COMHAIRLE NÁISIÚNTA NA
gCÁILÍOCHTAÍ GAIRMOIDEACHAIS

NATIONAL COUNCIL FOR
VOCATIONAL AWARDS

Draft Module Descriptor

Database Methods

Level 2   B20012

September 1995

1	**Title**	**Database Methods**

2	**Code**	**B20012**

3	**Level**	2

4	**Value**	1

5 Purpose

This module has been designed to provide practical experience in the use of database software in typical business and other activities.

It provides an understanding of fundamental database concepts and practical experience in database design, implementation and organisation. It also introduces the learner to the use of additional database operations.

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 Access, Approach, Dataease, Paradox etc.

8 General Aims

This module aims to enable the learner to:

8.1 understand databases and their range of applications

8.2 use databases for a range of applications

8.3 create databases from design specification(s)

8.4 utilise a wide range of database functions in order to manipulate, interrogate and output information

8.5 create a database according to a given brief, under time constraint

| **8.6** | demonstrate personal initiative and resourcefulness in responding to database assignments. |

9 Units

Unit 1	**Basic Database Concepts**
Unit 2	**Database Design, Implementation and Organisation**
Unit 3	**Additional Database Operations**

10 Specific Learning Outcomes

Unit 1   Basic Database Concepts

The learner should be able to:

10.1.1	identify applications suitable for a database
10.1.2	define the terms database, character, field, record, file, data type and key field
10.1.3	identify possible data types as being numeric, character, date and logical
10.1.4	access a database system
10.1.5	identify component parts of a record structure
10.1.6	create a database file from a given structure
10.1.7	enter data
10.1.8	edit data
10.1.9	add new records
10.1.10	delete individual records
10.1.11	modify database structure
10.1.12	save database
10.1.13	recall existing database
10.1.14	browse the database
10.1.15	query the database on a single field

10.1.16	organise (sort and/or index) the database on a single field
10.1.17	output data to screen and printer
10.1.18	exit the database through use of proper procedures.

Unit 2	**Database Design, Implementation and Organisation**

The learner should be able to:

10.2.1	specify a record structure for a given database application in terms of fields name, data type and field length
10.2.2	design a suitable data entry screen
10.2.3	create a record structure
10.2.4	create a data entry screen
10.2.5	use data entry screen to input and edit data
10.2.6	replace field contents for a selected group of records (global)
10.2.7	delete selected group of records (global)
10.2.8	define the primary key field as the main field used in sorting/indexing a file
10.2.9	define the secondary key field as the second field used in conjunction with the primary key when sorting/indexing a file
10.2.10	identify suitable primary and secondary key fields for a range of applications
10.2.11	distinguish between indexing and sorting
10.2.12	state the relative advantages and disadvantages of indexing and sorting
10.2.13	sort a database file on multiple fields
10.2.14	insert a record in a sorted file, maintaining the order
10.2.15	query the database on multiple fields using the logical operators AND, OR, NOT

10.2.16	design a report format to include a report title and column headings
10.2.17	create a report
10.2.18	output a report to screen and printer
10.2.19	modify a report
10.2.20	print selected data using a report format.

Unit 3   Additional Database Operations

The learner should be able to:

10.3.1	use input data validation techniques
10.3.2	total the contents of a given field within a file
10.3.3	create a file consisting of a subset of an existing file
10.3.4	index a file using multiple fields
10.3.5	change active index
10.3.6	update all active indices relating to an active file
10.3.7	sort a file in ascending and descending order
10.3.8	query a database using a logical field
10.3.9	select records containing a specified character string within a character field
10.3.10	print selected mailing labels.

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 NCVA.

Weighting   50%

Specifications   **Phase 1 — Design (45 marks)**

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

1   a concise description of the aim of the project, identifying likely queries and reports

2   specification of
   • record structures including field name, field length, data type key field
   • reports, including headings and contents

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

Phase 2 — Implementation (45 marks)

Candidates should:

1   set up the database by creating the record structure and screen format, and inputting data

2   print out the entire database

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print out the structure of the database and screen format

3   carry out at least two relevant queries as identified at design phase, one of which should use a logical operator (i.e. AND, OR, NOT)

4   organise the database on a minimum of 2 separate fields and produce two printouts using the appropriate report format.

Phase 3 — Modifications and improvements (10 marks)

Candidates should:

1   suggest modifications/improvements to the original design in the light of the results of the implementation of the design.

Guidelines

1   Field types should consist of at least character, numeric and one other.

2   Databases should contain at least 5 fields and a minimum of 25 records.

3   Each query should have at least 4 matching records.

4   Candidate's name, class and school should be on each printout.

5   Each printout should be clearly identified as to its contents and origin (even if hand-written).

6   Suggested time span
   Phase 1 - Design   10 hours
   Phase 2 - Implementation   5 hours

7   Data should be relevant to the project although no marks will be given for collection of data.

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

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

11.2   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: Additional Database Concepts (e.g. production of labels, organising in ascending and descending order, creating subset of an existing file, string searching, querying using a logical field etc.)

12 Performance Criteria

12.1 Practical Skills test The performance criteria are detailed in the accompanying Class Marking Sheet B20012/MS1.

12.2 Project The performance criteria are detailed in the accompanying Individual Candidate Marking Sheet B20012/MS2.

12.3 Practical Examination A detailed marking scheme will be devised for the examination and be 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).	**Database Methods (B20012) 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:*_____

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Individual Candidate Marking Sheet		Database Methods (B20012) Project **Weighting 50%**

Candidate Name: _____ **NCVA Examination No:** _____

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

Performance Criteria	Maximum Mark	Candidate Mark
Phase 1 - Design	**45**	
Description of problem and proposed solution *0 - 5 poor attempt to state aim **and/or** poor attempt to identify queries and reports* *6 - 10 attempt made but aim is not clear queries and reports not appropriate* *11 - 15 aim is clearly stated with appropriate queries and reports*	15	
Specification of record structure and reports *0 - 5 record structure inappropriate **and/or** no key field identified, **and /or** reports not specified* *6 - 10 record structure adequate but no key field identified, reports poorly specified* *11 - 15 record structure correctly specified and key field identified, reports well specified*	15	
Paper Design *0 - 5 poor match of data capture form and screen layout* *6 - 10 data capture form and screen layout match, but poor design* *11 - 15 data capture form and screen layout match, and well designed.*	15	

Individual Candidate Marking Sheet		Database Methods (B20012) Project **Weighting 50%**

Candidate Name: _____ NCVA Examination No: _____

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

Performance Criteria	Maximum Mark	Candidate Mark
Phase 2 - Implementation	**45**	
Creation of Database		
Inputting data accurately and printing out database	10	
Creating and printing screen format of database	5	
Querying and printing		
Two appropriate queries (5 marks each)	10	
Use of logical operator in one query	5	
Report format (5 marks each) *Including appropriate fields and headings, used in printout of both queries.*	10	
Organising and Printing *0 no organisation and printout* *1 - 2 organisation on inappropriate field* *3 - 5 organisation on appropriate field*	5	
Phase 3 - Modifications/Improvements	**10**	
0 no modifications/improvements suggested *1 - 2 poor or irrelevant modifications/improvements* *3 - 5 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)

Database Methods (B20012)

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:_____*