

**The Further Education and Training Awards Council (FETAC)  
was set up as a statutory body on 11 June 2001  
by the Minister for Education and Science.  
Under the Qualifications (Education & Training) Act, 1999,  
FETAC now has responsibility for making awards  
previously made by NCVA.**



**Module Descriptor**

# **Database Methods**

**Level 5 B20012**

**September 2001**

**[www.fetac.ie](http://www.fetac.ie)**

## Level 5 Module Descriptor

### Summary of Contents

<b>Introduction</b>	Describes how the module functions as part of the national vocational certificate framework.
<b>Module Title</b>	Indicates the module content. This title appears on the learner's certificate. It can be used to download the module from the website <a href="http://www.fetac.ie">www.fetac.ie</a> .
<b>Module Code</b>	An individual code is assigned to each module; a letter at the beginning denotes a vocational or general studies area under which the module is grouped and the first digit denotes its level within the national vocational certificate framework.
<b>Level</b>	Indicates where the module is placed in the national vocational certificate framework, from Level 3 to Level 6.
<b>Credit Value</b>	Denotes the amount of credit that a learner accumulates on achievement of the module.
<b>Purpose</b>	Describes in summary what the learner will achieve on successfully completing the module and in what learning and vocational contexts the module has been developed. Where relevant, it lists what certification will be awarded by other certification agencies.
<b>Preferred Entry Level</b>	Recommends the level of previous achievement or experience of the learner.
<b>Special Requirements</b>	Usually 'none' but in some cases detail is provided here of specific learner or course provider requirements. There may also be reference to the minimum safety or skill requirements that learners must achieve prior to assessment.
<b>General Aims</b>	Describe in 3-5 statements the broad skills and knowledge learners will have achieved on successful completion of the module.
<b>Units</b>	Structure the learning outcomes; there may be no units.
<b>Specific Learning Outcomes</b>	Describe in specific terms the knowledge and skills that learners will have achieved on successful completion of the module.
<b>Portfolio of Assessment</b>	Provides details on how the learning outcomes are to be assessed.
<b>Grading</b>	Provides details of the grading system used.
<b>Individual Candidate Marking Sheets</b>	List the assessment criteria for each assessment technique and the marking system.
<b>Module Results Summary Sheet</b>	Records the marks for each candidate in each assessment technique and in total. It is an important record for centres of their candidate's achievements.
<b>Appendices</b>	Can include approval forms for national governing bodies.
<b>Glossary of Assessment Techniques</b>	Explains the types of assessment techniques used to assess standards.
<b>Assessment Principles</b>	Describes the assessment principles that underpin FETAC approach to assessment.

## Introduction

A module is a statement of the standards to be achieved to gain an FETAC award. Candidates are assessed to establish whether they have achieved the required standards. Credit is awarded for each module successfully completed.

The standards in a module are expressed principally in terms of specific learning outcomes, i.e. what the learner will be able to do on successful completion of the module. The other elements of the module - the purpose, general aims, assessment details and assessment criteria - combine with the learning outcomes to state the standards in a holistic way.

While FETAC is responsible for setting the standards for certification in partnership with course providers and industry, it is the course providers who are responsible for the design of the learning programmes. The duration, content and delivery of learning programmes should be appropriate to the learners' needs and interests, and should enable the learners to reach the standard as described in the modules. Modules may be delivered alone or integrated with other modules.

The development of learners' **core skills** is a key objective of vocational education and training. The opportunity to develop these skills may arise through a single module or a range of modules. The core skills include:

- taking initiative
- taking responsibility for one's own learning and progress
- problem solving
- applying theoretical knowledge in practical contexts
- being numerate and literate
- having information and communication technology skills
- sourcing and organising information effectively
- listening effectively
- communicating orally and in writing
- working effectively in group situations
- understanding health and safety issues
- reflecting on and evaluating quality of own learning and achievement.

Course providers are encouraged to design programmes which enable learners to develop core skills.

<b>1</b>	<b>Module Title</b>	<b>Database Methods</b>
<b>2</b>	<b>Module Code</b>	<b>B20012</b>
<b>3</b>	<b>Level</b>	<b>5</b>
<b>4</b>	<b>Credit Value</b>	<b>1 credit</b>
<b>5</b>	<b>Purpose</b>	<p>This module has been designed to provide practical experience in the use of database software in typical business and other activities.</p> <p>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.</p> <p>This is one of the mandatory modules for the Level 5 Certificate Information Processing award.</p>
<b>6</b>	<b>Preferred Entry Level</b>	Level 4 Certificate, Leaving Certificate or equivalent qualifications and/or relevant life and work experiences.
<b>7</b>	<b>Special Requirements</b>	Centres wishing to provide this module must have access to suitable software.
<b>8</b>	<b>General Aims</b>	<p><i>Learners who successfully complete this module will:</i></p> <p><b>8.1</b> understand databases and their range of applications</p> <p><b>8.2</b> use databases for a range of applications</p> <p><b>8.3</b> create databases from design specification(s)</p> <p><b>8.4</b> utilise a wide range of database functions in order to manipulate, interrogate and output information</p> <p><b>8.5</b> create a database according to a given brief, under time constraint</p> <p><b>8.6</b> demonstrate personal initiative and resourcefulness in responding to database assignments.</p>

<b>9</b>	<b>Units</b>	<b>The specific learning outcomes are grouped into 3 units.</b>
	<b>Unit 1</b>	<b>Basic Database Concepts</b>
	<b>Unit 2</b>	<b>Database Design, Implementation and Organisation</b>
	<b>Unit 3</b>	<b>Additional Database Operations</b>

**10 Specific Learning Outcomes**

**Unit 1 Basic Database Concepts**

*Learners 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**
- Learners 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**

*Learners 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 Portfolio of Assessment**

Please refer to the glossary of assessment techniques and the note on assessment principles at the end of this module descriptor.

All assessment is carried out in accordance with FETAC regulations.

Assessment is devised by the internal assessor, with external moderation by FETAC.

<b>Summary</b>	<b>Examination (Practical)</b>	<b>50%</b>
	<b>Project</b>	<b>50%</b>

**11.1 Examination**

The internal assessor will devise a practical examination that assesses candidates' mastery of database skills demonstrated in a set period of time under restricted conditions.

The examination will be based on a range of specific learning outcomes and will be 2 hours in duration.

The format of the examination will be as follows:

The internal assessor will design specific tasks which will require candidates to demonstrate their ability to:

- create a database structure (minimum 5 fields)
- describe the database structure design
- design, create and print a screen data entry form
- edit the database i.e. add fields, data and records; delete fields, data and records
- query the database on single and multiple fields and using a wildcard and a logical operator
- organise the database by primary and secondary sorts
- produce reports with headings, sum and average calculations, customised labels with multiple fields
- save and print.

## **11.2 Project**

The internal assessor will devise a project brief that requires candidates to demonstrate:

- understanding and application of database concepts
- ability to design, implement and modify a database.

The project brief will focus on a broad range of specific learning outcomes and will require candidates to design, implement and modify a database.

The database should contain at least 5 fields and a minimum of 25 records. The field types should consist of at least one character field, one numeric and one other.

Evidence for the design phase will include:

- a concise description of the aim of the project, identifying queries and reports
- a specification of record structures including field names, length, data type, key field, reports including headings and contents
- a design for a data capture form and the screen layout.

Evidence for the implementation phase will include:

- a database structure, screen format and inputted data
- a printout of the entire database
- a printout of the structure of the database and screen format
- at least two relevant queries as identified at the design phase, one of which should use a logical operator (i.e. AND, OR, NOT)
- the database organised on primary and secondary fields
- two appropriate report formats.

Evidence for the modification phase will include:

- suggested modifications or improvements to the original design.

## **12 Grading**

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

**Individual Candidate  
Marking Sheet 1**



**Database Methods  
B20012  
Examination (Practical) 50%**


**Candidate Name:** \_\_\_\_\_ **PPSN.:** \_\_\_\_\_

**Centre:** \_\_\_\_\_ **Centre No.:** \_\_\_\_\_

Assessment Criteria	Maximum Mark	Candidate Mark
<p><b>Creating</b></p> <ul style="list-style-type: none"> <li>database structure (minimum 5 fields) and entry form accurately created</li> <li>data accurately inputted (deduct 0.5 mark per keystroke error to maximum of 2)</li> </ul>	<b>10</b>	
<p><b>Screen Data Entry Form</b></p> <ul style="list-style-type: none"> <li>screen data entry form accurately designed, created and printed</li> </ul>	<b>5</b>	
<p><b>Editing</b></p> <ul style="list-style-type: none"> <li>new records, fields, data added and/or deleted as required</li> </ul>	<b>5</b>	
<p><b>Queries</b></p> <ul style="list-style-type: none"> <li>database queried on single and multiple fields</li> <li>logical operator and wildcard appropriately applied</li> </ul>	<b>10</b>	
<p><b>Organise</b></p> <ul style="list-style-type: none"> <li>database organised on primary fields and secondary fields</li> </ul>	<b>5</b>	
<p><b>Reports and Labels</b></p> <ul style="list-style-type: none"> <li>report(s) with appropriate heading(s), field(s), calculations (i.e. SUM or AVG) produced</li> <li>labels (with multiple fields) appropriately produced</li> </ul>	<b>10</b>	
<p><b>Save and Print</b></p> <ul style="list-style-type: none"> <li>database, queries and reports saved</li> <li>required printouts accurately produced</li> </ul>	<b>5</b>	
<b>TOTAL MARKS</b>	<b>50</b>	
<i>This mark should be transferred to the Module Results Summary Sheet</i>		

**Internal Assessor's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**External Authenticator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

<b>Individual Candidate Marking Sheet 2</b>		<b>Database Methods B20012 Project 50%</b>
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**Candidate Name:** \_\_\_\_\_ **PPSN.:** \_\_\_\_\_

**Centre:** \_\_\_\_\_ **Centre No.:** \_\_\_\_\_

Assessment Criteria	Maximum Mark	Candidate Mark
<b>Design</b> <ul style="list-style-type: none"> <li>• aims of project clearly described</li> <li>• database structure well designed</li> <li>• data capture form and screen data entry form well designed</li> <li>• queries and reports appropriately specified</li> </ul>	<b>20</b>	
<b>Implementation</b> <ul style="list-style-type: none"> <li>• data accurately inputted</li> <li>• database used to sort, query and organise data effectively</li> <li>• reports with headings and sum and average calculations attractively produced</li> <li>• labels with multiple fields accurately produced</li> <li>• database, queries and reports saved and printed</li> </ul>	<b>20</b>	
<b>Modifications</b> <ul style="list-style-type: none"> <li>• relevant modifications /improvements suggested</li> </ul>	<b>10</b>	
<b>TOTAL MARKS</b>	<b>50</b>	
<i>This mark should be transferred to the Module Results Summary Sheet</i>		

**Internal Assessor's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**External Authenticator's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_



## **Glossary of Assessment Techniques**

**Assignment** *An exercise carried out in response to a brief with specific guidelines and usually of short duration.*

Each assignment is based on a brief provided by the internal assessor. The brief includes specific guidelines for candidates. The assignment is carried out over a period of time specified by the internal assessor.

Assignments may be specified as an oral presentation, case study, observations, or have a detailed title such as audition piece, health fitness plan or vocational area profile.

**Collection of Work**

*A collection and/or selection of pieces of work produced by candidates over a period of time that demonstrates the mastery of skills.*

Using guidelines provided by the internal assessor, candidates compile a collection of their own work. The collection of work demonstrates evidence of a range of specific learning outcomes or skills. The evidence may be produced in a range of conditions, such as in the learning environment, in a role play exercise, or in real-life/work situations.

This body of work may be self-generated rather than carried out in response to a specific assignment eg art work, engineering work etc.

**Examination**

*A means of assessing a candidate's ability to recall and apply skills, knowledge and understanding within a set period of time (time constrained) and under clearly specified conditions.*

Examinations may be:

- practical, assessing the mastery of specified practical skills demonstrated in a set period of time under restricted conditions
- oral, testing ability to speak effectively in the vernacular or other languages
- interview-style, assessing learning through verbal questioning, on one-to-one/group basis
- aural, testing listening and interpretation skills
- theory-based, assessing the candidate's ability to recall and apply theory, requiring responses to a range of question types, such as objective, short answer, structured, essay. These questions may be answered in different media such as in writing, orally etc.

**Learner Record**

*A self-reported record by an individual, in which he/she describes specific learning experiences, activities, responses, skills acquired.*

Candidates compile a personal logbook/journal/diary/daily diary/record/laboratory notebook/sketch book.

The logbook/journal/diary/daily diary/record/laboratory notebook/sketch book should cover specified aspects of the learner's experience.

## **Project**

*A substantial individual or group response to a brief with guidelines, usually carried out over a period of time.*

Projects may involve:

- research – requiring individual/group investigation of a topic
- process – eg design, performance, production of an artefact/event

Projects will be based on a brief provided by the internal assessor or negotiated by the candidate with the internal assessor. The brief will include broad guidelines for the candidate. The work will be carried out over a specified period of time.

Projects may be undertaken as a group or collaborative project, however the individual contribution of each candidate must be clearly identified.

The project will enable the candidate to demonstrate: (*some of these – about 2-4*)

- understanding and application of concepts in (specify area)
- use/selection of relevant research/survey techniques, sources of information, referencing, bibliography
- ability to analyse, evaluate, draw conclusions, make recommendations
- understanding of process/planning implementation and review skills/ planning and time management skills
- ability to implement/produce/make/construct/perform
- mastery of tools and techniques
- design/creativity/problem-solving/evaluation skills
- presentation/display skills
- team working/co-operation/participation skills.

## **Skills**

### **Demonstration**

*Assessment of mastery of specified practical, organisational and/or interpersonal skills.*

These skills are assessed at any time throughout the learning process by the internal assessor/another qualified person in the centre for whom the candidate undertakes relevant tasks.

The skills may be demonstrated in a range of conditions, such as in the learning environment, in a role-play exercise, or in a real-life/work situations.

The candidate may submit a written report/supporting documentation as part of the assessment.

Examples of skills: laboratory skills, computer skills, coaching skills, interpersonal skills.

## **FETAC Assessment Principles**

- 1** Assessment is regarded as an integral part of the learning process.
- 2** All FETAC assessment is criterion referenced. Each assessment technique has **assessment criteria** which detail the range of marks to be awarded for specific standards of knowledge, skills and competence demonstrated by candidates.
- 3** The mode of assessment is generally local i.e. the assessment techniques are devised and implemented by internal assessors in centres.
- 4** Assessment techniques in FETAC modules are valid in that they test a range of appropriate learning outcomes.
- 5** The reliability of assessment techniques is facilitated by providing support for assessors.
- 6** Arising from an extensive consultation process, each FETAC module describes what is considered to be an optimum approach to assessment. When the necessary procedures are in place, it will be possible for assessors to use other forms of assessment, provided they are demonstrated to be valid and reliable.
- 7** To enable all learners to demonstrate that they have reached the required standard, candidate evidence may be submitted in written, oral, visual, multimedia or other format as appropriate to the learning outcomes.
- 8** Assessment of a number of modules may be integrated, provided the separate criteria for each module are met.
- 9** Group or team work may form part of the assessment of a module, provided each candidate's achievement is separately assessed.

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