Definition of the domain for summative evaluation

CMP-5063-2

Microcomputing

Computer Programming

Reach for your Dreams

Québec

Definition of the domain for summative evaluation

CMP-5063-2

Microcomputing

Computer Programming

Formation professionnelle et technique
et formation continue

Direction de la formation générale
des adultes

ISBN 2-550-42341-0

Legal deposit — Bibliothèque nationale du Québec, 2004

1. Introduction

This definition of the domain for summative evaluation describes and classifies the essential and representative elements of the *Microcomputing* program, and, more specifically, for the course entitled *Computer Programming*. As such, it gives an overview of the program, but should by no means replace the program itself. The purpose of defining the domain is to ensure that all summative evaluation instruments are consistent with the overall program.

The organization of this definition of the domain is the same as that of those of other courses. The content of each section is, however, specific to this course.

The definition of the domain for summative evaluation is used to prepare examinations that are valid from one version to another, from year to year, and from one school board to another, taking into account the division of responsibilities shared by the Ministère de l'Éducation and the school boards.

2. Program Orientations and Consequences for Summative Evaluation

Orientations	Consequences
The course *Computer Programming* is designed to familiarize students with the basic concepts of programming.	The students should be able to autonomously apply the basic elements of a programming language.
The program favours a pragmatic approach.	The students' practical skills should be evaluated.
The objectives of the course involve analyzing, organizing and producing a computer program.	The students' computer program and their ability to analyze and organize its production will be evaluated.
The program is based on the most widely used programming languages.	It should be possible to adapt the summative evaluation to the different programming languages.

3. Course Content for Purposes of Summative Evaluation

Themes

- **Planning and analysis of the program**
  - Introduction and justification
  - Validation of instructions
  - Executable program
  - Improvements or modifications

- **Production of the program**
  - Programming elements
  - Algorithm
  - Encoding

Skills

- **Analyzing:** Identifying the elements of an application, as well as the relationships between these elements and their use.

- **Producing:** Integrating knowledge and several different skills in an appropriate, original and well-organized manner in order to create a complex product.

4. Table of Dimensions

Themes / Skills	Planning and Analysis of the Program 35%	Production of the Program 65%
Analyzing 35%	**1** Introduction and justification 10%	
	5 Validation of instructions 5%	
	6 Executable program 10%	
	7 Improvements or modifications 10%	
Producing 65%		**2** Programming elements 30%
		3 Algorithm 10%
		4 Encoding 25%

Note: The dimensions are numbered in the order in which the behaviours will be observed.

5. Observable Behaviours

General Description

The evaluation instrument should be based on the following list of observable behaviours.

Students should be able to:

1. Describe the elements, objectives, and steps involved in the creation of a computer program.

2. Write a program containing **at least** the following programming elements:

   – a setting of a file position indicator
   – a variable
   – an initialization procedure or function
   – a simple loop

3. Write the program's algorithm according to the rules and the sequence of steps.

4. Encode the program's algorithm using a programming language.

5. Validate the program's instructions.

6. Demonstrate that the program is executable.

7. Suggest improvements or modifications to the program.

6. Explanation of the Content and Weighting

The dimensions are weighted according to their importance in the attainment of the course objectives.

Since the dimensions are related to *Themes* and *Skills,* the weighting of these themes and skills is based on the weighting assigned to the dimensions.

Weighting

- In terms of skills:
  - *Analyzing* skill 35%
  - *Producing* skill 65%

- In terms of themes:
  - Planning and analysis of the program 35%
  - Production of the program 65%

A list of evaluation criteria has been drawn up to ensure that evaluation is carried out as fairly as possible. Criteria that apply to each dimension have been identified and weighted. This information appears in section 7, *Description of the Examination*.

7. Description of the Examination

7.1 Type of Examination

Evaluation of the competencies acquired by the students in the *Computer Programming* course is based on a folder prepared by the students containing:

- a description of the objectives and the procedure to produce the computer program
- the program's algorithm
- the program itself
- a description of the suggested improvements or modifications

The folders will be analyzed using an evaluation grid.

7.2 Characteristics of the Examination

- The students must be made aware of the evaluation conditions and procedure.
- The size of the program to be produced will depend on the programming language used.
- At the end of the course, the students will hand in the folder described above.
- The contents of the folder must be produced autonomously by the students.
- The students must use a computer to create the program.
- The evaluation grid must take into account the observable behaviours described for each of the dimensions.
- The evaluation grid must take into account the weighting specified in the table of dimensions.
- The evaluation grid must take into account the evaluation criteria listed in section 7.3, as well as the weighting specified in section 7.4.

7.3 Evaluation Criteria

The following criteria will be used to evaluate the students' folder:

- **Relevance:** Significant relationship between the needs determined and the expected results
- **Efficiency:** Relationship between the usefulness of the result, the objectives and the means used to obtain the result
- **Coherence:** Logical relationships
- **Accuracy:** Accurate actions
- **Presentation:** Quality of presentation, ergonomics

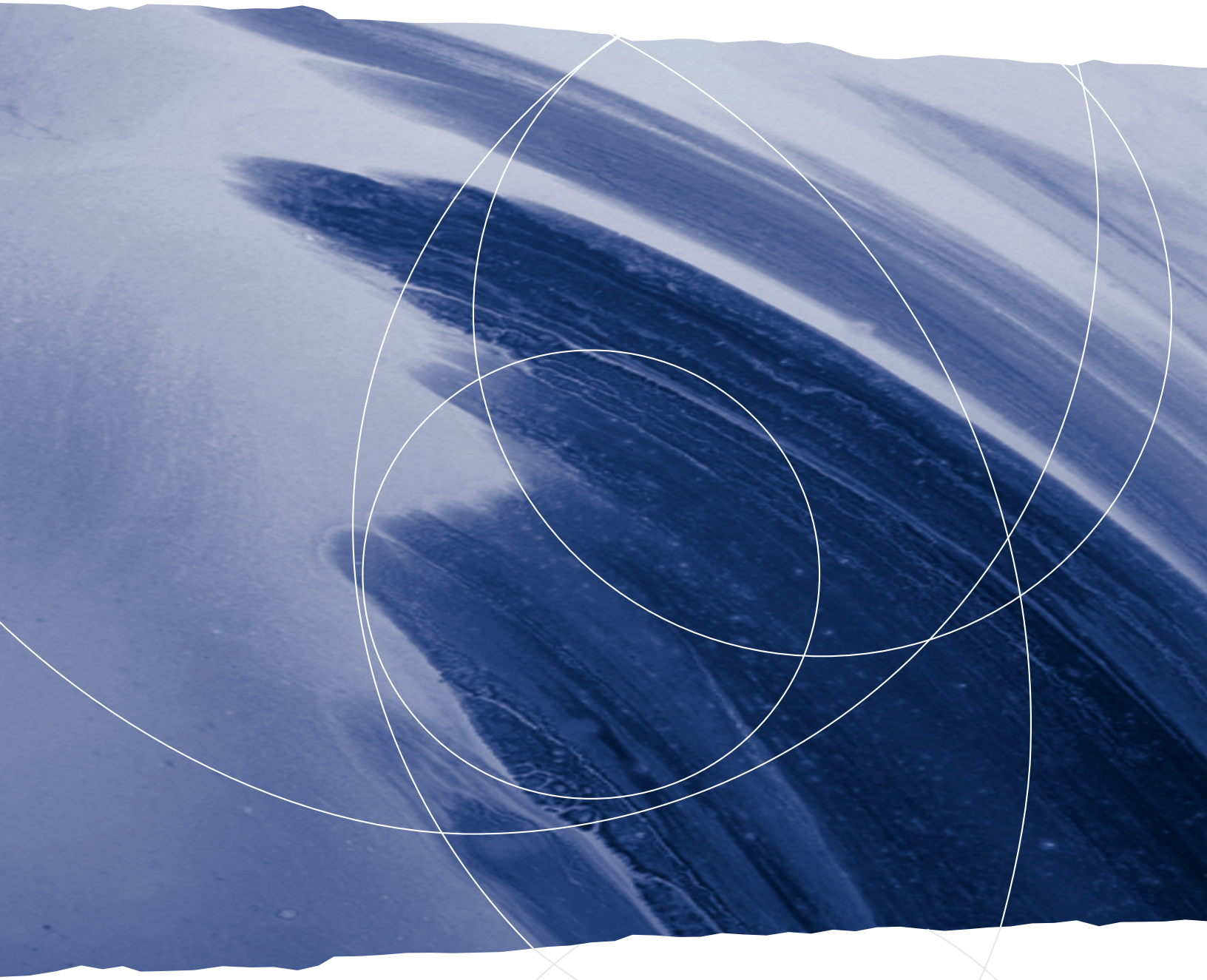
7.4 Weighting With Respect to Evaluation Criteria

The following table presents the criteria to be used to measure each dimension.

CRITERIA / DIMENSIONS	RELEVANCE 32%	EFFICIENCY 35%	COHERENCE 20%	ACCURACY 8%	PRESENTATION 5%
1 Introduction and justification 10%	√ 5%	√ 5%			
2 Programming elements 30%	√ 20%	√ 10%			
3 Algorithm 10%		√ 5%	√ 5%		
4 Encoding 25%		√ 10%	√ 10%	√ 5%	
5 Validation of instructions 5%		√ 2%		√ 3%	
6 Executable program 10%	√ 2%	√ 3%			√ 5%
7 Improvements or modifications 10%	√ 5%		√ 5%		

7.5 Pass Mark

The pass mark is set at 60 out of 100.



Éducation Québec

38-3941-A