

7

BUILDINGS AND PUBLIC WORKS

COMMERCIAL AND RESIDENTIAL PAINTING

PROGRAM OF STUDY
5616

**BUILDINGS AND
PUBLIC WORKS**

**COMMERCIAL
AND RESIDENTIAL
PAINTING**

PROGRAM OF STUDY
5616

Gouvernement du Québec
Ministère de l'Éducation, 1999 – 98-0974

ISBN : 2-550-34011-6

Legal deposit – Bibliothèque nationale du Québec, 1999

CONSTRUCTION

COMMERCIAL AND RESIDENTIAL PAINTING

PROGRAM OF STUDY 5616

The *Commercial and residential Painting* program leads to the Diploma of Vocational Studies (DVS) and prepares the student to practice the occupation of **painter**.

**Direction générale de la formation
professionnelle et technique**

Development Team

Design and Development

Michel Caouette
Education Development Officer

Technical Support

Manon Paquette
Technical Consultant

Coordination

Jean-Paul Bergeron
Coordinator of the Construction Sector

English Version

Translation

Services à la communauté anglophone
Direction de la production en langue anglaise

ACKNOWLEDGMENTS

The ministère de l'Éducation wishes to thank the following people for their invaluable assistance in the development of this program:

Representatives from Business and Industry

Jean-Charles Paquet
Painting Contractor

Frank Giové
Painting Contractor

François Langlois
Painting Contractor

Paul Fortin
Sand Blasting and Painting Contractor

Claude Normand
Sand Blasting and Painting Contractor

Members of the Commission de la construction du Québec

Roger Allard
Les entreprises de peinture R. Allard inc.

Severino Boldarin
Fraternité des peintres, local 349

Daniel Crousset
Versailles 1981 inc.

Guy Desjardins
Association nationale des peintres, local 99

Claude Dionne
Entrepreneur Clarke et Compagnie Limitée

Jean Forget
Centrale des syndicats démocratiques (CSD)

Hervé Morin
Association nationale des peintres, local 99

Gérard Neff
Confédération des syndicats nationaux
(CSN-construction)

Michel St-Gelais
Peinture et décoration MS inc.

Philippe Sellitto
Peinture et sablage Pontiac

This program of study, *Commercial and Residential Painting*, is issued in accordance with section 461 of the *Education Act* (R.S.Q., c. I-13.3).

It has been approved by the confessional committees of the Conseil supérieur de l'éducation in conformity with the provisions of paragraph (a) of section 23 of the *Act respecting the Conseil supérieur de l'éducation* (R.S.Q., c. C-60), as replaced by section 569 of the *Education Act* (1988, chapter 84). This program of study has been authorized for teaching Commercial and Residential Painting in the schools as of September 1, 1992.

Michel Pagé
Minister of Education

TABLE OF CONTENTS

	Page
INTRODUCTION	1
GLOSSARY	3
PART I	
1. SYNOPTIC TABLE	7
2. PROGRAM TRAINING GOALS	9
3. COMPETENCIES	11
Grid of Learning Focuses	12
4. GENERAL OBJECTIVES	13
5. FIRST- AND SECOND-LEVEL OPERATIONAL OBJECTIVES	15
5.1 Definition	15
5.2 How to Read First-Level Operational Objectives	16
PART II	
Block 1	
MODULE 1: THE TRADE AND THE TRAINING PROCESS	21
MODULE 2: USING EQUIPMENT	25
MODULE 3: APPLYING THEORIES OF COLOUR	31
MODULE 4: PREPARING AND FINISHING GYPSUM WALLBOARD SURFACES	35
MODULE 5: INTERPRETING PLANS AND SPECIFICATIONS	41
MODULE 6: ORGANIZATIONS IN THE CONSTRUCTION INDUSTRY	45
MODULE 7: HEALTH AND SAFETY ON CONSTRUCTION SITES	49
MODULE 8: CALCULATING QUANTITIES OF MATERIALS	53
MODULE 9: STRIPPING, SANDING AND CLEANING	57
MODULE 10: PREPARING AND FINISHING CALCAREOUS SURFACES	61
MODULE 11: PREPARING AND FINISHING SYNTHETIC SURFACES	65

Block 2

MODULE 12: DECORATING TECHNIQUES	69
MODULE 13: PREPARING AND FINISHING WOOD SURFACES	73
MODULE 14: PREPARING AND FINISHING METAL SURFACES	79
MODULE 15: HANGING WALLCOVERINGS	85
MODULE 16: APPLYING GRANULAR COMPOUNDS	89

INTRODUCTION

The Commercial and Residential Painting program is based on the orientations for secondary school vocational education adopted by the government in 1986. It was designed on the basis of a new framework for developing vocational education programs that calls for the participation of experts from the workplace and the field of education.

The program of study is developed in terms of competencies, expressed as objectives. These objectives are divided into modules, which are organized into teaching blocks. Various factors were kept in mind in developing the program: training needs, the job situation, purposes, goals, and strategies and means used to attain objectives.

The program of study lists the competencies that are the minimum requirements for a Diploma of Vocational Studies (DVS) for students in both the youth and adult sectors. It also provides the basis for organizing courses, planning teaching strategies, and designing instructional and evaluation materials.

The duration of the program is 900 hours, which includes 555 hours spent on the specific competencies required to practice

the trade and 345 hours on general competencies. The program of study is divided into 16 modules, which vary in length from 15 to 120 hours (multiples of 15). The time allocated to the program is to be used not only for teaching but also for evaluation and remedial work. Modules are divided into two blocks of 450 hours.

This document contains two parts. Part I is of general interest and provides an overview of the training plan. It includes a synoptic table of basic information about the modules, a description of the program training goals, the competencies to be developed and the general objectives. Part II is designed primarily for those directly involved in implementing the program. It contains a description of the operational objectives of each module.

In keeping with this broad approach, three accompanying documents will be provided: a teaching guide, an evaluation guide, and a planning guide.

GLOSSARY

Program Training Goals

Statements that describe the educational aims of a program. These goals are the general goals of vocational education adapted to a specific trade or occupation.

Competency

A set of socio-affective behaviours, cognitive skills or psycho-sensori-motor skills that enable a person to correctly perform a role, function, activity or task.

General Objectives

Instructional objectives that provide an orientation for leading the students to attain one or more related objectives.

Operational Objectives

Statements of the educational aims of a program in practical terms. They serve as the basis for teaching, learning and evaluation.

Module of a Program

A component part of a program of study comprising a first-level operational objective and the related second-level operational objectives.

Credit

A unit used for expressing quantitatively the value of the modules in a program of study. One credit corresponds to 15 hours of training. Students must accumulate a set number of credits to graduate from a program.

PART I

1. SYNOPTIC TABLE

Number of modules : 16 **Commercial and Residential Painting**
Duration in hours: 900 **Code:** 5616
Credits : 60

CODE	TITLE OF THE MODULE	Hours	CREDITS*
756 701	1 The Trade and the Training Process	15	1
756 712	2 Using Equipment	30	2
756 722	3 Applying Theories of Colour	30	2
756 737	4 Preparing and Finishing Gypsum Wallboard Surfaces	105	7
756 745	5 Interpreting Plans and Specifications	45	3
755 001	6 Organizations in the Construction Industry	15	1
755 002	7 Health and Safety of Construction Sites	30	2
756 754	8 Calculating Quantities of Materials	60	4
756 763	9 Stripping, Sanding and Cleaning	45	3
756 774	10 Preparing and Finishing Calcareous Surfaces	60	4
756 781	11 Preparing and Finishing Synthetic Surfaces	15	1
756 826	12 Apply Decorating Techniques	90	6
756 797	13 Preparing and Finishing Wood Surfaces	105	7
756 806	14 Preparing and Finishing Metal Surfaces	90	6
756 818	15 Hanging Wallcoverings	120	8
756 833	16 Applying Granular Compounds	45	3

* 15 hours = 1 credit..

The two blocks of 450hours are separated by a dotted line.

This program leads to a Diploma of Vocational Studies (DVS) in Commercial and Residential Painting.

2. PROGRAM TRAINING GOALS

The training goals of the *Commercial and Residential Painting* program are based on the general goals of vocational education and take into account the specific nature of the trade. These goals are:

To develop effectiveness in the practice of a trade.

- To teach students to perform painting tasks and activities correctly, at an acceptable level of competence for entry into the job market.
- To prepare students to perform satisfactorily on the job by fostering:
 - the intellectual skills and techniques needed to make sound decisions on the job;
 - a concern for communicating effectively with superiors, colleagues and potential clients;
 - a constant concern for occupational health and safety;
 - basic skills useful in performing the different painting tasks, and in particular tasks related to the preparation and finishing of surfaces;
 - a concern for cleanliness and tidiness.

To ensure integration into the working world.

- To familiarize students with their rights and responsibilities as workers.
- To familiarize students with the job market in general and the surface preparation and finishing industry in particular.

To foster personal development and the acquisition of occupational knowledge.

- To foster independence, and instill a sense of responsibility and the desire to succeed.
- To foster a concern for excellence.
- To encourage students to assess their own work regularly.
- To help students acquire effective work methods and a sense of discipline.
- To help students develop their sense of aesthetics.

To ensure job mobility.

- To help students develop a positive attitude toward technological change and new situations.
- To help students develop their ability to learn and to obtain information.
- To prepare students for a creative job search.

3. COMPETENCIES

The competencies to be developed in the *Commercial and Residential Painting* program are shown in the grid of learning focuses on the following page. The grid lists general and specific competencies as well as the major steps in the work process.

General competencies involve activities common to several tasks or situations. They cover, for example, the technological or scientific principles that the students must understand to practise the trade or occupation. Specific competencies focus on tasks and activities that are of direct use in the trade or occupation. The work process includes the most important steps in carrying out the tasks and activities of the trade or occupation.

The grid of learning focuses shows the relationship between the general competencies on the horizontal axis and the specific competencies on the vertical axis. The symbol (Δ) indicates a correlation between a specific competency and a step in the work process. The symbol (\circ) indicates a correlation between a general and a specific competency.

The symbols (\blacktriangle) and (\bullet) indicate that these relationships have been taken into account in the formulation of objectives intended to develop specific competencies related to the trade or occupation.

The logic used in constructing the grid influences the course sequence. Generally speaking, this sequence follows a logical progression in terms of the complexity of the learning involved and the development of the students' autonomy. The vertical axis of the grid shows the competencies directly related to the practice of a specific trade or occupation. These competencies are arranged in a relatively fixed order; therefore, the modules should be taught, insofar as possible, in the order represented on the grid. The modules including the general competencies on the horizontal axis should be taught in relation to those on the vertical axis. This means that some modules are prerequisite to others, while other modules are taught concurrently.

4. GENERAL OBJECTIVES

The general objectives of the *Commercial and Residential Painting* program are presented below, along with the major statement of each corresponding first-level operational objective.

To develop in the students the competencies required to integrate harmoniously into the school and work environments.

- Determine their suitability for the trade and the training process.
- Become familiar with organizations in the construction industry.
- Apply rules of health and safety on construction sites.

To develop in the students the basic competencies required to perform tasks related to painting.

- Calculate quantities of materials used in the trade.
- Use equipment.

- Apply stripping, sanding and cleaning techniques.
- Interpret plans and specifications.
- Apply theories of colour.
- Apply decorating techniques.

To develop in the students the specific competencies required to perform tasks related to painting.

- Prepare and finish gypsum wallboard surfaces.
- Prepare and finish a calcareous surface.
- Prepare and finish a synthetic surface.
- Prepare and finish a wood surface.
- Prepare and finish a metal surface.
- Hang wallcoverings.
- Apply granular compounds.

5. FIRST- AND SECOND-LEVEL OPERATIONAL OBJECTIVES

5.1 DEFINITION

A first-level objective is defined for each competency to be developed. Competencies are organized into an integrated training program designed to prepare students to practise the trade or occupation. This systematic organization of competencies produces better overall results than training by isolated objectives. More specifically, it fosters a smooth progression from one objective to the next, saves teaching time by eliminating needless repetition, and integrates and reinforces learning material.

First-level operational objectives are the main, compulsory teaching/learning targets and they are specifically evaluated for certification. There are two kinds of operational objectives: behavioural and situational.

- **A behavioural objective** is a relatively closed objective that describes the actions and results expected of the student by the end of a learning step. Evaluation is based on expected results.
- **A situational objective** is a relatively open-ended objective that outlines the major phases of a learning situation. It allows for output and results to vary from one student to another. Evaluation is based on the student's participation in the activities of the learning context.

Second-level operational objectives are intermediate teaching/learning targets deemed prerequisite for attaining first-level objectives. They are grouped according to the specifications (see 5.2 A) or the phases (see 5.2 B) of the first-level objective.

The division of operational objectives into first- and second-level objectives is based on a clear distinction between the levels of learning:

- learning involving prerequisite knowledge
- learning involving competencies

Second-level operational objectives indicate prerequisite knowledge. They prepare the students to learn what is necessary to attain the first-level operational objectives, which collectively lead to the development of a competency. The objectives should always be adapted to meet the particular needs of the individual students or groups of students.

First-level operational objectives cover the learning that the students need to develop a competency:

- The specifications or the phases of the objective determine or guide specific learning, thereby allowing the competency to be developed step by step.

- The objective as a whole (i.e. the six components and in particular the last phase of a situational objective) determines or guides the overall learning and the integration and synthesis of this learning, allowing the competency to be developed fully.
- specific learning activities for second-level objectives
- specific learning activities for the specifications or phases of first-level objectives
- general learning activities for first-level objectives

To attain the objectives, the following learning activities may be prepared:

5.2 HOW TO READ FIRST-LEVEL OPERATIONAL OBJECTIVES

A. How to Read a Behavioural Objective

Behavioural objectives consist of six components. The first three provide an overview of the objective:

1. The **expected behaviour** states a competency in terms of the general behaviour that the students are expected to have acquired by the end of the module.
2. The **conditions for performance evaluation** define what is necessary or permissible to the students during evaluation designed to verify whether or not the students have attained the objective. This means that the conditions for evaluation are the same wherever and whenever the program is taught.
3. The **general performance criteria** define the requirements by which to judge whether or not the results obtained are generally satisfactory.

The last three components ensure that the objective is understood clearly and unequivocally:

4. The **specifications of the expected behaviour** describe the essential elements of the competency in terms of specific behaviours.
5. The **specific performance criteria** define the requirements for each of the specifications of behaviour. They ensure a more enlightened decision on the attainment of the objective.
6. The **field of application** defines the limits of the objective, where necessary. It indicates cases where the objective applies to more than one task, occupation or field.

B. How to Read a Situational Objective

Situational objectives consist of six components:

1. The **expected outcome** states a competency as an aim to be pursued throughout the course.
2. The **specifications** outline the essential aspects of the competency and ensure a better understanding of the expected outcome.
3. The **learning context** provides an outline of the learning situation designed to help the students develop the required competencies. It is normally divided into three phases of learning:
 - information
 - performance, practice or involvement
 - synthesis, integration and self-evaluation
4. The **instructional guidelines** provide suggested ways and means of teaching the course to ensure that learning takes place and that the same conditions apply wherever and whenever the course is taught. These guidelines may include general principles or specific procedures.
5. The **participation criteria** describe the requirements the students must fulfil, which are usually related to each phase of the learning context. They focus on how the students take part in the activities rather than on the results obtained. Participation criteria are normally provided for each phase of the learning context.
6. The **field of application** defines the limits of the objective, where necessary. It indicates cases where the objective applies to more than one task, occupation or field.

PART II

MODULE 1: THE TRADE AND THE TRAINING PROCESS

CODE: 756701

Duration: 15 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to **determine their suitability for the trade and the training process.**

SPECIFICATIONS

At the end of this module, the students will:

- Be familiar with the nature of the trade.
- Understand the training process.
- Confirm their career choice.

LEARNING CONTEXT

PHASE 1: Information on the Trade

- Learning about the job market in residential and commercial painting: work environments, job prospects, remuneration, opportunities for promotion and transfer, and the selection of candidates.
- Learning about the nature and requirements of the trade: tasks, working conditions, evaluation criteria, rights and responsibilities of workers.
- Improving their perception of the trade: advantages, disadvantages, requirements.

PHASE 2: Information on and Participation in the Training Process

- Learning about the skills, aptitudes and knowledge required to practise the trade.
- Learning about the training process: program of study, training program, evaluation methods, certification of studies.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 3: Evaluation and Confirmation of Career Choice

- Specifying their preferences, aptitudes and interests with respect to residential and commercial painting.
- Assessing their career choice.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Create a climate that favours the students' personal growth and entry into the job market.
- Encourage the students to engage in discussions and express their opinions.
- Involve the students in the suggested activities.
- Help the students to arrive at an accurate perception of the trade.
- Provide the students with the means to assess their career choice honestly and objectively.
- Organize visits to companies representative of the workplace in residential and commercial painting.
- Make available all pertinent reference materials (e.g. information on the trade, training programs, guides).
- Organize a meeting with trade specialists.

**FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE**

PARTICIPATION CRITERIA

PHASE 1:

- Gather information on most of the topics to be covered.
- Appropriately express their views on the trade during a group discussion, relating them to the information they have gathered.

PHASE 2:

- Give their opinions on some of the trade requirements.
- Carefully study the documents provided.
- Listen attentively to explanations.
- Appropriately express their views on the training program.
- Clearly express their views on the trade and the training process.

PHASE 3:

- Write a report that:
 - sums up their preferences, aptitudes and interests with respect to the trade;
 - clearly explains how they arrived at their career choice by comparing the nature and requirements of the trade with the above-mentioned preferences, aptitudes and interests.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking any of the activities:

1. Be receptive to information about the trade and the training process.
2. Be willing to share their views on the trade with other members of the group.
3. Show respect for themselves and others.

Before undertaking the activities of Phase 1:

4. Provide a personal definition of the work of a residential and commercial painter.
5. Acquire a method for locating information.
6. Explain the term *entry-level qualifications*.
7. Explain the main rules governing group discussions.

Before undertaking the activities of Phase 2:

8. Define the terms *skills, aptitudes* and *knowledge*.
9. Describe the nature, purpose and content of a program of study.

Before undertaking the activities of Phase 3:

10. Define the term *career*.
11. Recognize the importance of having a career they enjoy.
12. Describe the main parts of a report confirming their career choice.

MODULE 2: USING EQUIPMENT

CODE: 756712

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **use equipment** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- With the assistance of another student in using scaffolds and ladders
- Using a scaffold and an extension ladder
- Using basic equipment and tools

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Observance of manufacturers' instructions
- Cleanliness of equipment and tools

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
<p>A. Use a:</p> <ul style="list-style-type: none"> • baker scaffold; • sectional steel scaffold; • suspended scaffold. 	<ul style="list-style-type: none"> - Observance of steps in the assembly procedure - Observance of information sheets and manufacturer's instructions - Precautions taken during transportation, assembly, use and disassembly of scaffold - Proper maintenance and storage
<p>B. Use an extension ladder.</p>	<ul style="list-style-type: none"> - Observance of safety rules during transportation, assembly, use and disassembly of ladder - Observance of information sheets and manufacturer's instructions - Proper maintenance and storage
<p>C. Use:</p> <ul style="list-style-type: none"> • a stepladder; • an extension trestle ladder. 	<ul style="list-style-type: none"> - Observance of safety rules during transportation, assembly, use and disassembly of stepladder - Observance of information sheets and manufacturer's instructions - Proper maintenance and storage
<p>D. Maintain basic tools.</p>	<ul style="list-style-type: none"> - Observance of tool maintenance techniques - Correct, safe application of techniques for sharpening knives and scrapers - Observance of tool cleaning techniques - Observance of methods of disposing of hazardous products

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

- E. Maintain the equipment in the workshop:
- lifting truck
 - paint mixer
 - tinting machine
 - compressor and accessories

**SPECIFIC PERFORMANCE
CRITERIA**

- Observance of manufacturers' instructions regarding maintenance programs
- Proper application of health and safety rules

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to use a:

- baker scaffold;
- sectional steel scaffold;
- suspended scaffold (A):

1. Differentiate among the types of scaffolds according to the purpose for which they were designed.
2. Interpret safety standards and rules regarding scaffolds.
3. Describe the main parts of scaffolds, specifying their function and location.
4. List the parts that stabilize and support a scaffold depending on its use.
5. Differentiate among the ways of assembling the various parts of a scaffold.
6. List the operations involved in erecting a scaffold (baker scaffold, sectional steel scaffold and suspended scaffold).

Before learning how to use an extension ladder (B):

7. Differentiate among the types of ladders according to the purpose for which they were designed.
8. Interpret safety standards and rules regarding ladders.
9. Describe the techniques for assembling, using and disassembling a ladder.

Before learning how to use:

- a stepladder;
- an extension trestle ladder (C):

10. Differentiate among the types of stepladders according to the purpose for which they were designed.
11. Interpret safety standards and rules regarding stepladders.
12. Describe the techniques for assembling, using and disassembling a stepladder.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to maintain basic tools (D):

13. List the basic tools.
14. Describe the function of each basic tool.
15. Explain how to clean and maintain basic tools.
16. Describe the techniques for sharpening knives and scrapers.
17. Recognize hazardous products.
18. Explain the methods of disposing of hazardous products.

Before learning how to maintain the equipment in the workshop:

- lifting truck
- paint mixer
- tinting machine
- compressor and accessories (E):

19. Describe equipment maintenance programs.
20. Recognize the purpose and content of an equipment maintenance program.
21. List the health and safety rules applicable to equipment maintenance.

MODULE 3: APPLYING THEORIES OF COLOUR

CODE: 756722

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **apply theories of colour** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following instructions
- Using oil-base paint samples
- Using universal tinters
- Using manufacturers' reference manuals
- With containers of base paint (intermix)
- Using a brush

GENERAL PERFORMANCE CRITERIA

- Exact reproduction of colours requested
- Accurate perception of shades and colour values
- Meticulous, precise work

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Prepare colours.

- Correct identification of colours of the visible spectrum
- Precise preparation of colours requested

B. Select the colour codes.

- Relevant use of manufacturer's shade range
- Accurate location of colour codes

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare colours (A):

1. Explain the different theories of colour.
2. Describe the properties of colours.
3. Distinguish among the shades, tones and tints of colours.

Before learning how to select the colour codes (B):

4. List the reference documents required to locate colour codes.
5. Describe the methods of locating colour codes.
6. Select the manufacturers' shade range for finishing products.
7. Describe how a spectrophotometer is used to locate colour codes.
8. Use a spectrophotometer.

MODULE 4: PREPARING AND FINISHING GYPSUM WALLBOARD SURFACES

CODE: 756737

Duration: 105 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **prepare and finish gypsum wallboard surfaces** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following written instructions
- On vertical and horizontal gypsum surfaces
- Using
 - a stepladder
 - appropriate tools
 - required materials
- Using a latex primer and two coats of oil-base paint applied with a brush and a roller

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Observance of directions for use and manufacturers' instructions
- Economical use of materials
- Proper use of tools and equipment
- Observance of prescribed time limit

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Prepare materials, tools and equipment.	<ul style="list-style-type: none"> - Correct selection of materials - Correct selection of tools and equipment - Appropriate estimate of required quantities - Safe assembly of scaffold
B. Repair wallboards.	<ul style="list-style-type: none"> - Proper installation of metal corners - Proper preparation and application of joint compounds - Proper placement of reinforcing tapes - Observance of drying time - Proper sanding of joints - Appropriate personal and general safety measures
C. Prepare the surface.	<ul style="list-style-type: none"> - Proper concealing of adjacent surfaces to be protected - Proper repair of sanding flaws - Cleanliness of surface - Proper application of primer
D. Do the painting using: <ul style="list-style-type: none"> • a roller and brush; • a spray gun. 	<ul style="list-style-type: none"> - Uniform application of coats of paint - Precise trim guarding
E. Check the work.	<ul style="list-style-type: none"> - Correct detection of errors and imperfections (e.g. flaking, blistering, cracking) - Accurate assessment of touch-ups to be done

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

F. Clean the tools, equipment and work area.

- Observance of manufacturers' cleaning and maintenance instructions
- Safe storage of products and equipment
- Cleanliness of work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare materials, tools and equipment (A):

1. Identify the different surfaces that can be jointed.
2. Explain the purpose of different joint compounds.
3. List the properties of reinforcing tapes.
4. Explain the purpose of installing metal corners.
5. List the properties of paints and primers.
6. Estimate the quantities of materials required to joint and finish a surface.

Before learning how to repair wallboards (B):

7. Detect protruding nail- or screw-heads and other imperfections.
8. List the steps involved in applying joint compound.
9. Describe the techniques for placing reinforcing tapes.
10. Explain the effects of temperature on joint compounds.
11. Handle jointing tools and equipment properly.
12. Describe the techniques for sanding joints.
13. Prepare joint compounds.

Before learning how to prepare the surface (C):

14. Describe the different types of imperfections that can detract from the appearance of the finish.
15. Place and remove masking tapes correctly.
16. Distinguish between the differences in the quality of the primers that can be used.
17. Describe the different techniques used to apply the primer with a brush and a roller (trim guarding and rolling).
18. Describe the different techniques used to apply the primer with a spray gun.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to do the painting using:

- a roller and brush;
- a spray gun (D):

19. Describe the different techniques used to apply coats of paint with a brush and a roller (trim guarding and rolling).
20. Handle the brush and roller correctly.
21. Describe the spraying equipment.
22. Describe the different techniques used to apply finishing coats with a spray gun.
23. Handle the spraying equipment correctly.
24. Describe the techniques for cleaning and maintaining spraying equipment.

Before learning how to check the work. (E):

25. Assess the quality of the work by sight and touch.

Before learning how to clean the tools, equipment and work area (F):

26. Interpret the manufacturers' technical sheets regarding equipment cleaning and maintenance.
27. Recognize the products to be used for cleaning tools and equipment.
28. Describe the methods of maintaining tools, equipment and work areas.

MODULE 5: INTERPRETING PLANS AND SPECIFICATIONS

CODE: 756743

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **interpret plans and specifications** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following instructions
- Using:
 - a series of questions
 - a set of plans
 - specifications
 - an architect's scale

GENERAL PERFORMANCE CRITERIA

- Accurate interpretation of plans and specifications
- Compliance with instructions

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Select the different documents likely to provide the information required for the work to be done.

- Correct selection of required documents

B. Locate information on a set of plans.

- Correct interpretation of:
 • legend
 • symbols
 • abbreviations
 • projections
 - Correct location of information

C. Interpret the information contained in specifications.

- Accurate interpretation of information

D. Make the link between the information on a plan and the information in the corresponding specifications.

- Correct application of methods of finding information
 - Accurate location of contradictory information

E. Draw sketches freehand.

- Accurate drawing
 - Clear lines

Field of Application

- Equal focus on the industrial, commercial, residential and institutional sectors

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to select the different documents likely to provide the information required for the work to be done (A):

1. Describe the different documents used.
2. Define the general purpose of a plan.
3. Distinguish among the different types of plans and their purpose.

Before learning how to locate information on a set of plans (B):

4. Describe the information on a plan.
5. Recognize the symbols, abbreviations and types of lines used.
6. Describe the different projections and views that can be represented.
7. Explain the purpose and the principle of proportion on a plan.
8. Recognize on a plan the information useful in residential and commercial painting.

Before learning how to interpret the information contained in specifications (C):

9. Define the general purpose of specifications.
10. Recognize the different sections of specifications.
11. List the general information found in each of the sections.
12. Explain the method of locating information in specifications.

Before learning how to make the link between the information on a plan and the information in the corresponding specifications (D):

13. Explain the possible consequences of using plans and specifications containing contradictory information.
14. Determine the leeway and responsibility of painters with regard to information contained in plans and specifications.

Before learning how to draw sketches freehand (E):

15. Recognize the projections and views that can be represented.
16. Draw accurately, observing the required proportions.

MODULE 6: ORGANIZATIONS IN THE CONSTRUCTION INDUSTRY

CODE: 755 001

Duration: 15 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to
become familiar with organizations in the construction industry.

SPECIFICATIONS

At the end of this module, the students will:

- Describe the main roles and responsibilities of employers' associations and union organizations.
- Describe the laws and regulations governing labour relations in the construction industry.

LEARNING CONTEXT

PHASE 1: Information

- Becoming familiar with the objective of the unit in the companion guide.

PHASE 2: Learning

- Receiving information on the topic covered in the unit.
- Expressing their opinions on the topic and asking questions.

PHASE 3: Reinforcement

- Reviewing the main concepts of the unit.
- Answering a series of questions individually.
- Correcting the answers in a group.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

INSTRUCTIONAL GUIDELINES

The teacher should:

- Ensure that a suitable room and appropriate materials are available.
- Present the material in a creative manner.
- Involve the students in discussions.
- Use tables and illustrations.

PARTICIPATION CRITERIA

- Take part in seven out of nine units.
- Pay attention in class.
- Stick to the topic during discussions.
- Ask pertinent questions and give appropriate answers.
- Do the exercises conscientiously.
- Correct the exercises.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking the activities of Phase 1:

1. Be receptive to information relating to organizations in the construction industry.
2. Be willing to share their knowledge with other members of the group.

Before undertaking the activities of Phase 2:

3. Explain the main rules governing group discussion.

Before undertaking the activities of Phase 3:

4. Describe how to answer a series of questions.

MODULE 7: HEALTH AND SAFETY ON CONSTRUCTION SITES

CODE: 755 002

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

EXPECTED OUTCOME

By participating in the required activities of the learning context according to the indicated criteria, the students will be able to **apply health and safety rules on construction sites.**

SPECIFICATIONS

At the end of this module, the students will:

- Be familiar with the laws and regulations governing health and safety on construction sites.
- Be familiar with the roles and responsibilities of those in charge of occupational health and safety.
- Be aware of the hazards and safety measures related to certain tasks.
- Be aware of the hazards and safety measures related to the construction site itself.
- Be aware of the hazards and safety measures related to the use of certain products.
- Know what to do in the event of an accident.

LEARNING CONTEXT

PHASE 1: Information

- Becoming familiar with the objective of the unit and the companion guide.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: Learning

- Gathering information on the topic covered in the unit.
- Forming and expressing an opinion on the topic.
- Asking questions.
- Identifying the main concepts and the underlying principles of safe behaviour.
- Assessing their own observance of these principles.

PHASE 3: Reinforcement

- Reviewing the main concepts of the unit.
- Answering a series of questions.
- Correcting the answers and discussing them if necessary.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Ensure that a suitable room and appropriate materials are available.
- Present the material in a creative manner.
- Involve the students in discussions.
- Make adequate use of teaching materials (e.g. tables, transparencies, films, videotapes, cards).

PARTICIPATION CRITERIA

- Participate in at least 18 out of the 20 units, Units 1 and 2 being compulsory.
- Pay attention in class.
- Stick to the topic during discussions.
- Ask pertinent questions and give appropriate answers.
- Do the exercises conscientiously.
- Correct the exercises.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before undertaking the activities of Phase 1:

1. Be receptive to information relating to health and safety.
2. Be willing to share their knowledge with other members of the group.

Before undertaking the activities of Phase 2:

3. Gather information.
4. Determine a way of presenting information.
5. Explain the main rules governing group discussion.

Before undertaking the activities of Phase 3:

6. Describe how to answer a series of questions.

MODULE 8: CALCULATING QUANTITIES OF MATERIALS

CODE: 756754

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **calculate quantities of materials used in the trade** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following instructions
- According to a set of plans and specifications
- Using:
 - a calculator
 - technical documentation provided by manufacturers

GENERAL PERFORMANCE CRITERIA

- Pertinent use of plans and specifications
- Correct use of measuring and calculation techniques
- Accurate measurements
- Compliance with instructions

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Take measurements in SI and imperial units.

- Proper use of measuring instruments
- Accurate readings

B. Calculate the area of square, rectangular, triangular and circular finished surfaces.

- Proper use of measuring instruments
- Correct selection of formulas
- Selection of correct measurements or correct dimensions on the plan
- Accurate calculations of surface areas to be finished

C. Estimate the quantities of materials required for the surface areas calculated.

- Correct interpretation of manufacturer's instructions
- Accurate estimate of required quantities
- Estimate of percentage of material loss

Field of Application:

- Equal focus on the industrial, commercial, residential and institutional sectors for the:
 - preparation and finishing of wallboard surfaces;
 - preparation and finishing of wood surfaces;
 - preparation and finishing of metal surfaces;
 - preparation and finishing of calcareous surfaces;
 - preparation and finishing of synthetic surfaces;
 - hanging of wallcoverings;
 - application of granular compounds.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to take measurements in SI and imperial units (A):

1. Describe the SI and imperial systems of measure.
2. Distinguish among the different measuring instruments.
3. Apply the different techniques for taking measurements.

Before learning how to calculate the area of square, rectangular, triangular and circular finished surfaces (B):

4. Differentiate among the geometric shapes.
5. Carry out the four basic mathematical operations.
6. Identify the formulas for calculating the surface area of different geometric shapes.
7. Recognize the plan dimensions to be used for the surface areas to be calculated.
8. Carry out the basic operations involved in using the formulas.

Before learning how to estimate the quantities of materials required for the surface areas calculated (C):

9. Describe the main methods of estimating quantities of materials.
10. Locate on plans and specifications the information required to estimate the quantities of materials.
11. Recognize why the technical information provided by manufacturers is important for estimating the quantities of materials required.
12. Apply the rule of three.

MODULE 9: STRIPPING, SANDING AND CLEANING

CODE: 756763

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **apply stripping, sanding and cleaning techniques** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following written and verbal instructions
- On a wood surface
- Using:
 - the required materials, tools and equipment
 - a work sheet

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Protection of work area and surroundings
- Observance of directions for use and manufacturers' instructions
- Economical use of materials
- Proper use and cleaning of tools and equipment
- Uniformity and quality of surface

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Strip a surface.

- Selection of correct procedure
- Uniform application of products
- Proper, safe handling of heating equipment
- Accurate detection of errors and imperfections

B. Clean a stripped surface.

- Proper cleaning of surface
- Complete neutralization of stripping product

C. Sand a wood surface.

- Selection of correct procedure
- Selection of proper abrasive
- Work done in the direction of the grain of the wood
- Proper, safe handling of tools and equipment
- Accurate detection of errors and imperfections

Field of Application:

- boards
- wood panels
- turned posts
- doors
- door frames
- wood-frame windows
- steps of stairs
- grooves
- mouldings
- veneered panels

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to strip a surface (A):

1. Differentiate among the different procedures for stripping a surface.
2. Describe the types of products used for stripping a surface.
3. Describe the stripping procedure and the products to be used for different types of work.
4. Interpret directions for use and the manufacturers' instructions.
5. Describe the health and safety rules involved in stripping a surface.
6. Describe the methods of using stripping tools and equipment.
7. List the criteria for determining the quality of a stripping job.

Before learning how to clean a stripped surface (B):

8. Describe the properties and characteristics of products used to neutralize a stripped surface.
9. List the tools and equipment used to clean a stripped surface.
10. Describe the procedures for cleaning a stripped surface.
11. List the materials, products, tools and equipment required for different types of cleaning.
12. List the criteria for determining the quality of a cleaning job.
13. Describe the health and safety rules involved in cleaning a stripped surface.

Before learning how to sand a wood surface (C):

14. Differentiate among the abrasives used for sanding.
15. Describe the properties and characteristics of abrasives.
16. Describe the tools and equipment used for sanding.
17. Describe the different sanding techniques.
18. Describe the health and safety rules involved in sanding a surface.
19. Correctly handle sanding tools and equipment.
20. List the criteria for determining the quality of a sanding job.

MODULE 10: PREPARING AND FINISHING CALCAREOUS SURFACES

CODE: 756774

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **prepare and finish a calcareous surface** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- On a surface consisting of concrete blocks or bricks
- Following written and verbal instructions
- Using:
 - the required materials, tools and equipment
 - a work sheet

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Protection of work area and surroundings
- Observance of directions for use and manufacturers' instructions
- Economical use of materials
- Proper use of tools and equipment

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Prepare the work area, materials, tools and equipment.	<ul style="list-style-type: none"> - Correct selection of materials, tools and equipment - Proper concealing of adjacent surfaces to be protected - Observance of manufacturer's recommendations regarding the preparation of materials
B. Prepare the surface.	<ul style="list-style-type: none"> - Observance of work method - Uniformity of repairs - Consideration of original textures - Proper pressurized water-jet cleaning techniques - Cleanliness of surface
C. Do the finishing work.	<ul style="list-style-type: none"> - Observance of techniques for applying finishing products with a brush and a roller - Safe use of blast cleaning equipment - Correct application of blast cleaning techniques for finishing concrete - Quality of the finish
D. Check the work.	<ul style="list-style-type: none"> - Accurate detection of errors and imperfections - Accurate assessment of touch-ups and repairs to be done
E. Clean the tools, equipment and work area.	<ul style="list-style-type: none"> - Observance of manufacturers' cleaning and maintenance instructions - Safe storage of products and equipment - Cleanliness of work area
<p>Field of Application:</p> <ul style="list-style-type: none"> • concrete • bricks • concrete blocks • plaster 	

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare the work area, materials, tools and equipment (A):

1. Use the materials and equipment designed to protect surroundings.
2. Describe the methods of protecting adjacent surfaces.
3. Describe the properties of materials commonly used to prepare and finish a calcareous surface.
4. Describe the methods of preparing materials used to repair and finish a calcareous surface.
5. Name the tools and equipment commonly used to prepare and finish a calcareous surface.
6. Describe the procedure for checking and maintaining equipment and tools.
7. List the precautions to take when preparing blast cleaning equipment and pressurized water-jet cleaning equipment.

Before learning how to prepare the surface (B):

8. Recognize the types of calcareous surfaces according to their characteristics and properties.
9. Explain the causes of deterioration in a calcareous surface.
10. Describe the processes used to repair and clean a calcareous surface.
11. Describe the methods of using tools and equipment employed to repair and clean a calcareous surface.
12. Recognize the importance of the surface being even and clean before applying finishing products.
13. Recognize the elements that dirty a calcareous surface.
14. Name the products frequently used to clean the surface.
15. Select cleaning products according to the type of dirt to be removed.
16. Describe pressurized water-jet cleaning techniques for a surface.
17. Use pressurized water-jet cleaning equipment.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to do the finishing work (C):

18. Describe the techniques for applying acids, primers and paints with a brush and a roller.
19. Recognize the importance of applying uniform coats of primer and paint.
20. Describe the different results that can be obtained by blast finishing concrete surfaces.
21. Describe the techniques for blast finishing a concrete surface.
22. Recognize the different finishes of a concrete surface.

Before learning how to check the work (D):

23. Describe the methods for checking the work done.
24. List the criteria for determining the quality of the finish of a calcareous surface.
25. Assess the quality of a finish by sight and touch.

Before learning how to clean the tools, equipment and work area (E):

26. Interpret manufacturers' technical sheets regarding equipment cleaning and maintenance.
27. Describe the methods of maintaining tools, equipment and work areas.
28. Describe the methods of storing and disposing of hazardous products.

MODULE 11: PREPARING AND FINISHING SYNTHETIC SURFACES

CODE: 756781

Duration: 15 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **prepare and finish a synthetic surface** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- According to:
 - instructions
 - a series of questions
- Using:
 - a brush and a roller
 - a work sheet
- On a laminated surface

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Observance of directions for use and manufacturer's instructions
- Economical use of materials

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Prepare the materials and tools.

- Correct selection of materials for cleaning, repairing and sanding
- Correct selection of tools
- Correct selection of primer required for the desired finish
- Proper preparation of materials

B. Prepare the surface.

- Proper application of techniques for cleaning, repairing and sanding
- Even surface

C. Do the finishing work.

- Uniform application of finishing coats
- Even, finished surface

D. Check the work.

- Accurate detection of errors and imperfections
- Accurate assessment of touch-ups and repairs to be done

E. Clean the tools and the work area.

- Observance of manufacturers' cleaning and maintenance instructions
- Safe storage of products
- Cleanliness of work area

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

Field of Application:

- Synthetic surfaces:
 - acoustic tile (metal, cork, asbestos, cardboard)
 - glass
 - wallpaper, vinyl and metallic-finish coverings
 - ceramic
 - fibreglass
 - plastic
 - melamine
 - exterior vinyl coverings
 - laminate
- Common finishes:
 - paint
 - melamine

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare the materials and tools (A):

1. List the main types of synthetic surfaces.
2. List the properties of the main types of synthetic surfaces.
3. Recognize the characteristics of materials that can be used to prepare and finish a surface.

Before learning how to prepare the surface (B):

4. Recognize the methods of preparing synthetic surfaces.
5. Describe the methods of preparing compounds and mixes required for cleaning and repairing a synthetic surface.
6. Recognize the importance of properly preparing a surface.
7. Assess the feasibility of the finishing work requested.

Before learning how to do the finishing work (C):

8. List the tools required to finish a synthetic surface.
9. Describe the techniques for applying finishing products.

Before learning how to check the work (D):

10. Describe the methods of checking the work.
11. List the criteria for determining the quality of a finish.
12. Assess the quality of a finish by sight and touch.

Before learning how to clean the tools and the work area (E):

13. Interpret manufacturers' technical sheets regarding tool cleaning and maintenance.
14. Describe the methods of storing and disposing of hazardous products.

MODULE 12: DECORATING TECHNIQUES

CODE: 756826

Duration: 90 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **apply decorating techniques** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- According to specifications and written and verbal instructions
- Using:
 - plans and samples
 - the required materials, tools and equipment
 - a stepladder
 - suitable drawing instruments

GENERAL PERFORMANCE CRITERIA

- Exact reproduction of a design on a large surface
- Appropriate imitation of a marble surface
- Meticulous, precise work
- Compliance with specifications and instructions

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Organize the work to be done.

- Consultation of pertinent information sources
- Correct choice of tools and equipment
- Selection of appropriate materials
- Proper preparation of materials

B. Reproduce a design on a surface.

- Proper use of tools and equipment
- Precision and quality of drawing
- Observance of proportions
- Precision of trim guarding (repainting)
- Quality of the finish of the design

C. Produce an imitation of a marble surface.

- Quality of the surface preparation
- Correct selection of colours
- Proper use of tools and equipment
- Correct application of technique

Field of Application:

- residential
- commercial
- institutional
- industrial

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to organize the work to be done (A):

1. Explain basic decorating principles.
2. Consult reference documents (e.g. books, catalogues, magazines) used in decorating.
3. List the main qualities of an aesthetic layout.
4. Describe the effects of colour (e.g. contrast, shape, luminosity, atmosphere).
5. Obtain information on new products, equipment and tools.
6. Describe the techniques for drawing a design on paper.
7. Correctly handle the tools used to draw a design on paper.

Before learning how to reproduce a design on a surface (B):

8. Describe the techniques for preparing and applying glaze.
9. Describe the techniques for drawing designs on large surfaces.
10. List the tools and equipment used to reproduce a design.
11. Correctly handle the tools used to reproduce a design.

Before learning how to produce an imitation of a marble surface (C):

12. Describe the techniques for preparing surfaces.
13. Recognize the colours that make up a marble surface.
14. List the tools and equipment used to produce an imitation of a marble surface.
15. Describe the techniques used to produce an imitation of a marble surface.
16. Correctly handle the tools used to produce an imitation of a marble surface.

MODULE 13: PREPARING AND FINISHING WOOD SURFACES

CODE: 756797

Duration: 105 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **prepare and finish a wood surface** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following verbal and written instructions
- On a vertical surface consisting of two types of wood: pine and mahogany
- Using preparation and finishing products
- Using a work sheet

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Protection of work area and surroundings
- Observance of directions for use and manufacturers' instructions
- Economical use of materials
- Observance of the sequence of operations

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

- | | |
|---|--|
| <p>A. Prepare the work area, materials, tools and equipment.</p> | <ul style="list-style-type: none"> - Correct selection of materials, tools and equipment - Proper preparation of products - Proper protection of adjacent surfaces - Appropriate estimate of quantities of materials required |
| <p>B. Prepare:</p> <ul style="list-style-type: none"> • a hardwood surface; • a softwood surface; <p>and replace a window pane.</p> | <ul style="list-style-type: none"> - Application of appropriate preparation method - Uniform sanding or stripping of surface - Proper sealing of knots and surface - Proper application of seals |
| <p>C. Do the finishing work:</p> <ul style="list-style-type: none"> • staining • painting and priming • varnishing • applying protective agents • decolorizing | <ul style="list-style-type: none"> - Correct techniques for applying finishing products with a brush, roller and rag - Harmonious colours - Precision of trim guarding - Correct imitation of a type of wood - Matching of grain of wood in the various pieces - Quality of the finish |
| <p>D. Check the work.</p> | <ul style="list-style-type: none"> - Accurate detection of errors and imperfections - Accurate assessment of touch-ups and repairs to be done |

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

E. Clean the tools, equipment and work area.

**SPECIFIC PERFORMANCE
CRITERIA**

- Observance of manufacturers' cleaning and maintenance instructions
- Safe storage of products and equipment

Field of Application:

- wood panels
- steps of stairs
- boards
- turned posts
- doors
- various mouldings
- door frames
- veneered panels
- wood-frame windows

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare the work area, materials, tools and equipment (A):

1. Recognize the different types of wood and their characteristics.
2. List the factors at play in the deterioration of a wood surface and its covering.
3. Distinguish among the different types of imperfections that can be repaired and corrected.
4. Describe the different techniques used to prepare a wood surface.
5. Describe the different types of primers or protective coatings and their function.
6. Describe the different types of finishing products that can be applied to a wood surface.
7. Describe the risks involved when using different products and the safety measures to be taken.
8. Distinguish among the products used to repair and prepare the surface.

Before learning how to prepare:

- a hardwood surface;
 - a softwood surface;
- and replace a window pane (B):**

9. Select the materials, tools and equipment used to repair surfaces.
10. Describe the preparation techniques for different surfaces.
11. Describe the techniques for preparing surfaces in order to produce imitations of types of wood.
12. Name the different materials and tools required to replace a window pane.
13. Describe the steps involved in replacing a window pane.
14. Recognize glass-cutting tools.
15. Describe the methods of preparing and applying sealing products.
16. Describe the method of replacing a window pane.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to do the finishing work:

- staining
- painting and priming
- varnishing
- applying protective agents
- decolorizing (C):

17. Recognize the tools and equipment used to apply primers, protective coatings and finishing products.
18. Describe the techniques used to produce an imitation of different types of wood (oak, walnut and mahogany).
19. Recognize the tools used to produce an imitation of different types of wood.
20. Describe the techniques for preparing and applying products used to produce an imitation of different types of wood.

Before learning how to check the work (D):

21. Describe the methods of detecting errors and imperfections.
22. Assess the quality of a finish by sight and touch.

Before learning how to clean the tools, equipment and work area (E):

23. Interpret manufacturers' technical sheets regarding equipment cleaning and maintenance.
24. Recognize the products to be used for cleaning tools and equipment.
25. Describe the methods of storing and disposing of hazardous products.

MODULE 14: PREPARING AND FINISHING METAL SURFACES

CODE: 756806

Duration: 90 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **prepare and finish a metal surface** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following verbal and written instructions
- Using:
 - blast cleaning equipment
 - gun spraying equipment
 - the required preparation and finishing materials
 - a work sheet

GENERAL PERFORMANCE CRITERIA

- Protection of people and surroundings
- Observance of directions for use and manufacturers' instructions
- Economical use of materials
- Proper, safe use of tools and equipment
- Proper use of personal safety equipment
- Observance of sequence of operations

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
<p>A. Prepare the work area, materials, tools and equipment.</p>	<ul style="list-style-type: none"> - Proper protection of work area - Correct selection of materials, tools and equipment - Proper concealing of adjacent surfaces to be protected - Observance of procedure for checking the start-up and shutdown of blast cleaning equipment - Proper verification of gun spraying equipment - Appropriate estimate of quantities of materials required
<p>B. Prepare the surface.</p>	<ul style="list-style-type: none"> - Correct detection of imperfections (e.g. flaking, blistering, rusting) - Proper scraping, grinding, stripping, brushing and sanding of surfaces - Proper application of techniques used to remove rust from surfaces - Proper repair of imperfections - Proper, safe application of techniques for preparing the surface for blast cleaning - Even surface
<p>C. Do the finishing work.</p>	<ul style="list-style-type: none"> - Uniform application of finishing coats with a brush and a roller - Precision of trim guarding - Regular, even spraying - Control of thickness of finishing coat - Observance of manufacturers' instructions for finishing products - Quality of the surface finish

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

D. Check the work.

E. Clean the tools, equipment and work area.

Field of Application:

- Ferrous metals:
 - steel
 - galvanized steel

**SPECIFIC PERFORMANCE
CRITERIA**

- Accurate detection of errors and imperfections
- Accurate assessment of touch-ups and repairs to be done

- Observance of manufacturers' cleaning and maintenance instructions
- Safe storage of products and equipment

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare the work area, materials, tools and equipment (A):

1. Recognize the types of metal surfaces according to their characteristics and properties.
2. Identify the factors at play in the deterioration of a metal surface.
3. List the materials and tools that can be used to clean and repair a metal surface.
4. Identify the properties of products used to treat and finish a surface.
5. Describe the procedure for checking, maintaining, starting up and shutting down blast cleaning equipment.
6. Describe the precautions to take when preparing personal safety equipment and the air purifier.
7. Describe the procedure for checking, maintaining, starting up and shutting down gun spraying equipment.
8. List the precautions to take when preparing gun spraying equipment.
9. List the precautions to take when preparing blast cleaning equipment.

Before learning how to prepare the surface (B):

10. Describe the various imperfections that can affect the final quality of the work.
11. Describe the methods for checking a metal surface.
12. Describe the techniques for scraping, grinding, stripping, brushing and sanding a metal surface.
13. Describe the techniques used to remove rust from a metal surface.
14. Describe the techniques used to repair imperfections.
15. Recognize the importance of the surface being even and clean before applying finishing products.
16. Describe the methods of preparing a metal surface for blast cleaning.
17. Describe the techniques for blast cleaning.
18. Recognize the different finishes used to prepare a metal surface.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to do the finishing work (C):

19. Indicate the nozzle adjustments for spraying tasks.
20. Describe how to use a spray gun to apply film-coating materials.
21. Measure the rate of humidity and the thickness of the layer of the film-coating material applied.

Before learning how to check the work (D):

22. Describe the methods of checking the work.
23. List the criteria for determining the quality of a finish.
24. Assess the quality of the finish by sight and touch.

Before learning how to clean the tools, equipment and work area (E):

25. Interpret manufacturers' technical sheets regarding equipment cleaning and maintenance.
26. Recognize the products to be used for cleaning tools and equipment.
27. Describe the methods of storing and disposing of hazardous products.

MODULE 15: HANGING WALLCOVERINGS

CODE: 756818

Duration: 120 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **hang wallcoverings** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- According to specifications and written and verbal instructions
- On a gypsum surface with imperfections
- Using:
 - samples of materials
 - manufacturers' catalogues
 - the required materials and tools
 - a work sheet
 - a stepladder and a paste table

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Observance of directions for use and manufacturers' instructions
- Economical use of materials
- Precision of cuts and alignment of patterns
- Perpendicularity of strips
- Perfect adhesion of wallcovering to surface
- Cleanliness of work
- Cleanliness of work area
- Compliance with specifications and instructions
- Observance of sequence of operations

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Prepare the work area, materials, tools and equipment.	<ul style="list-style-type: none"> - Correct selection of materials, tools and equipment - Appropriate estimate of quantities of materials required
B. Prepare the surface.	<ul style="list-style-type: none"> - Complete removal of old coverings - Quality of the repair of the surface - Uniform application of finishing coat - Surface prepared to be sufficiently adhesive
C. Recover the surface.	<ul style="list-style-type: none"> - Identification of correct starting point - Uniform application of adhesive - Precision of joint alignment - Absence of air bubbles and folds
D. Check the work.	<ul style="list-style-type: none"> - Accurate detection of errors and imperfections - Accurate assessment of touch-ups and repairs to be done
E. Clean the tools, equipment and work area.	<ul style="list-style-type: none"> - Observance of manufacturers' cleaning and maintenance instructions - Safe storage of products and equipment

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare the work area, materials, tools and equipment (A):

1. Describe how to prepare the work area in order to hang wallcoverings.
2. List the types of wallpaper and other wallcoverings.
3. Describe the characteristics of wallcoverings.
4. List the various types of adhesives used to hang wallcoverings.
5. Describe the properties of the adhesives used.
6. List the criteria for selecting adhesives.
7. List the properties of products used to remove wallcoverings.
8. Calculate how much wallcovering is required.

Before learning how to prepare the surface (B):

9. Describe the techniques for removing wallcoverings.
10. List the safety rules involved in using steam units.
11. Describe the techniques for hanging linings.

Before learning how to recover the surface (C):

12. List the criteria for determining the starting point.
13. Describe the techniques for applying adhesives.
14. Describe the measures to be taken in order to use wallcoverings efficiently.
15. Describe the techniques for hanging, aligning and cutting strips.

Before learning how to check the work (D):

16. Describe the methods for checking the work.
17. List the criteria for determining the quality of the work.
18. Assess the quality of the work by sight and touch.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to clean the tools, equipment and work area (E):

19. Interpret manufacturers' technical sheets regarding equipment cleaning and maintenance.
20. Recognize the products to be used for cleaning tools and equipment.
21. Describe the methods of maintaining tools, equipment and work areas.
22. Describe the methods of storing and disposing of hazardous products.

MODULE 16: APPLYING GRANULAR COMPOUNDS

CODE: 756833

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **apply granular compounds** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Working alone
- Following written and verbal instructions
- On a gypsum surface
- Using the required materials, tools and equipment

GENERAL PERFORMANCE CRITERIA

- Observance of health and safety rules
- Observance of directions for use and manufacturers' instructions
- Quality of the application of the compound
- Uniformity of patterns and textures
- Cleanliness of work area
- Compliance with specifications and instructions

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Prepare the work area, materials, tools and equipment.	<ul style="list-style-type: none"> - Correct selection of tools and equipment in accordance with patterns and textures requested - Correct selection of materials - Observance of manufacturer's instructions for preparing materials - Proper preparation of spraying equipment - Proper preparation of work area
B. Prepare the: <ul style="list-style-type: none"> • gypsum surface; • concrete surface. 	<ul style="list-style-type: none"> - Proper application of preparation techniques - Even surface - Proper concealing of adjacent surfaces to be protected
C. Do the finishing work.	<ul style="list-style-type: none"> - Observance of technique for applying compounds with a brush and a roller - Quality of the application in angles and corners - Proper application of cone gun-spraying techniques - Proper application of texture gun-spraying techniques - Quality of the finish
D. Do touch-ups.	<ul style="list-style-type: none"> - Accurate detection of errors and imperfections - Correct touch-up techniques
E. Clean the tools, equipment and work area.	<ul style="list-style-type: none"> - Observance of manufacturers' cleaning and maintenance instructions - Safe storage of products and equipment

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to prepare the work area, materials, tools and equipment (A):

1. Describe the properties of different granular compounds that can be used and how to prepare them.
2. List the elements to consider when selecting granular compounds.
3. Describe the different finishes that can be applied to a surface covered with granular compounds.
4. Describe the methods of preparing cone and texture gun-spraying equipment.

Before learning how to prepare the:

- gypsum surface;
- concrete surface (B):

5. Detect the imperfections of a surface.
6. Describe the techniques for preparing gypsum and calcareous surfaces.
7. Properly use the tools and equipment commonly employed to repair and prepare a surface.
8. Describe the techniques for concealing adjacent surfaces.

Before learning how to do the finishing work (C):

9. Describe the techniques for applying granular compounds with a brush and a roller.
10. Describe the techniques for applying granular compounds with a cone spray gun.
11. Measure the temperature and rate of humidity.
12. Describe the techniques for applying granular compounds with a texture spray gun.

Before learning how to do touch-ups (D):

13. Describe the methods of checking the work.
14. List the criteria for determining the quality of a finish.
15. Assess the quality of a finish by sight and touch.
16. Describe the techniques for doing touch-ups.

SECOND-LEVEL OPERATIONAL OBJECTIVES

IN ORDER TO ACHIEVE THE FIRST-LEVEL OBJECTIVE, THE STUDENTS SHOULD HAVE PREVIOUSLY ATTAINED SECOND-LEVEL OBJECTIVES, SUCH AS:

Before learning how to clean the tools, equipment and work area (E):

17. Interpret manufacturers' technical sheets regarding equipment cleaning and maintenance.
18. Recognize the products to be used for cleaning tools and equipment.
19. Describe the methods of storing and disposing of hazardous products.

