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

PRESCRIPTION: IO600 INPUT/OUTPUT DESIGN

AIM OF MODULE:	To enable students to produce and present well designed inputs and outputs.
CREDITS:	7
STUDENT LEARNING HOURS:	70
CONTENT REVISED:	Pre 1996
PRESCRIPTION EXPIRY DATE:	November 2013 (not currently offered by an ITP)

Level and Assessment Schedule

TOPICS	Highest Skill Level				Suggested Assessment Percentage
	R	C	A	P	
1. Input Design				*	50
2. Output Design				*	50
					100

The student will:

1   INPUT DESIGN

R   1.1   Objectives and Options

     1.1.1   List the principal objectives of an input function.

     1.1.2   Describe a number of distinctly different methods of input and the situations to which they are most applicable. Include: online terminal, off-line data punch, bar-codes, optical character reader, voice, pointing devices, mark sense (OMR), MICR.

     1.1.3   Contrast online data entry with off-line data entry and forms.

     1.2   Background Concepts

C   1.2.1   Explain the reasons for user involvement in the process of designing an input function.

C   1.2.2   Describe how the logical view of the data, as seen by the user via an input function, may differ from the physical layout of that data in a database file.

     1.3   Screen Design

P   Given file descriptions, produce acceptable screen layouts for a one-level and a two-level interactive data entry function.

     1.4   Processing Design

C   1.4.1   Given a single level online data entry function, describe the logical steps necessary to control and process the input of data using that function. Include the processes of initial input, key validation, record access, data display, input validation, record update, normal exit and premature exit.

C   1.4.2   Detail the procedures necessary to validate data input including checks for: non-blanks, numeric, alphabetic, a range of characters, specified values, table, file look-up, a relationship between two fields, a date and a numeric field with check-digit.

     1.5   Create an Input Function

P   Produce a single file data entry function with online editing features using a fourth generation language or screen generator package of choice.

1.6 Documentation

P 1.6.1 Write a satisfactory 'Help' dialogue for an online data entry function.

P 1.6.2 Develop a terminal/operator's user guide for an online data entry function.

1.7 Advanced Concepts

C Describe a number of advanced techniques for improving the ease-of-use of data entry functions, e.g. intelligent default values for data, online context-sensitive help dialogues, facilities to display and select from available values, windows, program function keys, mouse, graphics and colour.

2 OUTPUT DESIGN

2.1 Objectives and Options

R List the principal objectives of an output function.

2.2 Methods

C 2.2.1 Describe a number of distinctly different methods of output and the situations to which they are most applicable. Include: lineflow report, pre-printed forms, online output function, magnetic tape transfer, bar-code, graphics display/plotter.

C 2.2.2 Contrast online output functions with off-line reports.

2.3 Report Design

P 2.3.1 Given a number of report specifications and field details produce acceptable report layouts for each specification.

C 2.3.2 Given a report and its associated database details describe the logical steps necessary to produce that report. Include the processes of record selection, sort, page headings, control break subheadings, detail, control break subtotals, footnotes, grand totals, end of report.

2.4 Processing Design

C 2.4.1 Explain the reasons for user involvement in the process of designing an output function.

C 2.4.2 Describe how the logical view of the data, as seen by the user via an output function, may differ from the physical layout of that data in a database file.

2.5 Create an Output Function

P   Produce a simple online output function using a fourth generation language or report generator of choice.

2.6   Forms Design

C   2.6.1   Detail the major factors in computer forms design. Include: fonts, size and spacing, colours, copies, paper weight, company standards (e.g. bank cheques), printer feed (sheet, continuous, etc.) and, controls (e.g. sequential numbering).

P   2.6.2   Given a specific requirement for a computer printed form produce an acceptable design for that form.

2.7   Further Concepts

C   2.7.1   Describe the design features of a number of turnaround documents and the situations to which they apply. Include: packing slips, bank cheques, invoices and OCR questionnaires.

R   2.7.2   Describe a number of techniques for the presentation of information from computer files, eg. interfacing to spreadsheets and word processing packages, graphs instead of reports, multiple window displays with explode/explore facilities and use of colour.