the construction process
	11.5.2	Describe elements of sound practise which were considered during the construction process
11.6 Present the topic		The information must
	11.6.1	Be communicated to the target audience, and
	11.6.2	Meet its design specifications

Topic 12: Elective Option - Network Intermediate Level

	Objectives		Achievement Criterias
12.1	Install and Configure Network Clients		*Students should be able to:*
		12.1.1	Remove and install a network card. *Range* ✍✍ Configure the Hardware Interrupt ✍✍ Configure the Hardware IO Base Address ✍✍ PCI or ISA ✍✍ Plug & Play
		12.1.2	Install and Configure workstation client software *Range* ✍✍ Microsoft Network Client ✍✍ Microsoft Windows 95/98 Client ✍✍ MS-DOS Client ✍✍ Novell NetWare Client
		12.1.3	Install and Configure network protocols *Range* ✍✍ NetWare IPX/SPX ✍✍ TCP/IP {IP address, IP Netmask, Host Name, DNS}
12.2	Install and Configure Basic Infrastructure		*Students should be able to:*
		12.2.1	Install network cabling *Range* ✍✍ Co-ax ✍✍ Concentrator (HUB or repeater) ✍✍ Twisted Pair
12.3	Install and configure basic network resource sharing services		*Students should be able to:*
		12.3.1	Install and configure file-sharing *Range* ✍✍ Share folders ✍✍ Use passwords to restrict share access
		12.3.2	Install and configure printer-sharing Range: ✍✍ Install printer support software ✍✍ Share printer resources ✍✍ Use passwords to restrict printer access
12.4	Install and configure an example information service		*Students should be able to:*
		12.4.1	Identify different World Wide Web Servers *Range* ✍✍ Apache ✍✍ Internet Information Server ✍✍ Netscape
		12.4.2	Install and configure a workstation based World Wide Web Server *Range* ✍✍ Configure default filenames ✍✍ Configure Home Directory ✍✍ Configure IP Address ✍✍ Set up virtual directories
		12.4.3	*Apply TCP/IP testing utilities* *Range* ✍✍ Ping localhost, ping IP-address, ping name-address ✍✍ telnet chargen, telnet qotd, telnet daytime

Internally Assessed Coursework Schedule

Introduction

Each school develops within the framework of the course prescription and assessment scheduling the coverage of topics that better fits its resources and student needs. Although not directly recognised in the prescription, it is recommended that formative assessment schedules be incorporated in the school's Internal Assessment program to maximise the use of assessment programs to enhance the skills and knowledge of students and not merely an evaluation of history.

The importance of the Internal Assessment program is not in its high weighting, but in the flexibility it offers students and staff to achieve a high level of skills and knowledge in the course.

Basic Coursework Requirements

Each teacher must design and submit a coursework programme. The submitted programme is evaluated to assist teachers ensure the prescription standards are achieved. The submitted programme must meet the following compulsory task requirements:

1. The Internal Assessment programme will be designed out of 100 percent
2. Computer Operations & Word-processing will be assessed by an Examination Unit provided common assessment task (CAT) weighted at 20%
3. Spreadsheets will be assessed by an Examination Unit provided common assessment task (CAT) weighted at 20%
4. Database will be assessed by an Examination Unit provided common assessment task (CAT) weighted at 20%
5. Programming will be assessed by an Examination Unit provided common assessment project weighted at 30%
6. Elective topics will be assessed by teacher designed assessment tasks. The weighting for each topic will be 10%.

Designing an Assessment Task

The teacher designed assessment task must indicate achieving a significant proportion of the elective topic.

The teacher designed marking schedule must clearly specify objectively measurable skills achievement grading, such as can do, cannot do, as opposed to subjective measures such as excellent, average, poor.

The Teacher Designed Assessment task should be coordinated with class learning activities and are not meant for teachers to pass the full responsibility of learning the task to students. The teacher must ensure coverage of all the skills required for the student to achieve full marks in the assessment task.

The case may exist where students prefer an independent study approach to a topic not covered by the rest of the class and this is one of the advantages of elective subjects. Where the teacher finds students capable of independent study, a supervisory process should be put in place to ensure these students are progressing with their studies and make a high achievement of the skills they are pursuing.

Course Approval

Each teacher of Computer Studies must apply to the Examination Unit by the 1st of March in each year for approval to teach the planned internally assessed coursework schedule. For approval to be given the following must be sent to the Examination Unit.

A complete summary Internal Assessment Schedule. This must be completed to show:

?? all assessment tasks that will be given during the year;
?? marking schemes for all teacher designed tasks
?? timing of all assessment tasks

Assessment Time-Frame

ASSESSMENT ITEM	APPROXIMATE DATE
CAT 1 – Word processing	Mid March
CAT 2 – Spreadsheets	3rd week May
CAT 3 – Databases	End July
CAP – Programming	Mid September
TDAT – Elective	Mid October
Examination	November