COMHAIRLE NÁISIÚNTA NA gCÁILÍOCHTAÍ GAIRMOIDEACHAIS

NATIONAL COUNCIL FOR VOCATIONAL AWARDS

Draft Module Descriptor

Spreadsheet Methods

Level 2 B20028

September 1995

1	**Title**	**Spreadsheet Methods**
2	**Code**	**B20028**
3	**Level**	**2**
4	**Value**	**1**
5	**Purpose**	This module has been designed to provide extensive practical experience in the use of spreadsheet software in typical business and other activities. It provides the learner with an understanding of fundamental spreadsheet concepts, practical experience in spreadsheet design and implementation and an introduction to the use of macros and additional functions. This is one of the mandatory modules for the **National Vocational Certificate Information Processing, Level 2 Award.**
6	**Preferred Entry Level**	Leaving Certificate, National Vocational Certificate Level 1 or equivalent.
7	**Special Requirements**	Centres wishing to provide this module must have access to suitable software such as Lotus 123, Supercalc, Excel, Quatro Pro etc.

8 General Aims

***This module aims to enable the learner to* :**

8.1	understand spreadsheets and their range of application
8.2	design spreadsheets for a range of tasks
8.3	create spreadsheets from design specification(s)
8.4	utilise a wide range of functions, including macros and other functions
8.5	create a spreadsheet, according to a given brief, under time constraints

8.6	demonstrate personal initiative and resourcefulness in responding to spreadsheet assignments.

9 Units

Unit 1	**Basic Spreadsheet Concepts**
Unit 2	**Spreadsheet Design and Implementation**
Unit 3	**Macros and Additional Functions**

10 Specific Learning Outcomes

Unit 1	**Basic Spreadsheet Concepts**
	The learner should be able to:
10.1.1	identify applications suitable for a spreadsheet
10.1.2	define the following terms:
	spreadsheet, row, column, cell, label, value, formula
10.1.3	access a spreadsheet package
10.1.4	enter numeric and character data to a spreadsheet
10.1.5	enter formulae to generate results
10.1.6	replicate formulae over a range of cells using relative cell references
10.1.7	save the spreadsheet
10.1.8	make a backup of the spreadsheet within the package
10.1.9	load an existing spreadsheet
10.1.10	insert and delete rows and columns
10.1.11	adjust column width
10.1.12	format column entries (i.e. decimal, currency, alignment)
10.1.13	use the basic functions SUM, AVG
10.1.14	print a specified area of the spreadsheet

10.1.15	exit from a spreadsheet application using proper procedures.

Unit 2	**Spreadsheet Design and Implementation**
	The learner should be able to:
10.2.1	create a design specification for a given spreadsheet application to include: • data input and format • data processing • data output and its format
10.2.2	create a spreadsheet from a design specification
10.2.3	use absolute cell references
10.2.4	use protect/unprotect and hide/display facilities
10.2.5	use title freeze and split screen facilities
10.2.6	use the single condition IF function with relational operators: =, <, <=, >, >=, <>
10.2.7	use a selection of statistical functions (to include MAX, MIN, ABS, INT, SQR/SQRT, COUNT)
10.2.8	sort a spreadsheet on a selected key
10.2.9	create at least two basic graph types including bar and pie
10.2.10	save graphs to disk
10.2.11	retrieve graphs from disk
10.2.12	print graphs with appropriate titles and labels
10.2.13	print a spreadsheet in whole, in part, with values, with formulae with/without borders (row column identifiers).

Unit 3	**Macros and Additional Functions**	
	The learner should be able to:	
10.3.1	use formulae containing both absolute and relative cell references	
10.3.2	use multiple IF functions with logical operators AND, OR, NOT	
10.3.3	use the LOOKUP function	
10.3.4	toggle the recalculation of a spreadsheet	
10.3.5	use financial functions - DEPRECIATION and NPV	
10.3.6	perform calculations using DATE and TIME functions	
10.3.7	create simple macros consisting of at least five commands	
10.3.8	execute previously created macros.	

11 Assessment

	Summary	**Practical Skills Test**	**0%**
		Project	**50%**
		Practical Examination	**50%**
11.1	**Technique**	**Practical Skills Test**	
	Mode	School based	
	Weighting	0% Meeting the performance criteria is a prerequisite to sitting the practical examination. **Note:** for candidates taking **both** Database Methods and Spreadsheet Methods the test need only be taken once.	
11.2	**Technique**	**Project**	
	Mode	School based with external moderation by the NCVA.	
	Weighting	50%	

Specifications

Phase 1 — Design (40 marks)

The design should be carried out on paper and should include the following:

1 a concise description of the problem and a proposed solution, identifying a source of data

2 specification of

- input data
- processing required (in words)
- output data

giving typical example of each

3 a design for the data capture form and the screen layout (which should be based on the data capture form)

4 specification of format for all data (e.g. alignment, currency, decimal places) specification of column widths, identification of data that should be hidden/protected/frozen.

Phase 2 — Implementation (50 marks)

Candidates should:

1 create the spreadsheet, entering appropriate data, labels, formulae and functions

2 print out the whole spreadsheet
print out the spreadsheet showing formulae

3 change a variable and print out the spreadsheet to reflect the changes

Phase 3 — Modifications (10 marks)

Candidates should:

1 suggest any modifications/improvements that could be made to the design, giving reasons.

Guidelines

1 Suggested time span:

Phase 1 Design	maximum 10 hours
Phase 2 Implementation	maximum 5 hours

2 To ensure that the project meets with a minimum required standard it should incorporate the following

- use of a simple IF statement
- variables defined and labelled separately
- name of candidate, class and school in bottom left hand corner of each printout
- as a rough guide, the spreadsheet should contain enough material to fill at least one screen.

3 Possible topics for the project:

wages
payroll
stock control
sales analysis

4 Presentation of final submission should be of a professional standard, typed and bound, within the constraints of the equipment available.

5 The Design phase should be marked upon completion (i.e. before commencing the implementation phase).

11.3 Technique **Practical Examination**

Mode Centrally devised by the NCVA. Candidate print-outs will be marked locally with external moderation by NCVA

Weighting 50%

Duration 2 hours (excluding printing time)

Format This examination will be based on a case study and will require the candidate to complete a series of tasks in the allotted time.

The examination will assess the broad range of spreadsheet skills detailed in Units 1 and 2 of the modules. It will focus on the skills outlined in Unit 3 of the module: Macros and Additional Functions (e.g. absolute and relative cell references,

multiple IF functions, LOOKUP functions, recalculations and macros etc.)

12 Performance Criteria

12.1 Practical Skills Test

The performance criteria are detailed in the accompanying Individual Candidate Marking Sheet B20028/MS1.

12.2 Project

The performance criteria are detailed in the accompanying Individual Candidate Marking Sheet B20028/MS2.

12.3 Practical Examination

A detailed Marking Sheet will be devised by the NCVA and provided to teachers for marking locally.

13 Grading

Pass	50 - 64%
Merit	65 - 79%
Distinction	80 - 100%

	National Council for Vocational Awards **Class Marking Sheet** (**Note:** For candidates taking **both** Database Methods and Spreadsheet Methods, their Class Marking Sheet need only be completed once.)	**Spreadsheet Methods (B20028)** **Practical Skills Test Weighting 0%**

CANDIDATE NAME

The following performance criteria must be met before a candidate can attempt the practical examination. Indicate (✓) where candidate can perform skill satisfactorily																				
Formatting a disk																				
Copy a file within same directory/ folder																				
Delete a file from current directory/file																				
Rename a file in current directory/folder																				
Locate files in sub directory/folder																				
Make a file from one directory/folder to another (i.e. copy and delete)																				
Create directories/folders																				
Navigate through directories/folders																				
Multiple copying of files from disk to disk single files																				
Using Wildcards																				

Teacher/Tutor's signature:_____ ***Date:_____***

External Examiner's signature:_____ ***Date:_____***

Individual Candidate Marking Sheet		**Spreadsheet Methods (B20028) Project** **Weighting 50%**

Candidate Name: _____ NCVA Examination No: _____

School/Centre: _____ Roll No: _____ Date: _____

Performance Criteria	Maximum Mark	Candidate Mark
Phase 1 - Design	**40**	
Description of problem and proposed solution *0 - 4 little attempt* *5 - 7 attempt made but not clear* *8 - 10 clearly stated*	10	
Specification of data requirements *0 - 5 neither data nor processing correctly specified* *6 - 10 either data or processing correctly specified* *11 - 15 data correctly assigned and processing appropriate to solution*	15	
Paper Design *0 - 5 data capture form and screen layout do not match,* ***and/or*** *data input, processing and output areas not identifiable* *6 - 10 either data capture form or screen layout do not match, or data input, processing and output areas not identifiable* *11 - 15 data capture form and screen layout match, and data input, processing and output areas easily identifiable*	15	
Phase 2 - Implementation	**50**	
Formatting *1 - 4 formatting poor* *5 - 7 formatting adequate* *8 - 10 formatting appropriate and well thought out*	10	

Individual Student Marking Sheet		**Spreadsheet Methods (B20028) Project** **Weighting 50%**

Candidates Name: _____ NCVA Examination No: _____

School/Centre: _____ Roll No: _____ Date: _____

Performance Criteria	**Maximum Mark**	**Candidate Mark**
Creating the spreadsheet and printout *1 - 7* *results are correct but spreadsheet does not match design and layout is poor* *8 - 15* *results are correct but either layout poor or spreadsheet does not match design* *16 - 25* *printed spreadsheet matches paper design, results are correct and overall spacing and layout are attractive*	25	
Printout of formulae *0* *no printout of formulae* *5* *printout of formulae*	5	
Change of variable *0* *no printout with change of formulae* *10* *printout of spreadsheet with change of formulae*	10	
Phase 3 - Modifications	**10**	
Modifications/Improvements *0* *no modifications/improvements suggested* *1 - 5* *poor or irrelevant modifications/improvements* *6 - 10* *relevant modifications/improvements*	10	
Total	**100**	
Weighted Total (= total x .5)	**50**	

Teacher/Tutor's Signature: _____ Date: _____

External Examiner's Signature: _____ Date: _____

	National Council for Vocational Awards Rank Order Form (Candidate results to be entered in descending order of total marks)	Spreadsheet Methods (B20028)

Sheet number _____ of _____ School/Centre:_____ Roll no:_____

RANK	Candidate Name	NCVA Examination Number	Project	Practical Examination	Total Percentage Mark	Grade Pass=50% Merit=65% Dist.=80%	Moderated Mark/Grade	For NCVA use
			(50%)	(50%)	(100%)			

Teacher/Tutor's signature:_____ Date:_____

Principal/Centre Director's signature:_____ Date:_____

External Examiner's signature:_____ Date:_____