

**NEW ZEALAND INSTITUTES OF TECHNOLOGY AND POLYTECHNIC
QUALIFICATIONS IN INFORMATION & COMMUNICATIONS TECHNOLOGY**

PRESCRIPTION: SO500 SYSTEMS OVERVIEW

AIM OF MODULE:	The student will gain an understanding of the purposes of information systems and the processes of systems analysis and design.
CREDITS:	7
STUDENT LEARNING HOURS:	70
CONTENT REVISED:	2010
PRESCRIPTION EXPIRY DATE:	November 2013
NOTE:	This is a compulsory DIPICT L5 Module

Level and Assessment Schedule

TOPICS	Highest Skill Level				Suggested Assessment Percentage
	R	C	A	P	
1. Systems Theory		*			15
2. Systems Development Life Cycle		*			60
3. IS Organisation		*			10
4. Sample Information Systems		*			15
					<hr/>
					100
					<hr/> <hr/>

LEARNING OUTCOMES

The student will:

- C 1 Explain the fundamentals of systems theory.
- C 2 Explain the steps of the system development life cycle.
- C 3 Explain typical IS organisation
- C 4 Describe two Information Systems correctly from interpretation of provided system models

CONTENT

1 SYSTEMS THEORY

- Definition of a system
- General characteristics of systems
- Common types of systems (e.g. open, closed, closed loop, human, machine, human/machine)
- Business as a system
- Information systems

2 SYSTEMS DEVELOPMENT LIFE CYCLE

- Overview of systems development using different models such as the waterfall, prototype, iterative models.
- Documentation produced at each phase of the life cycle
- Requirements Analysis (purpose, problem definition process), Components of a feasibility report (project scope, general system objectives, technical, operational, and economical feasibility, anticipated costs, and benefits, project plan)
- Information gathering techniques (interview, questionnaire, observation, participation, record searching)
- Modelling techniques (e.g. Data flow diagrams, Entity relationship diagrams, Data dictionaries, Function hierarchy chart)
- Components of the requirements definition.
- Systems Design (purpose)
- Logical model
- Alternative designs for the system (e.g. computerised or, manual, centralised or

distributed, file based or data based, input methods, package or specially designed system hardware)

- Design process (e.g. Hardware specification, modular design, structure charts, cohesion, coupling, development of program specifications)
- Typical information processing steps (data entry, validation, sort, selection, update, report)
- Interface design
- Security of business systems (integrity, accessibility, confidentiality, information privacy, employee fraud, theft, physical threats, systems controls)
- Components of system specification (overview, objectives, models, input & output documents, program specifications and diagrams, data storage, procedure controls, hardware specification, clerical procedures, implementation schedule, cost estimates.
- Systems Implementation (various approaches, steps in one approach)
- Systems Review (purpose, steps involved)

3 IS ORGANISATION

- IS department in the business organisation (diagrams)
- Typical jobs and the tasks required for each (e.g. IS Manager, analyst, programmer, operator, database administrator, network supervisor, user support staff).
- IS department organisation (at least two different diagrams)
- Standard operating procedures for the systems and operations sections.
- Interaction between systems and operations sections

4 SAMPLE INFORMATION SYSTEMS

- Models such as data flow diagrams, entity relationship diagrams, functional hierarchy charts can be given to students to read and interpret. This learning outcome can be done in conjunction with learning outcome 2.

Reading/Reference List:

Discovering Computers 2011: Complete (First Edition) by Gary B. Shelly & Misty E. Vermaat. ISBN 13: 978-1439079263 (Published by Course Technology; (February 25, 2010)