
PRESCRIPTION: 150 COMPUTER CONCEPTS

Last date for assessing this prescription is 31 December 2008

INTRODUCED 1991
REVISED 1998 (Implemented Semester One 1999)

AIM OF SUBJECT

To provide students with:

- 1 a working knowledge of information technology and how it relates to a business environment.
- 2 skills to enhance their personal productivity and problem solving using appropriate business application tools.

COURSE LENGTH

The equivalent of 20 National Qualifications Framework credits, with a minimum of 60 class contact hours or the equivalent for open learning/distance tuition.

RESOURCES

Suggested student references - theory component

Beekman, George. Computer confluence: exploring tomorrow's technology. Menlo Park, C.A: Benjamin/Cummings. Latest edition.

Capron, H.L. Computers: tools for an information age. Reading, MASS: Addison-Wesley. Latest edition.

Curtain, Dennis P. and others. (1998) Information technology: the breaking wave. Boston: McGraw-Hill.

Martin, Edward G. and Parker, Charles S. PC concepts. Fort Worth, TX: Dryden Press. Latest edition.

O'Leary, Timothy J. Computing essentials. New York: McGraw-Hill. Latest edition.

Sawyer, Stacey C., Williams, Brian K. and Hutchinson, Sarah E. Using information technology: a practical introduction to computers & communications. Brief ed. Chicago, IL: Irwin.

Suggested student references - practical component

Martin, Edward G. and Parker, Charles S. Mastering today's software. Fort Worth, TX: Dryden Press. Latest edition.

Hutchinson S.E. and Coulthard G.J. Advantage series for computer education. New York: Irwin McGraw-Hill.

O'Leary, T.J. and O'Leary L.I. The O'Leary lab series. New York: Irwin McGraw-Hill.

Toliver P. and Johnson Y. Select lab series. Reading MASS: Addison Wesley.

Erikson F J., Vonk J A. The effective series. New York: Irwin McGraw-Hill.

Duffy T. Duffy lab series. Reading MASS: Addison Wesley

Additional References

Numerous supplements and support materials are available in conjunction with the references listed above and these should be discretionary but may include:

- Videos
- Web sites
- Multimedia CD Roms
- Interactive Software Tutorials.

TIME AND ASSESSMENT SCHEDULE

The prescription assumes a RCAP model of assessment (R = recall, C = comprehension, A = application, P = problem solving). In assessing to the prescription, it is expected that, in general, assessment will be of the ability of students to apply the learning outcomes and to undertake problem solving within the course material. Assessment of comprehension should be undertaken only where it is appropriate. Assessment of recall is implicit.

TOPICS	Time in hours	Assessment Weightings (%)	
		min	max
1 Information Technology in Business	13	20	30
2 Human Interface of Information Technology	7	5	10
3 Software Information Technology Toolkit	40	60	75
	TOTAL	60	100%

This schedule is a recommendation and guide for tutors, examiners and students. It gives:

- 1 an approximate allocation of time in hours by topic
- 2 an approximate percentage allocation for assessment by topic.

TOPICS

1 INFORMATION TECHNOLOGY IN BUSINESS

1.1 Components of a Business System

Learning Outcome

At the completion of this topic, students will be able to describe the five components of a business system.

Assessment Criteria

Students will be expected to:

- 1.1.1 Define and discuss the inter-relationships between the five components of a business system, ie people, procedures, data, hardware and software.
- 1.1.2 Utilise the five components as a framework in which to evaluate a system (large or small, multi or single user).
- 1.1.3 Explain the relationship between the levels of management and the different types of information systems.

1.2 Hardware and Software

Learning Outcome

At the completion of this topic, students will be able to identify and evaluate the various hardware and software alternatives available when considering the use of computer technology in a business system.

Assessment Criteria

Students will be expected to:

- 1.2.1 Compare personal computer systems and select an appropriate system for a prescribed business situation.
- 1.2.2 Describe the different types of software and evaluate various software packages.
- 1.2.3 Explain the basic components of a personal computer and their related functions.

1.3 Data Communications Overview

Learning Outcome

At the completion of this topic, students will be able to understand the components of a data communications system.

Assessment Criteria

Students will be expected to:

- 1.3.1 Explain in general terms the working of a communication system and identify the equipment required.
- 1.3.2 Describe the characteristics of:
 - Stand alone hardware
 - Networked/distributed processing
 - Centralised/multi-user processing
 - Remote/mobile processing.

1.4 Internet Technologies

Learning Outcome

At the completion of this topic, students will have knowledge and an understanding of Internet Technologies.

Assessment Criteria

Students will be expected to:

- 1.4.1 Explain the uses and potential benefits of the Internet.
- 1.4.2 Describe the terminology used such as URL's, HTTP, HTML, FTP, Electronic Commerce etc.

1.5 System Security and Control

Learning Outcome

At the completion of this topic, students will understand the security associated with the use of Information Technology in Business.

Assessment Criteria

Students will be expected to:

- 1.5.1 Identify the overall purpose of security in a computing environment.
- 1.5.2 Explain the procedures for and the importance of, backup and recovery, passwords, disk handling, and label checks.
- 1.5.3 Demonstrate an understanding of the concept of protection and access control in relation to physical and other threats, eg viruses, natural disasters, physical access, firewalls, encryption control.
- 1.5.4 Discuss the need for systems control with respect to auditability, maintainability and recoverability.

2 HUMAN INTERFACE OF INFORMATION TECHNOLOGY

2.1 Ethical Issues

Learning Outcome

At the completion of this topic, students will understand ethical issues associated with the use of Information Technology in business.

Assessment Criteria

Students will be expected to:

- 2.1.1 Explain the concept and importance of ethics in a business computer environment and discuss the associated cultural issues, from organisational professional and international perspectives.
- 2.1.2 Discuss the importance of privacy, particularly in relation to data stored in and released from a business computer system.
- 2.1.3 Discuss the issues relating to piracy, copyright and intellectual property.

2.2 People Issues

Learning Outcome

At the completion of this topic, students will understand the interrelationship existing between the user and the computer system.

Assessment Criteria

Students will be expected to:

- 2.2.1 Identify the causes, symptoms and remedies for Information Technology user problems.
- 2.2.2 Explain the importance of an ergonomic environment in an office.
- 2.2.3 Identify possible health hazards which may occur in the office, and be aware of staff work procedures to prevent Information Technology user problems.

3 SOFTWARE INFORMATION TECHNOLOGY TOOLKIT

3.1 Generic Computer Skills

Learning Outcome

At the completion of this topic, students will be expected to demonstrate that they have generic skills for the use of computer hardware and software in a business environment.

Assessment Criteria

Students will be expected to:

- 3.1.1 Navigate the computer desktop.
- 3.1.2 Trouble shoot and solve basic software or hardware problems.
- 3.1.3 Use appropriate file management techniques.
- 3.1.4 Multi-task and retrieve files between different applications.
- 3.1.5 Use appropriate document design techniques.
- 3.1.6 Create, edit, save and print documents.

3.2 Effective Use of Information Technologies

Learning Outcome

At the completion of this topic, students will be expected to demonstrate that they can use information technologies effectively to satisfy a range of outcomes in a business environment .

Assessment Criteria

Students will be expected to use applications software effectively to satisfy **all** of the *prescribed* outcomes and at least three of the *elective* outcomes identified below:

Prescribed Outcomes:

- 3.2.1 Format formal business reports.
- 3.2.2 Produce charts and graphs.
- 3.2.3 Use formulae and manipulate data to aid decision making.
- 3.2.4 Use IF Logic to perform tests on data.
- 3.2.5 Create forms for the input of data.
- 3.2.6 Edit and manipulate a database.
- 3.2.7 Extract information from a database and prepare ad-hoc reports.
- 3.2.8 Send and receive documents / messages electronically.
- 3.2.9 Retrieve information using online search facilities.

Elective Outcomes

- 3.2.10 Customise the personal computer desktop.
- 3.2.11 Mail merge letters.
- 3.2.12 Produce overheads for presentations.
- 3.2.13 Create electronic slide shows.
- 3.2.14 Produce flyers / newsletters.
- 3.2.15 Digitise documents / images.
- 3.2.16 Automate repetitive tasks.
- 3.2.17 Link and/or embed objects into documents.

TEACHING NOTES

Information Technology in Business	Total Course Weighting (20 – 30%)
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In this topic it is intended that students will gain a general understanding of information technology within a business environment. The topic is quite diverse and covers the components of a business system, hardware and software, data communications, Internet technologies and system security and control.

None of these areas should be covered in specific detail; the intention instead is to provide a broad understanding and framework which can be added to and expanded on in the 200 level NZDipBus computer papers.

Assessment Guidelines

This topic has an overall course weighting of 20 – 30%. Recommendations for percentage allocations within the topic have not been made as it is considered better to provide flexibility so weightings can be varied to reflect areas that have been stressed or highlighted in a particular course.

A variety of different assessment practices can be used to assess this section of the course. Practices which encourage application of knowledge to business situations are desirable.

Assessment tools could include:

- Test / Examination
- Research Report
- Case Study – simulating a business situation.

Delivery Guidelines

A practical focus should be maintained wherever possible. A kinesthetic approach where students learn by doing is encouraged. This approach is particularly applicable for the hardware and software and also Internet technologies sections. Students could, for example, dismantle an old computer or complete a research exercise on the Internet while learning the terminology.

Delivery methods could include:

- Lectures
- Group work and in-class exercises
- Experiential learning techniques
- Guest speakers with expertise in a particular area
- Workshops / Interactive Presentations.

Human Interface of Information Technology

Total Course Weighting
(5 – 10%)

The objective of this topic is for students to understand the interactions that people have with technology. The two areas covered are the ethical and people issues associated with use of technology in business.

It is not intended that the topic be covered in great detail; instead a more broad brush approach to be taken where an awareness of the issues in each of the respective areas should be provided.

Ethical issues are particularly important, and students must appreciate the conundrum surrounding ethics and morals in respect to the use of information technology in a business environment.

Assessment Guidelines

The overall course weighting for this topic is 5 – 10%. The focus of the topic is for students to consider ethical and people issues associated with the use of information technology. Appropriate assessment practices will therefore encourage consideration of different perspectives and discussion of key points.

Assessment tools could include:

- Test/Examination
- Research Report
- Case Study – simulating a business situation.

Delivery Guidelines

An approach which encourages discussion and feedback is recommended for this topic. The human interface of information technology is something that all students will be able to relate to and share experiences with others. The delivery method should therefore reflect this and provide appropriate forums.

Delivery methods could include:

- Lectures
- Group work and in-class exercises
- Guest speakers with expertise in a particular area
- Workshops / Interactive Presentations.

Software Information Technology Toolkit

Total Course Weighting
(60 – 75%)

It is anticipated that students will be exposed to a number of different software packages in order to meet the Assessment Criteria in the Software Information Technology Toolkit topic.

Assessment Weightings

Overview of software to be utilised and suggested weightings:

- | | | |
|---|--|------------|
| 1 | Prescribed Software | (50 – 60%) |
| | • Operating Systems | 5 – 10% |
| | • Word Processing | 10 – 20% |
| | • Spreadsheets | 10 – 20% |
| | • Database | 10 – 20% |
| | • Electronic Commerce | 5 – 10% |
| 2 | Elective Software | (10 – 15%) |
| | <i>Examples</i> | |
| | • Presentation | |
| | • Desktop Publishing | |
| | • Multimedia packages | |
| | • Any other relevant software package. | |

Delivery Guidelines

Operating Systems

(5 – 10%)

Students should be able to confidently use the operating system to perform a variety of functions that are required on a daily basis when working in a technology based environment.

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.1.1	Navigate the computer desktop <ul style="list-style-type: none">• Use the mouse• Open, move and resize windows• Use menus and icons

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3.1.2	Trouble-shoot and solve basic software or hardware problems <ul style="list-style-type: none"> • Use online help • Use disk utilities programs • Understand and action Error messages appropriately • Use problem prevention strategies eg startup disks, backups, hard drive maintenance etc. • Use virus detection and protection software.
3.1.3	Use appropriate file management techniques <ul style="list-style-type: none"> • Organise files in an appropriate hierarchy to create an easily managed filing system • Create, move, copy, rename and delete files / folders.
3.1.4	Multi-task and retrieve files between different applications <ul style="list-style-type: none"> • Work with several documents and/or applications simultaneously • Retrieve and save files for different software applications.
3.2.10	Customise the personal computer desktop <ul style="list-style-type: none"> • Change settings – printers etc. • Customise menus and icons.

Word Processing

(10 – 20%)

Students are required to be able to use word processing software to a reasonable level so they are able to perform normal day to day functions required in a business environment efficiently and effectively.

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.1.5	Use appropriate document design techniques <ul style="list-style-type: none"> • Undertake layout and formatting of documents • Undertake page Setup including margins, headers, footers etc.
3.1.6	<ul style="list-style-type: none"> • Create, edit, save and print documents.
3.2.1	Format formal business reports <ul style="list-style-type: none"> • Use multi level numbering and paragraphs • Create tables • Include page numbering, footnotes, headers and footers, tables of contents etc.
3.2.11	Mail merge letters.
3.2.16	Automate repetitive tasks <ul style="list-style-type: none"> • Use macros or other tools provided in the software.
3.2.17	Link and/or embed objects into documents <ul style="list-style-type: none"> • Insert objects such as charts, clip art, spreadsheets etc. • Link objects between the destination and source documents.

Spreadsheets

(10 – 20%)

Students are required to be able to effectively use a spreadsheet as a tool for manipulating data, aiding decision making, and performing sensitivity analysis in a business environment.

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.1.5	Use appropriate document design techniques <ul style="list-style-type: none">• Incorporate input, processing and output areas in spreadsheets where appropriate.
3.1.6	Create, edit, save and print documents.
3.2.2	Produce Charts and Graphs
3.2.3	Use formulas and manipulate data to aid decision making <ul style="list-style-type: none">• Construct formulas for calculations• Utilise absolute cell references to improve functionality• Use a range of different in-built functions.
3.2.4	Use IF Logic to perform tests on data.
3.2.16	Automate repetitive tasks <ul style="list-style-type: none">• Use macros or other tools provided in the software.
3.2.17	Link and/or embed objects into documents <ul style="list-style-type: none">• Insert objects such as charts, clip art, tables etc.• Link objects between the destination and source documents.

Databases

(10 – 20%)

Students are required to be able to edit and manipulate a database in order to perform basic functions that may be required in a business environment.

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.2.5	Create forms for the input of data <ul style="list-style-type: none">• Include calculated fields where appropriate.
3.2.6	Edit and manipulate a database <ul style="list-style-type: none">• Insert and delete records and fields• Modify records and fields.
3.2.7	Extract information from a database and prepare ad-hoc reports <ul style="list-style-type: none">• Construct queries• Prepare well organised reports that are professional in appearance.
3.2.17	Link and/or embed objects into documents <ul style="list-style-type: none">• Insert objects such as clip art, pictures etc.• Link objects between the destination and source documents.

Electronic Commerce

(5 – 10%)

Students are required to be able to use e-mail and associated technologies in order to communicate electronically in a business environment.

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.2.8	Send and receive documents / messages electronically <ul style="list-style-type: none">• Set up address books / groups• Manage incoming and outgoing electronic mail effectively• Enclose and retrieve attachments.
3.2.9	Retrieve information using online search facilities <ul style="list-style-type: none">• Use the Internet, Online catalogues, etc.
3.2.15	Digitise documents / images. <ul style="list-style-type: none">• Scan information for manipulation or publishing• Use appropriate technologies to digitise information.

Elective Software

(10 – 15%)

Students are required to be able to perform the tasks identified in the Software Information Technology Toolkit. Whether tasks are undertaken using one package or a lighter level of exposure is provided for several different packages is the prerogative of course policy.

Presentation Software

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.1.5	Use document design techniques <ul style="list-style-type: none">• Ensure content is appropriate for purpose• Use slide layout and formatting guidelines.
3.2.12	Produce overheads for presentations <ul style="list-style-type: none">• Font, style, size appropriate• Use colour and graphics.
3.2.13	Create electronic slide shows <ul style="list-style-type: none">• Use appropriate slide timings, transitions and animation.
3.2.17	Link and/or embed objects into documents <ul style="list-style-type: none">• Insert objects such as clip art, pictures etc.• Link objects between the destination and source documents.

Desktop Publishing Software

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.1.5	Use document design techniques <ul style="list-style-type: none">• Use appropriate layout and formatting of the document• Use appropriate page setup, including margins, headers, footers etc.
3.1.6	Create, edit, save and print documents.
3.2.14	Produce flyers / newsletters.
3.2.15	Digitise documents / images. <ul style="list-style-type: none">• Scan information for manipulation or publishing• Use appropriate technologies to digitise information.
3.2.17	Link and/or embed objects into documents <ul style="list-style-type: none">• Insert objects such as clip art, scanned pictures etc.• Link objects between the destination and source documents.

Multimedia Packages

Examples of generic skills or outcomes that could be performed and appropriate skill sets:

Criterion	Generic Skill / Outcome
3.2.9	Retrieve information using online search facilities <ul style="list-style-type: none">• Use the Internet, Online catalogues, etc.
3.2.15	Digitise documents / images <ul style="list-style-type: none">• Scan information for manipulation or publishing• Use appropriate technologies to digitise information.
3.2.17	Link and/or embed objects into documents <ul style="list-style-type: none">• Insert objects such as clip art, scanned pictures etc.• Link objects between the destination and source documents.