

**South Pacific Board
For
Educational Assessment**



**PACIFIC SENIOR SECONDARY
CERTIFICATE**

**COMPUTER STUDIES
PRESCRIPTION**

Prescription Effective as from 1st January 2007

TABLE OF CONTENTS

Contents	Page
INTRODUCTION	3
COURSE STRUCTURE	3
BASIC REQUIREMENTS.....	4
Topic 1 (Compulsory). <i>Personal Computer Systems And Management</i>	6
Topic 2 (Compulsory). <i>Using Personal Computer Applications</i>	11
Topic 3 (Optional). <i>Programming Personal Computers</i>	15
Topic 4 (Optional). <i>Desktop Publishing On A Personal Computer</i>	16
Topic 5 (Optional). <i>Design a Simple Web Site</i>	17
Topic 6 (Optional). <i>Processing Digital Images</i>	18
Topic 7 (Optional). <i>Using Personal Computers To Make Computer Presentations</i>	19
Topic 8 (Optional). <i>Computer Graphics</i>	20
Topic 9 (Optional). <i>Exchange Messages Using e-Mail</i>	21
Topic 10 (Optional). <i>Keyboarding Skills</i>	22
Topic 11 (Optional). <i>The History Of Computers</i>	23
Topic 12 (Optional). <i>Internet Research</i>	25
INTERNALLY ASSESSED COURSEWORK SCHEDULE	26
Introduction.....	26
Generic Skills.....	26
Basic Coursework Requirements.....	26
Course Approval.....	26
SUMMARY INTERNAL ASSESSMENT SCHEDULE.....	27
INTERNAL ASSESSMENT PROGRAMME.....	28
Topic 1. <i>Personal Computer Systems And Management</i>	28
Topic 2. <i>Using Personal Computer Applications</i>	30
Topic 3. <i>Programming Personal Computers</i>	33
Topic 4. <i>Desktop Publishing On A Personal Computer</i>	34
Topic 5. <i>Design a Simple Web Site</i>	34
Topic 6. <i>Process Digital Images</i>	35
Topic 7. <i>Creating Computer Presentations</i>	36
Topic 8. <i>Computer Graphics</i>	37
Topic 9. <i>Exchange Messages Using e-Mail</i>	37
Topic 10. <i>Keyboarding Skills</i>	38
Topic 11. <i>History of Computers</i>	38
Topic 12. <i>Internet Research</i>	39

Rationale

Computing is a study that is best approached by using concepts of mastery learning. Skills once identified, must be mastered by the learner, so students need an environment where they can demonstrate their ability to master them. Computer resources are diverse and fast evolving both in terms of hardware and software. The first prescription which came into effect in February 1997 has become obsolete as a result. Thus, the need for this revised version. This prescription concentrates on defining computer skills regardless of the platform students work with. Similarly, skills in using applications such as spreadsheets are independent of the application package being used. For these reasons, internal assessment is a very important part of this prescription.

Course Structure

The course is divided into 12 topics - two compulsory (core) topics (Topics 1 & 2) and 10 optional topics (Topics 3 - 12).

The following table outlines the topics and their weightings. Note that Topic 3 (Principles of Computer Programming) carries a weight of 20% while the remaining optional topics carry a weight of 10% each.

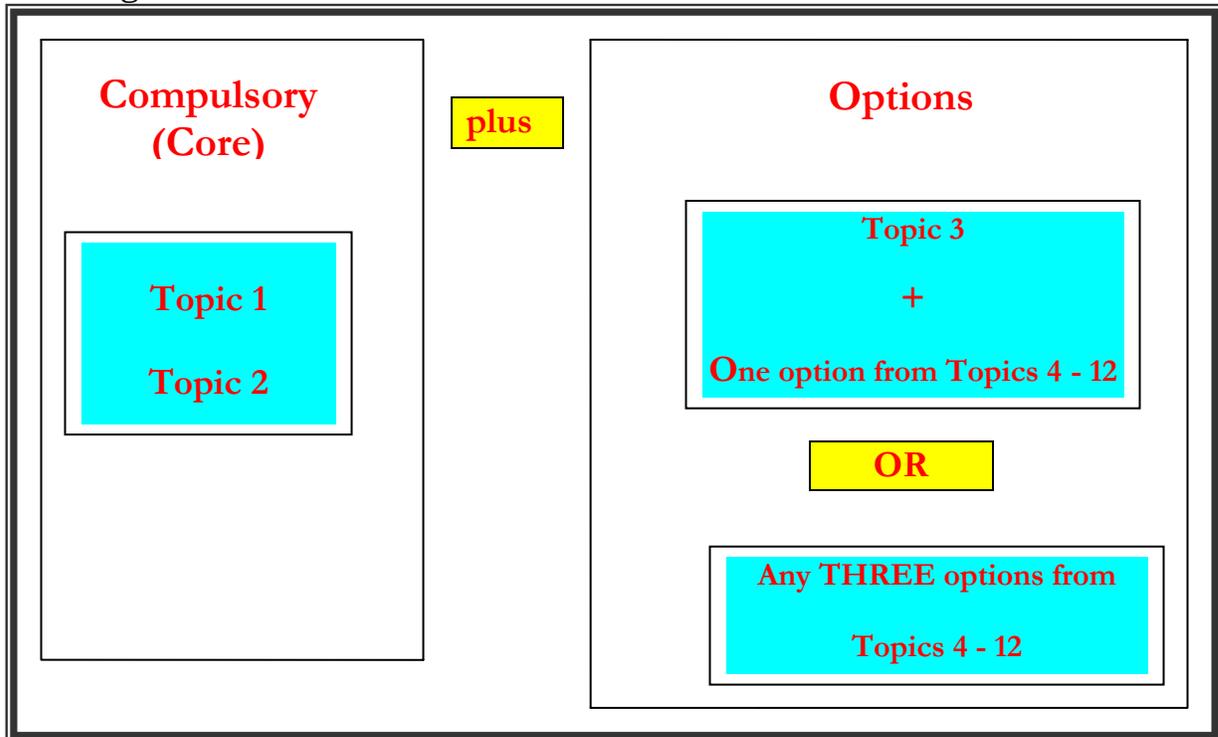
THE COMPUTER STUDIES PRESCRIPTION STRUCTURE

Computer Studies Content Areas	Requirement status	Topic % weightings	
1. Personal computer systems and management.	Core	IA – 40%	70%
2. Using personal computer applications: word-processing; spreadsheet; single table database.	Core	Ex – 30%	
3. Principles of computer programming.	Optional	20	30% (IA)
4. Desk Top Publishing	Optional	10	
5. Data integration between computer applications	Optional	10	
6. Computers for leisure and learning	Optional	10	
7. Computer presentations	Optional	10	
8. Computer graphics	Optional	10	
9. Using e-mail	Optional	10	
10. Keyboarding skills	Optional	10	
11. History of Computing (available 1998)	Optional	10	
12. Internet Research	Optional	10	
TOTAL			100%

Note:

1. Students selecting Topic 3 are required to take ONE other option from Topics 4 – 12.
2. Students NOT selecting Topic 3 are required to take THREE options from Topics 4 – 12.

The diagram below shows the structure of the course.



Basic Requirements

1. Teachers designing their PSSC course must include BOTH core topics (about 70% of the total programme) and the selected optional topics. Students need not be constrained to the same set of optional topics provided the teacher has the resources for students to select from the range of topics. If teachers feel they can manage a range of topics, they must submit IA plans for each option to be taught in their class.
2. The programme will be assessed by a combination of external examination, ONE common assessment task (CAT) and internally assessed course work. The weighting ratio will be 30% for the CAT based on the core topics, 30% for teacher designed tasks (TDTs) to assess the options, 10% for teacher observation of students in the core work, and 30% for the external examination. This weighting will be applied by SPBEA as part of their standard processing procedures.

Internal Assessment:	
CAT : 30%	
Observation : 10%	70%
TDTs : 30%	
Examination	30%
TOTAL	100%

3. Internally assessed coursework will be moderated by SPBEA.
4. The external examination will examine **only the compulsory (core) section** of the prescription.
5. The examination content weightings will be as follows:

Topic	Content	Weight (%)
1	Computer Systems	50
2	Wordprocessing	10
	Spreadsheets	20
	Databases	20
TOTAL		100

TOPIC 1 (Compulsory)

DESKTOP COMPUTER SYSTEMS AND MANAGEMENT

Aim: To train students in the basic skills in :

- handling desktop computer hardware and ensuring all components operate as an integrated unit;
- managing computer files through an ability to use the computer's operating system or file management software; and
- protecting files from all forms of corruption and understand related ethical issues.

Objectives: Students should be able to:

- the relationship between hardware and data,
- data types,
- data handling including input and output..
- describe, operate and maintain the hardware components of a desktop computer;
- describe the purpose of and functions of the operating system;
- describe the purpose of the computer keyboard;
- operate a computer printer.
- describe how computer data is stored.
- describe desktop computer software;
- describe the graphical user interface (GUI)
- locate, manage and protect computer files using file management procedures.
- explore legal, ethical and social issues related to accessing data held in computer systems.
- know the key roles and responsibilities of people in the field of information and software technology.

Assessment Criteria

The above objectives are further sub-divided into sets of **learning outcomes**.

Assessment of the outcomes can be done by:

- (i) observation by the teacher on a "can-do can't do" basis;
- (ii) students demonstrating mastery of practical skills;
- (iii) student demonstrating that their knowledge and understanding through written or practical tests.

All practical based outcomes will be assessed internally by classroom teachers. Outcomes to be assessed by observation **MUST** be assessed but will be **zero** weighted in the summative assessment programme.

Range

Where necessary, the prescription specifies what concepts, items, situations etc., are to be studied. This list is referred to as a **Range**. Only those concepts listed within the range are to be tested.

Topic 1	Objective	Outcomes	
1	<p>1.1 Describe, operate and maintain the hardware components of a desktop computer.</p> <p><i>What is inside the Box</i></p> <p><i>What connects to the box.</i></p> <p><i>How do the parts work together</i></p> <p><i>What problems can affect the functioning of a PC</i></p>	<p>1.1.1</p> <p>1.1.2</p> <p>1.1.3</p> <p>1.1.4</p> <p>1.1.5</p> <p>1.1.6</p>	<ul style="list-style-type: none"> • Define and describe the role of the components found inside desktop computer box. <p>Range:</p> <ul style="list-style-type: none"> ▪ <i>Motherboard</i> ▪ <i>Power supply</i> ▪ <i>Processor (CPU)</i> ▪ <i>Memory (RAM& ROM)</i> ▪ <i>Hard disk drives</i> ▪ <i>Video card</i> ▪ <i>Optical CD/DVD drives</i> <ul style="list-style-type: none"> • Understand the function of expansion slots to enhance the PC's capabilities <p>Range:</p> <ul style="list-style-type: none"> ▪ <i>Expanded memory</i> ▪ <i>Modems</i> ▪ <i>Sound cards</i> ▪ <i>Graphics cards</i> ▪ <i>Network card</i> <ul style="list-style-type: none"> • Define and describe the role of the basic components that connect to a desktop computer box. <p>Range:</p> <ul style="list-style-type: none"> ▪ <i>Keyboard</i> ▪ <i>Pointing device; mouse</i> ▪ <i>Video monitor</i> ▪ <i>Printers</i> <ul style="list-style-type: none"> • Define and describe the optional features which can be connected to a computer <p>Range:</p> <ul style="list-style-type: none"> ▪ <i>Speakers</i> ▪ <i>Scanners</i> ▪ <i>Flash memory drives</i> ▪ <i>Cameras (Digital, Video, Web)</i> ▪ <i>Projectors</i> ▪ <i>Multifunction devices (printer/ scanner/fax)</i> <ul style="list-style-type: none"> • Understand and describe <p>Range:</p> <ul style="list-style-type: none"> ▪ <i>Bus lines</i> ▪ <i>USB slots</i> ▪ <i>Serial/ parallel ports</i> ▪ <i>Fireware</i> <ul style="list-style-type: none"> • describe and maintain the environmental conditions required by the computer system;

Topic 1	Objective	Outcomes	
		1.1.7	<ul style="list-style-type: none"> identify simple hardware faults and problems. Range: <ul style="list-style-type: none"> power loss, loose or disconnected plugs. <p>discuss power supply problems in the country, their possible effects on desktop computers, and steps that can be taken to overcome the problems.</p>
1	1.2 Describe the purpose and functions of the operating system.	1.2.1	<ul style="list-style-type: none"> Describe the desktop computer's operating system and the six basic functions Range: <ul style="list-style-type: none"> Processor management Memory management Device management Storage management Application interface User interface
		1.2.2	<ul style="list-style-type: none"> Identify and describe chip-based operating systems. Range: <ul style="list-style-type: none"> Digital Camera's Gaming systems Digital media players Cell phones Calculators
1	1.3 Describe the purpose of the Keyboard .	1.3.1	<ul style="list-style-type: none"> Describe the use of keys on a QWERTY keyboard in particular identify major keyboard areas. Range: ENTER (RETURN), TAB, SPACE, BACKSPACE, ESC; <i>Control keys</i> CONTROL, SHIFT, ALT; <i>Function keys</i>; F1...; <i>numeric keypad</i>; <i>Alphanumeric keys and document keys</i>: HOME, END, INS, PgUp, PgDn, DEL, Print Screen (Prt Sc)
1	1.4 Operate a desktop computer printer .	1.4.1 1.4.2 1.4.3 1.4.4 1.4.5	<ul style="list-style-type: none"> Identify different printer technologies Range: <i>impact (ribbon), inkjet, laser</i> Connect a printer to a desktop computer so they work correctly. Manage print jobs. Range: <i>View print queue. Delete a print job</i> Print data from an application software package. Explain simple printer error messages, and take correcting action

Topic 1	Objective	Outcomes	
			Range: <i>paper jams, out of paper, out of toner/ink.</i>
1	1.5 Describe how computer data is stored.	1.5.1 1.5.2 1.5.3 1.5.4 1.5.5 1.5.6	<ul style="list-style-type: none"> • Describe ROM as read only memory used by the operating system • Describe RAM memory and its purpose in the processing of information. • Describe the technology employed with memory and disk storage, their advantages and disadvantages. Range: <i>volatile and non-volatile memory.</i> • Explain storage concepts and the relation between them in terms of simple ASCII code and binary numbers. Range: <i>bits and byte;</i> • Describe other forms of data that are stored; <ul style="list-style-type: none"> ▪ graphical (Range: <i>Bitmap, Jpeg</i>) ▪ video (Range: <i>avi, mpg</i>) ▪ audio (Range: <i>wav, mp3</i>) • Describe data compression techniques Range: <ul style="list-style-type: none"> ▪ <i>lossy (mp3)</i> ▪ <i>loseless (zip)</i>
1	1.6 Describe desktop computer software	1.6.1 1.6.2 1.6.3 1.6.4	<ul style="list-style-type: none"> • Describe system and application software and their relationships. • Describe common applications and their purposes. Range: <i>word-processing, spreadsheet, database, desk top publishing, graphics, communications.</i> • Describe a computer program as a sequence of coded instructions which the computer interprets • Name at least two common programming languages.
1	1.7 Describe the graphical user interface (GUI)	1.7.1	<ul style="list-style-type: none"> • Understand and describe the basic elements of a GUI Range: <ul style="list-style-type: none"> ▪ <i>Mouse point and click actions</i> ▪ <i>Menus and Toolbars</i> ▪ <i>Command buttons, Check boxes, option buttons, list boxes, dialog boxes, tree structures</i>
1	1.8 Locate, manage and protect computer files using file management procedures.	1.8.1 1.8.2	<ul style="list-style-type: none"> • Locate and view the contents of a file using an appropriate software application. • Understand and be able to explain the naming of a computer file (and folder), its

Topic 1	Objective	Outcomes	
		1.8.3 1.8.4 1.8.5 1.8.6 1.8.7 1.8.8 1.8.9	<p>name and extension. Range: <i>txt, exe, xls, doc, mdb, pdf</i></p> <ul style="list-style-type: none"> • Explain the importance of meaningful file and folder (directories) names and the advantages of grouping files within folders. • Navigate along a directory tree (folder hierarchy). • Locate files using available file name search utilities. Create, locate and display the contents of directories (folders). • Copy, rename, and move files to different directories (folders), and delete a file. • Explain the importance of regularly saving and backing-up files. • Handle storage media appropriately so as to avoid damage. Range: <i>Floppy disks, CD's, flash memory</i> • Explain why computer systems need protecting against computer viruses using appropriate anti-virus software.
1	1.9 Explore legal, ethical and social issues related to accessing data held in computer systems.	1.9.1 1.9.2 1.9.3 1.9.4	<ul style="list-style-type: none"> • Identify and discuss legal and ethical issues; Range: <i>individual privacy, intellectual property, corporate confidentiality, piracy, copyright, security and protection.</i> • Demonstrate their responsibility to other peoples data at all times. • Discuss the changing nature of work and enterprise such as Range: <i>employment, telecommuting, virtual office, video conferencing</i> • Discuss equity issues relating to computers Range: <i>gender, disability, and culture.</i>
1	1.10 Know the key roles and responsibilities of people in the field of information and software technology.	1.10.1 1.10.2	<ul style="list-style-type: none"> • Describe key roles within the information and software technology field • Examine the contribution of people to the field of information and software technology Range: <ul style="list-style-type: none"> ▪ <i>project manager</i> ▪ <i>systems analyst</i> ▪ <i>software engineers</i> ▪ <i>programmers</i> ▪ <i>multimedia specialists</i> ▪ <i>data entry operators</i> ▪ <i>technicians such as repair, maintenance</i> ▪ <i>support staff such as help desk</i> ▪ <i>training specialists</i> ▪ <i>users</i>

TOPIC 2 (Compulsory)

USING PERSONAL COMPUTER APPLICATIONS

Aim: To train students in the basic skills of

- using a word-processor;
- using a spreadsheet; and
- using a single table database.

Objectives: Students should be able to:

- demonstrate an understanding of word-processing principles and terminology;
- load and exit a word-processing application and use the menu and toolbar;
- use word-processing principles and functions to enter, edit and format text;
- preview and print word-processing files.

- demonstrate knowledge and uses of spreadsheets;
- produce a simple spreadsheet file containing labels, values and mathematical formulae;
- manipulate the data in the spreadsheet;
- manage spreadsheet files.

- demonstrate knowledge of the uses and features of databases;
- manipulate data in a database;
- create a database using text numbers and arithmetic formulae;
- manage database files.

Assessment Criteria

The above objectives are further sub-divided into sets of **learning outcomes**.
Assessment of the outcomes can be done by:

- (iv) observation by the teacher on a “can-do can’t do” basis;
- (v) students demonstrating mastery of practical skills;
- (vi) student demonstrating that their knowledge and understanding through written or practical tests.

Practical based outcomes will be assessed by three common assessment tasks (CATs).
In addition, there are outcomes to be assessed by teacher observation.

Topic	Objective	Outcomes	
2	Word-processing		
2	2.1 Demonstrate an understanding of word-processing principles and terminology.	2.1.1 2.1.2 2.1.3 2.1.4	<ul style="list-style-type: none"> • Understand the difference between a text processor and a document processor. • Understand the principles of word-processing. Range: <i>document creation, retrieval, editing, formatting, storing, printing,</i> • Define current word-processing concepts. Range: <i>mail-merge, spellcheck, thesaurus, wysiwyg, word-wrapping</i> • Understand font terminology. Range: <i>font, type (serif, sans serif), size (point), style (bold, italics, underline), proportional and fixed spacing.</i>
2	2.2 Load and exit a word-processing application and use the menu and toolbar.	2.2.1 2.2.2 2.2.3	<ul style="list-style-type: none"> • Load and close a word-processing application; • Access and exit files; • Identify and use common menu and toolbar options. Range: <i>Open, view, edit, format, save and print.</i>
2	2.3 Use word-processing principles and functions to enter, edit and format document.	2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7	<ul style="list-style-type: none"> • Use the cursor and insert/type-over functions; find and replace text Range: <i>search, find, replace</i> • Enter and edit text; format text; Range: <i>block, move, cut, copy, paste</i> • Format paragraphs; Range: <i>margins, tabulation, alignment, line spacing, indenting, bullets and numbering</i> • Format pages Range: <i>page numbering, margins, headers and footers, orientation</i> • Use simple tables Range: <i>borders and shading, inserting and deleting columns and rows, merging and splitting cells</i> • Select appropriate fonts. Range: <i>2.1.4, case change</i> • Use common word-processing tools Range: <i>Spell-checking, thesaurus, dictionary, help</i>

Topic 2	Objective	Outcomes	
Spreadsheets			
2	2.5 Demonstrate knowledge and uses of spreadsheets (s/s)	2.5.1 2.5.2 2.5.3 2.5.4	<ul style="list-style-type: none"> • Describe the advantages of using a spreadsheet; • Understand cell referencing/addressing; • Identify cell types; Range: <i>labels, values, formulae.</i> • Demonstrate the ability to navigate around the s/s; Range: <i>arrow keys, page keys, mouse, home, end.</i>
2	2.6 Produce a simple spreadsheet file containing labels, values and mathematical formulae.	2.6.1 2.6.2	<ul style="list-style-type: none"> • Load and exit a s/s application or file; • Use s/s functions to enter and edit formulae. <p>Range: <i>Function: SUM, AVERAGE, COUNT, IF, MAX, MIN</i> <i>Standard Mathematical Operations</i> <i>Cell Addressing: absolute and relative;</i> <i>Format: cell width, justification, text and number format (decimal, dollar, percent).</i></p>
2	2.7 Manage spreadsheet files	2.7.1 2.7.2 2.7.3	<ul style="list-style-type: none"> • Demonstrate ability to manage files and worksheets. Range: <i>copy, paste, fill, rename worksheets, abandon changes</i> • Demonstrate data-integrity practices. Range: <i>compare data with source</i> • Print a page or range of cells Range: <i>preview, orientation.</i>
2	2.8 Manipulate the data in the spreadsheet.	2.8.1 2.8.2 2.8.3	<ul style="list-style-type: none"> • Graph cell ranges within a s/s with appropriate labels using default settings Range: <i>column, bar, pie, line.</i> • Apply “what if” analysis to a spreadsheet. • Sort a range of data on a given column.
Databases			
2	2.9 Demonstrate knowledge of the uses and features of databases.	2.9.1 2.9.2 2.9.3 2.9.4	<ul style="list-style-type: none"> • Describe the advantages of using a database; • Describe a database table as a collection of rows (records) and columns (fields). • Load and quit a database program • Identify field sizes and type. Range: <i>text, number, date, percentage, Boolean.</i>
2	2.10 Manipulate data in a	2. 10.1	<ul style="list-style-type: none"> • Edit records in a table; Range: <i>insert or delete a row (record) or column</i>

Topic 2	Objective	Outcomes	
	database.	2. 10.2 2. 10.3 2. 10.4 2.10.5	<p><i>(field), enter, modify, undo data</i></p> <ul style="list-style-type: none"> • Understand SQL (sequential query language) statements; Range: <i>SELECT, FROM, WHERE, ORDER BY, AND, OR</i> • Generate a query; Range: <i>design view, wizard, selection criteria (AND, OR)</i> • Sort a table and/or query; • Use functions in queries; Range: <i>Count, Average, Sum, Max, Min</i>
2	2.11 Manage database files	2. 11.1 2. 11.2 2. 11.3	<ul style="list-style-type: none"> • Understand the need for data integrity practice; • Demonstrate data-integrity practices. Range: <i>compare data with source, input controls.</i> • Print reports and query outputs.
2	2.12 Exporting /importing data between computer applications	2.12.1 2.12.2 2.12.3	<ul style="list-style-type: none"> • Export data from a database to a spreadsheet • Import tables and graphs from a spreadsheet to a word processor • Produce a simple report document incorporating data/ graphs from a s/s and/or database.

TOPIC 3 (Optional)

PROGRAMMING COMPUTERS

Aim: To train students in the basic skills of

- problem analysis principles, application of these principles to planning a computer programme, and writing computer code from a structured diagram.

Objectives: Students should be able to

- apply fundamental principles of problem analysis;
- apply principles of planning for a computer programme;
- code a given programme from a given structure diagram.

Topic	Objective	Outcomes	
3	3.1 Apply fundamental principles of problem analysis.	3.1.1 3.1.2 3.1.3	<ul style="list-style-type: none"> • Apply problem analysis and decision making to problems; • Apply principles of logic flow in relation to problem solving; • Identify suitable algorithms to produce a solution
3	3.2 Apply principles of planning for a computer programme.	3.2.1 3.2.2 3.2.3 3.2.4	<ul style="list-style-type: none"> • Demonstrate methods of problem specification using one of the techniques from Range: <i>structure diagrams, flowcharts</i> • Research problems in term of input/output requirements • Evaluate the suitability of developing a computer programme to solve a problem, • Identify the features of a computer programme that would solve a problem. Range: <i>iteration, decision making</i>
3	3.3 Code a given programme from a given structure diagram.	3.3.1 3.3.2 3.3.3 3.3.4	<p>Range: <i>programmes contain sequence, selection and repetition. Within this range,</i></p> <ul style="list-style-type: none"> • define & use variables, and name them so they describe the purpose for which they are created; • use a suitable text editor to write computer code, • display the full range of file management skills in handling the code files, and word processing skills in writing the code • write programme code which fulfils the requirements of the problems solution.

TOPIC 4 (Optional)

DESKTOP PUBLISHING ON A PERSONAL COMPUTER

Aim: To train students in the basic skills of

- desktop publishing on a personal computer, and produce a simple DTP document.

Topic	Objective	Outcomes	
4			
4	4.1 Demonstrate knowledge of the uses and features of desktop publishing on a personal computer.	4.1.1 4.1.2 4.1.3	<ul style="list-style-type: none">• Identify uses for DTP• Demonstrate the principles of page layout appropriate to the document being produced• Identify DTP applications, eg. PageMaker, Ventura, Publisher, etc..
4	4.2 Produce DTP documents	4.2.1 4.2.2 4.2.3 4.2.4 4.2.5 4.2.6	<ul style="list-style-type: none">• Load and quit a DTP program;• Create a DTP document; enter text in a text box; import word-processed text; edit and reformat.• Import a graphics file; size and move it to an appropriate place in the document.• Use lines, boxes, headlines, multi-columns, text flow and other available options to enhance the document.• Add and remove pages as required without loss of essential data.• Print the document

TOPIC 5 (Optional)

DESIGN A SIMPLE WEBSITE

Aim: To train students in the basic skills of

- Using a webpage generator to build a simple 3-page website.

Objectives: Students should be able to:

- describe, in general terms, the world wide web.
- identify and use a web designer package to build simple websites using text and graphics.

Topic	Objective	Outcomes	
5	5.1 Understand and describe the fundamentals of the World Wide Web.	5.1.1 5.1.2	<ul style="list-style-type: none"> • Describe the basic structure of the www; • Understand and define fundamental concepts Range: <i>Domain names, URL, ISP</i>
5	5.2 Build a simple web site using a web page generator	5.2.1 5.2.2 5.2.3 5.2.4 5.2.5	<ul style="list-style-type: none"> • Build a simple 3 page website Range: <i>index / home page, linked pages, hyperlinks</i> • Insert and format text; Range: <i>Standard word processing format options</i> • Insert pictures and other graphics; • Display an understanding of the need to keep images small but visually clear; Range: <i>jpeg photos, gif files, resizing photos in imaging software</i> • Use tables to anchor pictures to text.
5	5.3 Preview and publish web pages	5.3.1 5.3.2	<ul style="list-style-type: none"> • Preview web pages in a browser. Examples: <i>Internet Explorer, Firefox, Opera, Netscape, etc</i> • Understand how web pages are published to a web site Range: <i>ISP, domain names, web addresses</i>
5	5.4 Understand the problems of delivering information over the internet	5.4.1 5.4.2	<ul style="list-style-type: none"> • Understand the difference between dial-up and broadband connections; • Understand the problems of displaying images, video and sound Range: <i>download speeds, image compression, audio compression</i>

TOPIC 6 (Optional)

PROCESSING DIGITAL IMAGES

Aim: To train students to

- Process digital images so as to change the properties of the original image

Topic 6	Objective	Outcomes	
6	6.1 Identify and use suitable image processing software	6.1.1 6.1.2 6.1.3	<ul style="list-style-type: none">• Import standard digital images into an image processing application;• Save the image using a different formats• Understand the differences between different image formats Range: <i>bmp, jpg, gif</i>
6	6.2 Use imaging software to modify image properties	6.2.1 6.2.2 6.2.3	<ul style="list-style-type: none">• Change image size and orientation Range: <i>rotation, resizing, cropping</i>• Change colour intensity Range: <i>brightness, intensity, gamma correction</i>• Alter an image Range: <i>sharpen, red-eye reduction, pixilation, blur, filter effects</i>
6	6.3 Use image software to produce image collages and panoramas.	6.3.1 6.3.2 6.3.3	<ul style="list-style-type: none">• Merge two or more images to produce a new collage Range: <i>cut, copy, paste, move</i>• Use imaging software to produce a panoramic view• Add text to an image
6	6.4 Save processed images and export then to other applications	6.4.1	<ul style="list-style-type: none">• Import a processed image into another application Range: <i>Word processor, DTP application, web page</i>

TOPIC 7 (Optional)

CREATING COMPUTER PRESENTATIONS

Aim: Train students to

- Use a computer presentation application to create a presentation.

Topic	Objective	Outcomes	
7	7.1 Use features of a computer presentation application	7.1.1	<ul style="list-style-type: none">• Know the potential of different applications to support presentations. Range: <i>presentation software, slideshows, video clips, webpages, music/sound effects</i>
		7.1.2	<ul style="list-style-type: none">• Select features from applications which are to be incorporated within a presentation.
7	7.2 Design the presentation	7.2.1	<ul style="list-style-type: none">• Produce a paper plan of a presentation which identifies applications to be used in the development of material for presentation.
7	7.3 Create the presentation	7.3.1	<ul style="list-style-type: none">• Produce elements of the presentation in appropriate applications.
		7.3.2	<ul style="list-style-type: none">• Organise the material within an appropriate set of folders
		7.3.3	<ul style="list-style-type: none">• Create the presentation Range: <i>text, images, transitions.</i>
7	7.5 Present the topic	7.5.1	<i>The presentation must</i> <ul style="list-style-type: none">• be delivered to an audience, and
		7.5.2	<ul style="list-style-type: none">• meet its design specifications.

TOPIC 8 (Optional)

COMPUTER GRAPHICS

Aim: To train students to

- plan the use of a computer graphics application;
- draw, paint and print computer graphics.

Topic	Objective	Outcomes	
8	8.1 Plan the use of a computer graphics application and show basic drawing skills.	8.1.1	<ul style="list-style-type: none">• Plan the steps required to produce the graphic
		8.1.2	<ul style="list-style-type: none">• Demonstrate basic drawing skills: Range: <i>line, oval, circle, rectangle, square, polygon, curve, text</i>
8	8.2 Draw computer graphics	8.2.1	<ul style="list-style-type: none">• Use graphics to represent what is planned
		8.2.2	<ul style="list-style-type: none">• Use graphics to demonstrate transformed images. Range: <i>move, resize, reshape, flip, rotate, modify level relative to other images, fill, modify line weight, delete</i>
8	8.3 Paint a computer graphic	8.3.1	<ul style="list-style-type: none">• Use graphics to demonstrate painting skills Range: <i>brush, pencil, spray, erase</i>
		8.3.2	<ul style="list-style-type: none">• Demonstrate transformed painted graphics. Range: <i>move, fill, erase.</i>
8	8.4 Print computer graphics	8.4.1	<ul style="list-style-type: none">• Demonstrate graphic by previewing and printing using a suitable page orientation
		8.4.2	<ul style="list-style-type: none">• Set the printer to the appropriate resolution to print the graphic.

TOPIC 9 (Optional)

EXCHANGE MESSAGES USING e-mail

Aim: To train students to

- plan the use of e-mail (electronic mail); and
- create, send, receive, organise, and save e-mail

Topic 9	Objective	Outcomes	
9	9.1 Plan the use of e-mail	9.1.1 9.1.2 9.1.3	<ul style="list-style-type: none"> • Plan the steps to be followed and justify the tools to exchange e-mail messages • Describe the operating environment and basic system configurations • Understand e-mail addressing Range: <i>user name, @, ISP address,</i>
9	9.2 Create e-mail	9.2.1 9.2.2 9.2.3 9.2.4 9.2.5	<ul style="list-style-type: none"> • Identify and load e-mail software • Write message headers and appropriate content; • Address the message correctly; Range: <i>single and multiple recipients.</i> • Ensure the message conforms to organisation standards • Attach a document to the e-mail message
9	9.3 Send, receive, organise and save e-mail	9.3.1 9.3.2 9.3.3 9.3.4 9.3.5 9.3.6 9.3.7	<ul style="list-style-type: none"> • Send e-mail and show evidence that message has been delivered; Range: <i>sent items folder</i> • Detect incoming messages; • Be aware of the danger of viruses in attachments; • Display and print incoming e-mail; Range: <i>message, attached document, inbox</i> • Identify the origin of incoming e-mail; • Respond to incoming message using available application features; Range: <i>reply, forward, flag, block, delete, print</i> • Organise e-mail messages and attachments. Range: <i>save, rename, copy, delete, locate, directory(folder), display directory(folder) contents, locate.</i>

TOPIC 10 (Optional)

KEYBOARDING SKILLS

Aim: To train students to

- correctly use the keyboard and keypad at a minimum speed;

Topic 10	Objective	Outcomes	
10	10.1 Use the Keyboard LETTERS correctly.	10.1.1 10.1.2 10.1.3 10.1.4 10.1.5 10.1.6 10.1.7 10.1.8 10.1.9	<ul style="list-style-type: none"> • Demonstrate how to correctly place their fingers on the home keys; • Demonstrate how to correctly use all the letters on the keyboard; • Know the positions of each letter on the keyboard. • Know the correct fingering of the following keys Range: <i>semi-colon, fullstop, comma, slash</i> • Demonstrate the use of the shift key to produce capital letters of any letter; • Demonstrate the correct way to turn on and off the Caps Lock key and demonstrate the typing of capital letters; • Demonstrate the input of written information at a rate of 20 words per minute; • Demonstrate the input of written information while looking only at the monitor; • Copy written information while looking only at the text being copied.
10	10.2 Use the KEYBOARD NUMBERS correctly.	10.2.1 10.2.2	<ul style="list-style-type: none"> • Demonstrate the correct fingering for the numbers zero to nine; • Demonstrate the input of numeric information at the rate of 50 characters per minute.
10	10.3 Use the KEYPAD NUMBERS correctly.	10.3.1 10.3.2	<ul style="list-style-type: none"> • Demonstrate the correct fingering for the numbers zero to nine and the decimal point; • Demonstrate the input of numeric information at the rate of 50 characters per minute.

TOPIC 11 (Optional)

THE HISTORY OF COMPUTERS

Aim: To give students an appreciation of

- how computer hardware developed
- how computer software developed
- the people who were important in the development of computers

Topic	Objective	Outcomes	
11			
11	11.1 Name the people involved in the development of computing prior to the 20 th century, and describe their contributions.	11.1.1 11.1.2 11.1.3	<ul style="list-style-type: none"> • Name the people who made important contributions to the development of the computer prior to the twentieth century. • Describe the contribution each of these people made. • Explain why the contribution was important in the development of computing. <p>Range: Schikard; Pascal; Napier, Gutenberg; Leibniz; Jacquard; Babbage; Countess of Lovelace; Hollerith</p>
11	11.2 Describe the devices used prior to the 20 th century to assist with calculations and mathematical processes.	11.2.1	<ul style="list-style-type: none"> • Name various computational devices and briefly describe how they were used. <p>Range: abacus; logarithms; slide rule; Babbage's difference engine; Jacquard's loom;</p>
11	11.3 Name the people involved in the development of computing during the 20 th century, and describe their important contribution.	11.3.1 11.3.2 11.3.3	<ul style="list-style-type: none"> • Name four people who made important contributions to the development of the computer during the twentieth century. • Describe the contribution each of these people made. • Explain why the contribution was important in the development of computing. <p>Range: A minimum of 4 people must be included. (The large number of possible candidates precludes any comprehensive range being specified.)</p>
11	11.4 Describe the development of electronic devices that led to the advent of the personal computer.	11.4.1 11.4.2	<ul style="list-style-type: none"> • Name the electronic devices that led to the development of the electronic computer. <p>Range: valve; transistor; integrated circuit; large scale integration, microprocessor</p> <ul style="list-style-type: none"> • Describe what each device contributed to the development of computing. <p>Range: valve; transistor; integrated circuit; large</p>

Topic 11	Objective	Outcomes	
		11.4.3	<p><i>scale integration, microprocessor</i></p> <ul style="list-style-type: none"> Describe the first early computers. Range: <i>Hollerith's Tabulating Machine; Turing's machine; EDVAC; ENIAC, UNIVAC</i>
11	11.5 Describe major hardware and software developments since 1970 that have produced the modern personal computer.	11.5.1	<ul style="list-style-type: none"> Describe how certain hardware items were developed. Range: <i>3½" floppy disk; Hard Drive; memory; CD-ROM; mouse</i>
		11.5.2	<ul style="list-style-type: none"> Briefly describe each of the following: Range: <i>machine code; assembler; One 3GL (e.g. FORTRAN, COBOL, PASCAL, ALGOL, BASIC.); One 4GL Object Oriented Program (e.g. VISUAL BASIC, DELPHI.)</i>
		11.5.3	<ul style="list-style-type: none"> Name four people who have been important in the development of the personal computer since 1970, and describe their contribution. Range: <i>(The large number of possible candidates precludes any comprehensive range being specified.)</i>

TOPIC 12 (Optional)

INTERNET RESEARCH

Aim: To train students on the proper use of the internet for research

Topic 12	Objective	Outcomes	
12	12.1 Demonstrate knowledge of the uses of the Internet	12.1.1	<ul style="list-style-type: none">• Be aware of the internet as valuable resource of information Examples: online encyclopedias, reference sites, news sites, etc.
		12.1.2	<ul style="list-style-type: none">• Identify commonly used search engines Examples: Google, Yahoo, MSN, Lycos, etc
		12.1.3	<ul style="list-style-type: none">• Differentiate between reliable and unreliable sources of information
		12.1.4	<ul style="list-style-type: none">• Use logical operators to refine a search.
12	12.2 Conduct online research	12.2.1	<ul style="list-style-type: none">• Successfully search the internet with a variety of methods on a chosen topic
		12.2.2	<ul style="list-style-type: none">• Create a final document based on the search Range: <i>Word Processed report, Web Page, presentation</i>
		12.2.3	<ul style="list-style-type: none">• Create a bibliography based on the search to support the final document

INTERNALLY ASSESSED COURSEWORK SCHEDULE

Introduction

The internally assessed course work in this programme is very important if only for the reason it accounts for 70% of the student's work for the year. A sound IA programme is therefore very important, and must be planned at the start of the year.

Generic Skills

This course recognises that there are basic computing skills that are generic to all kinds of work with computers and form a basis for the development of higher skills. Some are so basic they can only be observed by teachers while students go about their work. **Observation** is therefore a fundamental assessment technique that is formalised in this course and used to determine whether the **learning outcomes** have been met or not.

Basic Coursework Requirements

Each teacher must design a coursework programme with the following compulsory task requirements.

1. The Internal Assessment programme will be designed out of **70** percent.
2. Core Topics 1 and 2 will be assessed by an SPBEA provided common assessment task (CAT) weighted at **30%**.
3. Generic skills demonstrated in the core topics will be assessed by observations and checklisting weighted at **10%**
4. Optional topics are to be assessed by teacher designed tasks. The weighting for each topic will be **10%** of the assessment, except in the case of Topic 3 (Computer Programming) which will be weighted at **20%** of the assessment. Total weighting of the optional topics assessment will be **30%**.

Course Approval

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

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

SUMMARY INTERNAL ASSESSMENT SCHEDULE Modified for Single Compulsory Topic CAT

The following summary schedule must be completed by the teacher of PSSC Computer Studies and returned to SPBEA by the 1st March of the year the programme is being taught.

School: _____

Date: _____

Teacher: _____

Compulsory Topics	Brief description of tasks	Weight	Comment
1 Computer Operating Systems	Topic 1 Observation:	4	
2 Personal Computer Applications	Topic 2 Observation :	6	
1 & 2	Combined CAT	30	Must be received by SPBEA by 15th September
Optional Topics	Brief description of tasks	Weight	Comment
3 Computer Programming	Teacher Designed Task 1	10	Students selecting this Topic are only required to select ONE other optional topic.
	Teacher Designed Task 2	10	
Topic name:	Teacher Designed Task 3	10	
Topic name:	Teacher Designed Task 4	10	
Topic name:	Teacher Designed Task 5	10	
TOTAL IA PROGRAMME		70%	

INTERNAL ASSESSMENT PROGRAMME

TOPIC 1: Personal Computer Systems and Management

Topic 1 will be internally assessed using a combination of observation of generic skills, and a combined CAT.

1.1 Assessment by Observation (4%)

This is done by a checklist. The student is to demonstrate competency in all listed skills. The teacher is to tick whether the skill is adequately demonstrated or not.

If a student is judged competent in ALL 15 listed observable skills, 4% is to be awarded.

If the student is judged competent in a minimum of 13 of the observable skills, then 2% is to be awarded.

If the student is judged competent in fewer than 13 of the observable skills, then no mark should be awarded.

Students should be given the chance to be reassessed in any skills they fail to reach competency in on the first assessment.

A checklist must be kept for each student. The teacher should complete the checklist over a period of time. Not all activities need been done at the same time. Some can be observed in the course of the student's normal classroom activity. Others will need to be set up as mini-practical tests.

Finally, the following Checklist is a compulsory activity and Student Checklist results must be available for verification during SPBEA's verification visits.

Topic 1 Observation Checklist

Outcomes	Skill	Competency demonstrated
1.1.3	Show physical connections between components <ul style="list-style-type: none"> • keyboard, mouse, floppy or optical disk drive. • video display. • floppy disk and/or CD used correctly (ie. Handled without touching magnetic material, inserted in the drive the right way up). • video display used correctly (brightness at appropriate level, contrast set, vertical and horizontal controls correctly adjusted). • keyboard used correctly (no liquids present, light touch). • mouse used correctly (mouse pad in use, light use of buttons). 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.4	Simple hardware faults identified. <ul style="list-style-type: none"> • power off • loose or disconnected plugs 	<input type="checkbox"/> <input type="checkbox"/>
1.1.4	Hardware faults isolated to a component. <ul style="list-style-type: none"> • power off on printer. • screen not turned on. • keyboard not plugged in. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.5.1	Power up and down <ul style="list-style-type: none"> • power on (cold start) and re-boot(warm start) • power down (without loss of data). 	<input type="checkbox"/> <input type="checkbox"/>
1.6.3	Run menu driven application. <ul style="list-style-type: none"> • load application • exit application 	<input type="checkbox"/> <input type="checkbox"/>

1.2 Remaining Topic Outcomes

Apart from the prescribed summative assessments for Topic 1 the teacher is expected to cover ALL Topic outcomes in some way during the course of the year. Outcomes that have not been covered by observation and the combined CAT need to be assessed by other means. This can be done by other means such as small practical exercises, written tests, examinations, etc.

In particular, written testing should be used to cover outcomes that require the basic knowledge and understanding students need to acquire.

Teachers are encouraged to design assessment activities which have a formative function, and which focus on the outcomes listed in the prescription.

TOPIC 2: Using Personal Computer Applications

Topic 2 will be internally assessed using a combined CAT and observation of generic skills.

2.1 Word-Processing

2.1.1. Assessment by Observation (2%)

This is done by a checklist. The student is to demonstrate competency in all listed skills. The teacher is to tick whether the skill is adequately demonstrated or not.

If a student is judged competent in ALL 11 listed observable skills, 2% is to be awarded.

If the student is judged competent in a minimum of 9 of the observable skills, then 1% is to be awarded.

If the student is judged competent in fewer than 9 of the observable skills, then no mark should be awarded.

Students should be given the chance to be reassessed in any skills they fail to reach competency in on the first assessment.

A checklist must be kept for each student. The teacher should complete the checklist over a period of time. Not all activities need been done at the same time. Some can be observed in the course of the student's normal classroom activity. Others will need to be set up as mini-practical tests.

Finally, the following Checklist is a compulsory activity and Student Checklist results must be available for verification during SPBEA's verification visits.

Wordprocessing Observation Checklist

Outcomes	Skill	Competency demonstrated
2.2.1	The students is able to	
	• load and quit application software;	<input type="checkbox"/>
2.6.1	• load a document;	<input type="checkbox"/>
	• save a document;	<input type="checkbox"/>
	• save a document with another name.	<input type="checkbox"/>
2.3.1	The student is able to	
	• use the keyboard demonstrating cursor movement;	<input type="checkbox"/>
	• use the insert key for insert and type-over functions	<input type="checkbox"/>
2.4.1	The student must demonstrate ability to	
	• use the help screens effectively.	<input type="checkbox"/>
2.5.1	The student must demonstrate they	
	• save their work regularly while working	<input type="checkbox"/>
2.5.2	• backup their work regularly	<input type="checkbox"/>
2.7.2	The student must be able to use	
	• use a print view if available.	<input type="checkbox"/>
2.7.3	• print selected pages	<input type="checkbox"/>

2.2 Spreadsheets

2.2.1 Assessment by Observation (2%)

This is done by a checklist. The student is to demonstrate competency in all listed skills. The teacher is to tick whether the skill is adequately demonstrated or not.

If a student is judged competent in ALL 15 listed observable skills, 2% is to be awarded.

If the student is judged competent in a minimum of 13 of the observable skills, then 1% is to be awarded.

If the student is judged competent in fewer than 13 of the observable skills, then no mark should be awarded.

Students should be given the chance to be reassessed in any skills they fail to reach competency in on the first assessment.

A checklist must be kept for each student. The teacher should complete the checklist over a period of time. Not all activities need been done at the same time. Some can be observed in the course of the student's normal classroom activity. Others will need to be set up as mini-practical tests.

Finally, the following Checklist is a compulsory activity and Student Checklist results must be available for verification during SPBEA's verification visits.

Spreadsheets Observation Checklist

Outcomes	Skill	Competency demonstrated
2.8.3	The student is to demonstrate the ability to move the cursor to <ul style="list-style-type: none"> • the bottom of a large spreadsheet • return quickly to A1 • go to a selected cell 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.9.1	Show ability to <ul style="list-style-type: none"> • load and • quit a spreadsheet application 	<input type="checkbox"/> <input type="checkbox"/>
2.9.3 2.9.4	Be able to <ul style="list-style-type: none"> • use the help facility • create • name • save • abandon changes to s/s files; and use file management • copy; • rename; • locate directories(folders); • display directories(folder contents); • locate files. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2.3 Databases

2.3.1 Assessment by Observation (2%)

This is done by a checklist. The student is to demonstrate competency in all listed skills. The teacher is to tick whether the skill is adequately demonstrated or not.

If a student is judged competent in ALL 12 listed observable skills, 2% is to be awarded.

If the student is judged competent in a minimum of 10 of the observable skills, then 1% is to be awarded.

If the student is judged competent in fewer than 10 of the observable skills, then no mark should be awarded.

Students should be given the chance to be reassessed in any skills they fail to reach competency in on the first assessment.

A checklist must be kept for each student. The teacher should complete the checklist over a period of time. Not all activities need been done at the same time. Some can be observed in the course of the student's normal classroom activity. Others will need to be set up as mini-practical tests.

Finally, the following Checklist is a compulsory activity and Student Checklist results must be available for verification during SPBEA's verification visits.

Databases Observation Checklist

Outcomes	Skill	Competency demonstrated
2.13.1	Show ability to <ul style="list-style-type: none">• load and• quit a DB application	<input type="checkbox"/> <input type="checkbox"/>
2.12.1 2.13.3	Be able to <ul style="list-style-type: none">• use the help facility• create• name• save• abandon changes to DB files;• copy;• rename;• locate directories(folders);• display directories(folder contents);• locate files.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2.4 Remaining Topic Outcomes

Apart from the prescribed summative assessments for Topic 2 the teacher is expected to cover ALL Topic **outcomes** in some way during the course of the year. **Outcomes** that have not been covered by observation and **the combined CAT** need to be assessed by other means. This can be done by other means such as small practical exercises, written tests, examinations, etc.

In particular, written testing should be used to cover **outcomes** that require the basic knowledge and understanding students need to acquire.

Teachers are encouraged to design assessment activities which have a formative function, and which focus on the **outcomes** listed in the prescription.

TOPIC 3: Programming Personal Computers

Topic 3 will be internally assessed by projects.

3.1 Practical Projects (2 x 10%)

Projects are the best way of testing a student's full range of skills in computer programming. The teacher must design 2 (TWO) computer projects to test as many **outcomes** as possible. A sample project is given in the pamphlet of Teacher Notes.

3.2 Assessing the remaining Topic Outcomes

Teachers need to design a number of small exercises to introduce students to the following programming concepts

- problem analysis using flowcharts, structure diagrams
- input/output concepts and commands
- use of variables
- repetition control
- decisions and comparisons

Each exercise should concentrate on one or two of the skills identified by the **outcomes**, and should be formative in function, and should precede their required use in the practical projects.

TOPIC 4: Desktop Publishing on a Personal Computer

Topic 4 will be internally assessed by project.

4.1 DTP Project (10%)

A project must be planned for this topic. A sample is available in the Teacher Notes.

4.2 Assessing the remaining Topic Outcomes

Teachers need to design a number of small exercises to introduce students to DTP specific concepts.

Each should be formative in function and should precede their required use in the DTP project.

TOPIC 5: Design a simple Web Site

5.1 Project (10%)

Topic 5 is internally assessed.

The teacher is required to assess the student using two testing devices.

- A project where the student builds a simple website.
- A short paper test.

5.1.1 Project

This topic requires the student to build a simple 3 page website, the topic of which is agreed to with the teacher.

Suggestions for the Teacher

- To do this topic, the teacher will need to have a web designer package available for students to work with. Schools with Microsoft Office may well have Frontpage available. If not, free web designer packages are available from the Internet. One such package is BlueVoda Website Builder 8.0 which can be downloaded from <http://www.vodahost.com/>. It is also available as a teaching resource from SPBEA and comes complete with teaching lessons.
- The teacher should prepare a list of suitable topics that students can select from. Students can suggest topics to be added to the list.
- Students should work independently.

Assessment Requirements

- The project must contain one home page with two additional pages linked to it.
- The home page should introduce the web site owner (the student) to the viewer outlining the subject matter and any individuals associated with it.
- The other two pages must relate to specific topics related to the central theme outlined in the Home page.
- The user must be able to navigate easily between the pages.
- Pictures and/or graphics must be used and students must show evidence that they have kept image sizes small but the picture remains clear.
- Text must be formatted to basic word processing standards. Headings must be clear and demonstrate the use of colour, suitable type and size.

5.1.2 Written test

The teacher is required to administer a short pen and paper test covering the students' knowledge of web concepts. These should cover all items listed in the prescription statement.

5.1.3 Suggested test weightings

Teachers are free to assess the two topics out of any suitable total. But when supplying a test total to SPBEA as a single mark, the two components should be weighted as

80% for the project: 20% test

TOPIC 6: Process Digital Images

6.1 Imaging tasks (10%)

Topic 6 is internally assessed.

6.1.1 Tasks

Suggestions for the Teacher

- Teachers working with topic need to build a library of suitable digital images as a teaching resource. Images should have defects such as over exposure, red-eye, faulty alignment. Also there should be photos which can be used to form panoramas.
- It would also be useful if the school had a digital camera which students can use to take and download their own images.

Students may also have their own cameras and supply their own images. This is NOT a requirement for the successful teaching of this topic.

- There are a large number of suitable imaging programmes available, but a highly recommended one is the freeware called **IrfanView** available for downloading from-
<http://www.irfanview.com/>

Assessment

- The teacher is to design a series of tasks to give their students experience in meeting the objectives of the topics.
- Assessment should be by observation and checklist. The teacher should prepare a series of objectives which must be met by the student. These should be checked off as the student demonstrates he/she has acquired the skill.
- High level skills must include
 - Cropping
 - Rotation
 - Gamma correction (changing brightness and intensity)
 - Change of image size
 - Cutting and pasting to produce a simple collage
 - Producing a panoramic view
 - Adding simple text to an image
 - Importing the image to another application such as a word-processor.

TOPIC 7: Using Personal Computers To Make Computer Presentations

Topic 7 will be internally assessed by project.

7.1 Project (10%)

Students are to do a compulsory project which includes at least 4 graphics together with text. A sample project is given in the Teacher Notes.

7.2 Assessing the remaining Topic outcomes

Teachers need to design a number of small exercises to introduce students to specific skills related to this topic.

Each exercise should be formative in function and should precede their required use in the project.

TOPIC 8: Computer Graphics

Topic 8 will be internally assessed by project.

8.1 Project (15%)

Students are to do a compulsory project which includes at least 4 graphics together with text.

A sample project is given in the Teacher Notes.

8.2 Assessing the remaining Topic outcomes

Teachers need to design a number of small exercises to introduce students to specific skills related to this topic.

Each exercise should be formative in function and should precede their required use in the project.

TOPIC 9: Exchange Messages Using E-Mail

Topic 9 will be internally assessed by project.

9.1 Project (10%)

Students are to do a compulsory project. To effectively do it, the student must make contact with at least two schools who have an e-mail Internet address and will co-operate by returning mail with some comment.

9.2 Assessing the remaining Topic outcomes

Teachers need to design a number of small exercises to introduce students to specific skills related to this topic.

Each exercise should be formative in function and should precede their required use in the project.

TOPIC 10: Keyboarding Skills

Topic 10 will be internally assessed by project.

10.1 Project (10%)

Students are to do a compulsory project.

10.2 Assessing the remaining Topic outcomes

Teachers need to design a number of small exercises to introduce students to specific skills related to this topic.

Each exercise should be formative in function and should precede their required use in the project.

TOPIC 11: The History of Computers

11.1 Project (10%)

Students are to do a compulsory project. This should require students to research the topics specified in the Achievement Criteria.

Where possible students should be encouraged to use computer technology to research the topics, e.g. the use of a CDROM encyclopaedia.

Students should also use computer technology to present their findings by using either a wordprocessor, or a presentation program.

A summative marking schedule should be written so that marks are awarded to each Achievement Criterion in a manner that indicates students' performance in attaining that criterion.

TOPIC 12: Internet Research

12.1 Project (10%)

Topic 12 is internally assessed.

This topic requires the student to research a topic agreed to with their teacher, which will require the use of the Internet to find information relating to the topic.

Suggestions for the Teacher

- The teacher should prepare a list of suitable topics that students can select from. Students can suggest topics to be added to the list.
- Students should do independent research and therefore be allocated different topics.

Assessment Requirements

- Use of search engines should be assessed by observation and discussion between the teacher and student. Teachers should ask the student to create a search using simple logical operators.
- Students must demonstrate a knowledge of web sites which can assist them in their search for information. This may include news sites, on-line encyclopaedias, reference sites, blogs etc.
- Acknowledgement of the sources must be included in the report, plus a discussion on the reliability of the information (*e.g. Wikopedia is a huge on-line encyclopaedia, built using open-source technology, allowing users to make their own contribution, which can sometimes be incorrect.*)

The final report is to be presented according to objectives 12.2.