7

BUILDINGS AND PUBLIC WORKS

CARPENTRY

PROGRAM OF STUDY
KZU-501
1928

VOCATIONAL and TECHNICAL EDUCATION

Québec

CONSTRUCTION

CARPENTRY

PROGRAM OF STUDY
KZU-501
1928

The *Carpentry* program leads to the
Secondary School Vocational Diploma (SSVD)
and prepares the student to practise the trade of

CARPENTER

Direction générale des programmes
Direction de la formation professionnelle

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Representatives from Business and Industry

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Commission de la construction du Québec (CCQ)

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Henri Renaud Construction inc.

Réal Roy
Patella inc.

Representatives from Education

André Bouchard
Commission scolaire Chauveau

Laurent De Ladurantaye
Commission scolaire Pascal-Taché

Development Team

Design and Development	Léonce Gagnon Jackie Rivrais Education Development Officers
Technical Support	Denise Tremblay Technical Consultant
Coordination	Jean-Paul Bergeron Construction Sector Coordinator

English Version

	Coordination du développement pédagogique en langue anglaise (CDPLA)
Translation	Elizabeth Dundas

Although much research went into the choice of technical terminology in the English version, some terms may not reflect current usage or may be inaccurate. The Education Development in the English Language team would appreciate receiving feedback from users of this document. The translators may be contacted at the:

Ministère de l'Éducation
CDPLA
600, rue Fullum, 8e étage
Montréal (Québec)
H2K 4L1

(514) 873-8063

This program of study, *Carpentry*, is issued in accordance with Section 461 of the *Education Act*.

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 *An Act Respecting the Conseil supérieur de l'éducation,* as replaced by Section 569 of the *Education Act* (1988, chapter 84). This program of study has been authorized for teaching *Carpentry* in the schools as of September 1, 1990.

Michel Pagé
Minister of Education

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INTRODUCTION

The *Carpentry* 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 **Secondary School Vocational Diploma (SSVD)**, for students in 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 1 350 hours, which includes 945 hours spent on the specific competencies required to practise the trade or occupation and 405 hours spent on general competencies. The program of study is divided into 22 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. The modules are organized into 3 blocks of 450 hours each.

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, and an explanation of operational 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 perform correctly 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: 22
Duration in hours: 1 350
Credits: 90

Carpentry
SIMCA: KZU-501
SESAME: 1928

SIMCA	SESAME	TITLE OF THE MODULE	DURATION	CREDITS*
KCD 282	755-011	1. The Trade and the Training Process	15	1
KDN 286	755-001	2. Organizations in the Construction Industry	15	1
KDP 289	755-255	3. Joints and Tools	75	5
KDQ 281	755-034	4. Plans and Specifications	60	4
KCE 282	755-103	5. Mathematics Applied to Construction	45	3
KDQ 282	755-054	6. Building Layout	60	4
KDQ 283	755-075	7. Footing Forms and Concrete Wall Forms	75	5
KDQ 284	755-087	8. Column, Beam, Slab and Stair Forms	105	7
KCD 287	755-062	9. Scaffolds and Other Temporary Structures	30	2
ECE 283	755-002	10. Health and Safety on Construction Sites	30	2
KCE 281	755-094	11. Sketches and Drawings	60	4
KDQ 285	755-263	12. Joints and Equipment	45	3
KDQ 286	755-138	13. Floor and Wall Framing	120	8
KDQ 287	755-146	14. Roofs	90	6
KDQ 288	755-155	15. Insulation, Soundproofing and Ventilation	75	5
KCE 288	755-165	16. Exterior Finish	75	5
KDQ 289	755-177	17. Interior Finish	105	7
KCF 282	755-194	18. Cabinets and Accessories	60	4
KDR 281	755-207	19. Stairs	105	7
KDR 282	755-272	20. Estimating and Planning	30	2
KDR 283	755-234	21. Demolition, Renovation and Maintenance	60	4
KDR 284	755-241	22. Job Search Techniques	15	1

* 15 hours = 1 credit

--- Modules are divided into blocks of 450 hours.
This program leads to a Secondary School Vocational Diploma in Carpentry.

2. PROGRAM TRAINING GOALS

The training goals of the *Carpentry* 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 tasks and activities related to carpentry 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 needed to make sound decisions concerning building materials and techniques
  - the development of a professional attitude
  - a constant concern for health and safety in the workplace
  - a sense of precision in carrying out various construction tasks

To ensure integration into the working world.

- To familiarize students with the job market in general and the trade of carpentry in particular.
- To familiarize students with their rights and responsibilities as workers.
- To develop respect for the rights of clients.

To foster the development of occupational knowledge.

- To foster independence, encourage students to strive for excellence, and instill a sense of responsibility and a desire to succeed.
- To help students understand the principles underlying various techniques.
- To help students acquire sound work methods and a sense of discipline.

To ensure job mobility.

- To develop a positive attitude toward technological change and new situations.
- To prepare students for a creative job search.
- To encourage further learning and research.

3. COMPETENCIES

The competencies to be developed in the *Carpentry* 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. Specific competencies focus on tasks and activities that are of direct use in the trade. The work process includes the most important steps in carrying out the tasks and activities of the trade.

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

The symbols (▲) and (●) indicate that these relationships have been taken into account in the formulation of objectives intended to develop specific competencies related to the trade.

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 vertical axis. This means that some modules are prerequisite to others, while other modules are taught concurrently.

GRID OF LEARNING FOCUSES

CARPENTRY		FIRST-LEVEL OPERATIONAL OBJECTIVES	DURATION (IN HOURS)	WORK PROCESS (major steps)						GENERAL COMPETENCIES (related to technology, personal development, etc.)											TOTALS	
SPECIFIC COMPETENCIES (directly related to the practice of the specific occupation)				Read plans and specifications	Plan and organize work	Do the layout of and cut materials	Make joints	Inspect the work	Clean the site	Become familiar with organizations in the construction industry	Make joints, and use and maintain hand tools and portable power tools	Read plans and specifications	Solve mathematical problems applied to construction	Erect scaffolds and other temporary structures	Apply health and safety rules on construction sites	Make sketches and drawings applied to construction	Make joints, and use and maintain equipment	Make an estimate for and plan a job	Use job search techniques	Apply safety rules specific to the trade	NUMBER OF OBJECTIVES	DURATION (IN HOURS)
Module	Module									2	3	4	5	9	10	11	12	20	22			
	FIRST-LEVEL OPERATIONAL OBJECTIVES	T								S	C	C	C	C	S	C	C	C	S	S	10	
	DURATION (IN HOURS)		h							15	75	60	45	30	30	60	45	30	15	*		405
1	Determine their suitability for the trade and the training process	S	15							○	○	○	○	○	○	○	○	○	○	○		
6	Do the layout of a structure	C	60	▲	△	△	△	▲	△	○	○	●	○	○	○	○	○	○		○		
7	Build forms for footings, foundation walls and concrete walls	C	75	▲	▲	▲	▲	▲	△	○	●	●	○	○	○	○	○	○		○		
8	Build forms for columns, beams, slabs and stairs	C	105	▲	▲	▲	▲	▲	△	○	●	●	○	○	○	○	○	○		○		
13	Build floor and wall framing	C	120	▲	▲	▲	▲	▲	△	○	●	●	●	●	○	●	●	○		○		
14	Build roofs	C	90	▲	▲	▲	△	▲	△	○	●	●	●	●	○	●	●	○		○		
15	Do the insulation, soundproofing and ventilation of a building	C	75	▲	▲	▲	△	▲	△	○	○	○	○	○	○			○		○		
16	Apply exterior finish	C	75	▲	▲	▲	▲	▲	▲	○	●	●	●	●	○	○	●	○		○		
17	Apply interior finish	C	105	▲	▲	▲	▲	▲	▲	○	●	●	●	○	○	●	●	○		○		
18	Build and install cabinets and accessories	C	60	▲	▲	▲	▲	▲	▲	○	●	●	●		○	●	●	○		○		
19	Build wood staircases	C	105	▲	▲	▲	▲	▲	▲	○	●	●	●	○	○	●	●	○		○		
21	Plan demolition, renovation and maintenance work for buildings	C	60	▲	▲	△	▲	▲	▲	○	●	●	●	○	○	●	●	○		○		
NUMBER OF OBJECTIVES		12																			22	
DURATION (IN HOURS)			945																			1 350

S: Situational objective
B: Behavioural objective
*: No particular objective

△ Correlation between a step and a specific competency
▲ Correlation to be taught and evaluated
○ Correlation between a general and a specific competency
● Correlation to be taught and evaluated

4. GENERAL OBJECTIVES

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

To develop in the students the basic competencies required to practise the trade of carpentry.

- To make joints, and use and maintain hand tools and portable power tools.
- To read plans and specifications.
- To make sketches and drawings applied to construction.
- To solve mathematical problems applied to construction.
- To erect scaffolds and other temporary structures.
- To make joints, and use and maintain equipment.
- To make an estimate for and plan a job.

To develop in the students the basic competencies required to do work with concrete.

- To do the layout of a structure.
- To build forms for footings, foundation walls and concrete walls.
- To build forms for columns, beams, slabs and stairs.

To develop in the students the competencies required to do framing work.

- To build floor and wall framing.
- To build roofs.

To develop in the students the competencies required to do finishing work.

- To apply exterior finish.
- To do the insulation, soundproofing and ventilation of a building.
- To apply interior finish.
- To build and install cabinets and accessories.
- To build wood staircases.

To develop in the students the competencies required to make repairs.

- To plan demolition, renovation and maintenance work for buildings.

To develop in the students the competencies required for a smooth transition into the school environment and the workplace.

- To determine their suitability for the trade and the training process.
- To become familiar with organizations in the construction industry.
- To apply health and safety rules on construction sites.
- To use job search techniques.

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. 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 students' 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.

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

- 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

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

SIMCA: KCD 282
SESAME: 755-011

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 aware of 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 carpentry: potential work environments (types of establishments, products), job prospects, pay, advancement and transfer opportunities and the employee selection process, by means of visits, interviews, documents, and so on.

- Learning about the nature and requirements of the job: tasks, working conditions, evaluation criteria, and workers' rights and responsibilities, by means of visits, interviews, documents, and so on.

- Presenting the information gathered at a group meeting and discussing their views on the advantages, disadvantages and requirements of the trade.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: **Information on the Training Plan and Participation in the Training Process**

- Discussing the skills, aptitudes and knowledge required to practise the trade.
- Learning about the training plan: program of study, training process, evaluation methods, certification of studies.
- Discussing the training program and how it relates to the work of a carpenter.

PHASE 3: **Evaluation and Confirmation of Career Choice**

- Discussing the different aspects of the carpentry trade.
- Producing a report in which they must:
  - describe their preferences, aptitudes, and interests with respect to the trade.
  - assess their career choice by comparing the different aspects and requirements of the trade with their own preferences, aptitudes and interests.
  - describe the various aspects of the carpentry trade.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Create a climate that is conducive to personal growth and that helps the students to enter the job market.
- Encourage the students to engage in discussions and to express themselves.
- Motivate the students to take part in the suggested activities.
- Help the students to acquire an accurate perception of the trade.
- Provide the students with the means to assess their career choice honestly and objectively.
- Organize meetings with carpenters.
- Make available all pertinent literature, such as information on the trade, training programs and guides.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

PARTICIPATION CRITERIA

PHASE 1:

- Gather information on most of the topics to be dealt with.
- Express their views on the trade at a group meeting, interrelating the information they have gathered.

PHASE 2:

- Give their opinions on some of the requirements that they will have to meet in order to practise the trade.
- Study carefully the written material provided.
- Appropriately express their views on the training program at a group meeting.
- Express their reactions clearly.

PHASE 3:

- Write a report that:
  - sums up their preferences, interests and aptitudes.
  - explains clearly how they arrived at their career choice.

SECOND-LEVEL OPERATIONAL OBJECTIVE

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

Before undertaking the activities in each of the phases:

1. Be receptive to information about the trade and the training plan.
2. Be willing to share their views on the trade with other members of the group.

Before undertaking the activities of Phase I:

3. Find the appropriate information.
4. Determine how to record and present data.
5. Make the distinction between task and work station.
6. Explain what is meant by "entry-level qualifications."
7. Explain the main rules governing group discussion.

Before undertaking the activities of Phase 2:

8. Differentiate the skills from the aptitudes and knowledge required to practise the trade.
9. Describe the nature, purpose and content of the program of study.

Before undertaking the activities of Phase 3:

10. Differentiate preferences from aptitudes and interests.
11. Describe the main components of a report that confirms their career choice.

MODULE 2: ORGANIZATIONS IN THE CONSTRUCTION INDUSTRY

SIMCA: KDN 286
SESAME: 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 organizations and employers' associations and unions.
- Describe the laws and regulations governing industrial relations in the construction industry.

LEARNING CONTEXT

PHASE 1: **Information**

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

PHASE 2: **Learning**

- Receiving information on the subject discussed.
- Expressing their opinions on the subject and asking questions.

PHASE 3: **Reinforcement**

- Reviewing the important aspects of the unit.
- Answering a questionnaire individually.
- Correcting the questionnaire as a group.

FIRST-LEVEL OPERATIONAL OBJECTIVES
SITUATIONAL OBJECTIVE

INSTRUCTIONAL GUIDELINES

The teacher should:

- Ensure that a suitable room and appropriate material are available.
- Present the subject in a dynamic manner.
- Encourage group discussion.
- Use the blackboards and diagrams.

PARTICIPATION CRITERIA

- Take part in 7 out of 9 units.
- Pay attention in class.
- Discuss the subjects dealt with.
- Ask pertinent questions and give relevant 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 about organizations in the construction industry.
2. 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 a questionnaire is filled out.

MODULE 3: JOINTS AND TOOLS

SIMCA: KDP 289
SESAME: 755-255

Duration: 75 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **make joints, and use and maintain hand tools and portable power tools** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- While performing carpentry tasks
- Using instruments, hand tools and portable power tools, and materials normally used on construction sites

GENERAL PERFORMANCE CRITERIA

- Mastery of joints
- Mastery of techniques for using tools
- Systematic preventative maintenance of tools, and knowledge of the main causes of wear, breakdown and irregularities
- Observance of safety rules

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Use measuring and layout instruments.	- Correct choice of instrument - Accuracy of reading - Measurements repeated in the same positions on the material to be cut - Correct choice of square - Efficient method of use
B. Use leveling instruments.	- Correct installation - Correct focusing - Exact reading of surveyor's rod - Accuracy of measurements
C. Use hand sawing, drilling and shaping tools.	- Accuracy of cutting and squaring - Assessment of the condition of the teeth and cutting edge - Safe and efficient use
D. Use portable power sawing and drilling tools.	- Correct choice of cutting tool - Correct adjustment - Accurate cutting and squaring - Safe use of tools
E. Use various nailing techniques.	- Efficient handling of hammer - Correct choice of nails - Correct use of nail set and accessories - Correct positioning of parts to be nailed

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
F. Do various types of joints.	- Correct choice of joining method - Correct adjustment - Correct choice of glue - Efficient method of gluing - Observance of safety rules
G. Maintain tools.	- Correct choice of lubricant - Proper sharpening of cutting and shaping tools

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 measuring and layout instruments (A):

1. Identify the main types of measurements used on construction sites.
2. Be familiar with the squaring instruments used in construction.
3. Choose various measuring and layout instruments according to their features.

Before learning how to use leveling instruments (B):

4. Be familiar with leveling tools.
5. Be familiar with the methods for making a surface plumb.
6. Be familiar with the types of lines used for laying out straight lines.

Before learning how to use hand sawing, drilling and shaping tools (C):

7. Be familiar with hand tools for sawing.
8. Be familiar with hand tools for shaping.
9. Be familiar with hand tools for drilling.
10. Recognize the grain of the wood.

Before learning how to use portable power sawing and drilling tools (D):

11. Be familiar with portable power sawing and drilling tools.
12. Recognize by sight, sound and smell malfunctions in portable tools.

Before learning how to use various nailing techniques (E):

13. Adopt safe work methods.
14. Identify nailing tools.

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 various types of joints (F):

15. Identify various joining methods commonly used in the trade.
16. Align the joined members in various ways.
17. Choose appropriate glues for jobs.
18. Adjust templates.

Before learning how to maintain tools (G):

19. Indicate maintenance points on tools used.
20. Sharpen various sawing and shaping tools.
21. Adopt safe work methods.

MODULE 4: PLANS AND SPECIFICATIONS

SIMCA: KDQ 281
SESAME: 755-034

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

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

CONDITIONS FOR PERFORMANCE EVALUATION

- Using plans and specifications for a one-and-a-half storey house
- Using building codes and standards

GENERAL PERFORMANCE CRITERIA

- Thorough understanding of data
- Observance of standards and instructions
- Exact transposition of data
- Adequate verification of data
- Verification of consistency between plans and specifications

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Read the conventions and symbols commonly used in construction.	- Clear understanding - Correct identification of symbols
B. Read the dimensions of a technical drawing and a blueprint.	- Accuracy of measurements - Exact transposition - Correct identification of dimensions

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
C. Read blueprints.	- Correct association of views - Accuracy of data and information
D. Read building specifications.	- Accuracy of data - Consistency between plans and specifications
E. Read the catalogues and reference manuals used in construction.	- Accuracy of information - Exact data - Correct relationship with plans and specifications
F. Understand the steps prior to construction.	- Accuracy of information - Observance of requirements concerning: • the location of the property line and the frontage line • the level of utilities • the Building Code, etc.

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 read the conventions and symbols commonly used in construction (A):

1. Identify the ways of representing technical items.
2. Identify the views used in orthographic projection.
3. State the relationships between different orthographic views.
4. Explain the principle underlying sectional views.
5. Be familiar with the conventions of technical drawing.
6. Be familiar with the symbols used in blueprints.

Before learning how to read the dimensions of a technical drawing and a blueprint (B):

7. Explain the principle underlying the dimensioning of orthographic projections.
8. Explain the principle underlying the dimensioning of blueprints.

Before learning how to read blueprints (C):

9. Identify types of plans used to illustrate construction projects.
10. Identify the symbols used in blueprints.
11. Read and understand the information contained on the plans.
12. Visualize a structure from the plans.

Before learning how to read building specifications (D):

13. Be familiar with the types of building specifications.
14. Identify the kinds of information normally found in specifications.
15. State the importance given to specifications according to the type of construction site.

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 read the catalogues and reference manuals used in construction (E):

16. Be familiar with the various building codes and reference manuals used in construction.

Before learning how to understand the steps prior to construction (F):

17. Determine the type of building that can be built on a lot.
18. Be familiar with the responsibilities of the various parties involved.
19. Be familiar with the servitudes on a lot.
20. Be familiar with the various sources of financing for a project.

MODULE 5: MATHEMATICS APPLIED TO CONSTRUCTION

SIMCA: KCE 282
SESAME: 755-103

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
solve mathematical problems applied to construction
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Applying basic mathematical rules
- Using geometric figures
- Based on realistic problems

GENERAL PERFORMANCE CRITERIA

- Correct choice of operations
- Exact calculations
- Logical approach

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. State the expected result.	- Understanding of the elements of the problem
B. Perform basic mathematical operations.	- Exact calculations - Verification of calculations - Logical reasoning
C. Use the rule of three to solve problems.	- Recognition of variables - Correct solution

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
D. Calculate square roots.	- Correct technique - Correct results
E. Solve basic geometry problems.	- Apply the correct notions of geometry - Exact transposition of data

Field of Application:

Calculation of length, area or volume for:

- building layout
- different formwork
- various floors and walls
- stairs
- cabinets and trim
- roofs, etc.

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 state the expected result (A):

1. Interpret a problem based on a given situation.
2. Distinguish the main units of measure used on a construction site (metric and imperial systems).

Before learning how to perform basic mathematical operations (B):

3. Know the four basic operations and their properties.
4. Use the metric and imperial systems of measurement.
5. Convert fractions into decimals and vice versa.

Before learning how to use the rule of three to solve problems (C):

6. Know the basic properties of the rule of three.
7. Interpret elements of answers and formulate the problem correctly.
8. Use mathematical formulas to solve problems.

Before learning how to calculate square roots (D):

9. Know the technique for calculating square roots.

Before learning how to solve basic geometry problems (E):

10. Distinguish among various geometric figures.
11. Know the basic principles and concepts of geometry used in the trade.
12. Know how to calculate the perimeter of geometric figures.
13. Know how to calculate the area of geometric figures.
14. Know how to calculate the volume of the most common solids.
15. Apply basic principles of geometry to various problems of the trade.

MODULE 6: BUILDING LAYOUT

SIMCA: KDQ 282
SESAME: 755-054

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
do the layout of a structure
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Individually, with the assistance of another student
- Based on a site plan for residential construction
- On a site approximating real conditions and with defined boundaries

GENERAL PERFORMANCE CRITERIA

- Safe, efficient use of tools and equipment
- Exact transposition of data on plan
- Consideration of site conditions
- Consideration of immediate environment
- Exact location

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Verify the location and dimensions of the lot.	- Location of lot in accordance with site plan - Lot dimensions and location of boundaries in accordance with site plan

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Locate the corners of the building or structure.	- Location in accordance with site plan - Correct method of laying out right angles
C. Mark the excavation for the building.	- Conformity between depth of excavation, soil type, equipment or machinery used for excavating
D. Erect batter boards.	- Correct choice of type of batter board - Correct location of batter boards - Mastery of building technique - Solid construction - Saw cuts for layout lines accurate and visible
E. Determine the grades for excavating.	- Accuracy and uniformity of grades - Correct use of builder's level - Consideration of grades of municipal services
F. Determine the steps involved in the excavation.	- Correct choice of excavating equipment - Correct arrangement of earth - Access ramps provided for concrete mixer
G. Apply safety rules.	- Correct use of protective gear - Knowledge of measures for preventing cave-ins

Field of Application:

- Layout of various buildings, highway structures (e.g. viaducts)

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 verify the location and dimensions of the lot (A):

1. Show concern for accurate work and recognize the importance of constantly verifying their work.
2. Transpose plan data (e.g. parcelling, city planning) onto the lot.
3. Recognize official property limits.
4. Read surveyor's plans.
5. Measure large distances correctly.
6. Use various levels, transit levels and common measuring instruments.

Before learning how to locate the corners of the building or structure (B):

7. Use the 6-8-10 method (Pythagorean theorem).
8. Lay out a right angle.
9. State the standards governing the location of buildings.

Before learning how to mark the excavation for the building (C):

10. Describe different soil types.
11. State how much working room is required around foundations.

Before learning how to erect batter boards (D):

12. Know the different methods of erecting batter boards.
13. Explain different methods of driving stakes.
14. Know various ways of making batter boards.
15. Use various means of verifying squareness for large areas.
16. Know the ways of fastening layout lines.

Before learning how to determine the grades for excavating (E):

17. Sight grades using a transit level.
18. Determine grade points using a transparent garden hose.
19. Verify the grades of municipal services (sewers) on city plans.

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 determine the steps involved in the excavation (F):

20. Verify on site the grades of the municipal services.
21. Determine the points for placing concrete in order to provide easy access for the concrete mixer.
22. Determine the excavation equipment that is suitable for the site conditions.
23. Know the methods of clearing and backfilling concerning municipal services (sewers, aqueducts).

Before learning how to apply safety rules (G):

24. Know the precautionary measures for preventing cave-ins.

MODULE 7: FOOTING FORMS AND CONCRETE WALL FORMS

SIMCA: KDQ 283
SESAME: 755-075

Duration: 75 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
build forms for footings, foundation walls and concrete walls
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on plans
- Simulating construction site conditions
- Building the necessary formwork

GENERAL PERFORMANCE CRITERIA

- Observance of safety measures
- Logical order of operations
- Safe, efficient use of tools and equipment
- Strong, waterproof, easy-to-remove forms, in accordance with plans

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Plan and organize the work.	- Organization of work - Proper preparation of materials and site

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Locate the footings.	- Proper fastening of lines - Proper verification of squareness - Mastery of technique for using plumb bob
C. Build footing forms.	- Correct choice of panel forms - Proper leveling of base - Correct layout of forms - Proper leveling of forms - Correct bracing of forms
D. Make keyways and duct openings.	- Proper keyways - Proper formwork for openings - Proper location of openings
E. Snap lines for the foundation wall.	- Accurate location and squaring - Proper verification
F. Build concrete wall forms.	- Proper leveling and correct alignment - Proper work method - Stability of construction - Logical order of operations
G. Form openings, and install anchoring and nailing strips.	- Accurate location - Proper shimming and protection of parts (e.g. frames and doors) - Stability of joints
H. Determine the placement levels of the concrete.	- In accordance with plans - Correct technique for measuring and marking levels

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
I. Describe the steps in placing concrete.	- Mastery of techniques for handling and placing concrete - Proper protection of concrete during curing
J. Describe the steps in stripping formwork.	- Proper timing of stripping - Correct work method - Mastery of technique for cutting snap ties - Cleaning of materials
K. Install the drainage system.	- Proper preparation of bed - Proper grading - Proper connections - Proper backfilling
L. Describe the steps in dampproofing.	- Proper plugging of tie holes and other holes - Proper layer of tar
M. Apply safety rules.	- Proper use of protective gear - Safe handling of materials - Safe work methods

Field of Application:

- Footings and foundations of residential buildings, multiple housing units, industrial buildings, columns, etc.

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 plan and organize the work (A):

1. State the operations involved in building forms and placing concrete.

Before learning how to locate the footings (B):

2. Know the various types of footings.

Before learning how to build footing forms (C):

3. Know the various types of footing forms.
4. Recognize soil compactness.

Before learning how to make keyways and duct openings (D):

5. Know the different types of waterproof joints and the method of making them.
6. Know different methods of forming keyways for concrete footings.

Before learning how to snap lines for the foundation wall (E):

7. Know layout lines for formwork.

Before learning how to build concrete wall forms (F):

8. Know the different types of forms for concrete walls.
9. Describe the various parts of a concrete wall form.
10. Know the various types of snap ties used for concrete walls and the methods of fastening them.
11. Recognize defects in materials which may affect the solidity of the structure.

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 form openings, and install anchoring and nailing strips (G):

12. Explain the principle of forming openings in concrete formwork.
13. Know the different types of anchoring and nailing strips used on a concrete structure and the methods of installing them.
14. Know where reinforcement bars are required.

Before learning how to determine the placement levels of the concrete (H):

15. Determine levels at various positions.
16. Know the different methods of measuring and marking levels in concrete formwork.

Before learning how to describe the steps in placing concrete (I):

17. Describe the different methods of placing concrete.
18. Explain the principle of lateral pressure on formwork during the placement of concrete.
19. Explain the method of placing concrete around openings.

Before learning how to describe the steps in stripping formwork (J):

20. Describe the preliminary steps in stripping formwork from concrete walls.
21. Describe the operations in stripping concrete walls.

Before learning how to install the drainage system (K):

22. Know the different types of drainage pipes and how to install them.

Before learning how to describe the steps in dampproofing (L):

23. Explain the reasons for dampproofing foundation walls.
24. Describe the methods of applying dampproof membranes to foundation walls.

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 apply safety rules (M):

25. Use safe work methods.
26. Make efficient use of time and materials.
27. Handle materials in a safe manner.
28. Make the distinction between the work process and the finished product.
29. Know the expected performance criteria.

MODULE 8: COLUMN, BEAM, SLAB AND STAIR FORMS

SIMCA: KDQ 284
SESAME: 755-087

Duration: 105 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
build forms for columns, beams, slabs and stairs
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on structural plans
- Using tools, equipment and materials normally used on construction sites

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Observance of safety measures
- Logical order of operations
- Safe, efficient use of tools and equipment
- Strong, dampproof, easy-to-remove forms, in accordance with plans

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Plan and organize the work.	- Organization of work - Clear understanding of plans and specifications - Proper preparation of materials - Proper preparation of site

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Build column panels.	- Correct choice of materials - Correct method of construction - Presence and correct location of openings for cleaning and inspection - Sufficient bracing: correct choice of method (metal bands, clamps or studs)
C. Build column forms.	- Mastery of alignment technique - Proper trimming of tops for joining - Stability of structure
D. Install various supports (e.g. jacks).	- Sufficient preparation of site - Proper installation of support bases - Adjustment of tubing (jacks)
E. Install beams.	- Proper layout - Proper spacing - Proper levels
F. Install beam and slab panels.	- Correct choice of panel type - Proper work methods - Proper layout of components
G. Build concrete stair forms.	- Layout of stringers: conformity of dimensions with blueprint data - Beveling of riser planks - Stability of joining - Presence of a slope on treads

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Apply occupational safety rules.	- Proper use of protective gear - Safe handling and use of material and equipment

Field of Application:

- Commercial and industrial buildings, multiple housing units, viaducts, bridges, etc.

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 plan and organize the work (A):

1. Describe the different types of concrete beams.
2. Describe the different types of concrete slabs.
3. Describe the different types of columns that support slabs and beams.
4. Describe the different types of concrete stairs.
5. State the operations required for building forms for beams, slabs, columns and concrete stairs.

Before learning how to build column panels (B):

6. Know the methods of building column forms.
7. Know where reinforcing bars are required.
8. List the places in which formwork must be able to withstand the greatest lateral pressure during the placement of concrete.
9. Detect defects in materials such as beams, sills or panels, which can affect overall solidity.
10. Know the methods of bracing column forms.

Before learning how to build column forms (C):

11. Know the techniques for joining columns with beams.

Before learning how to install various supports (e.g. jacks) (D):

12. Know the different types of supports used in building slab and beam forms.

Before learning how to install beams (E):

13. Describe the types of concrete slabs.
14. Know the methods of building slab forms.
15. Describe the different types of panels and beams used in building concrete slab forms.
16. Know how to erect forms according to the bracing installed in forms.

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 install beam and slab panels (F):

17. Know various ways of building forms to meet the specific requirements of concrete forms.
18. To identify the ways of joining beam and slab structures.

Before learning how to build concrete stair forms (G):

19. Know the types of concrete stairs.
20. Describe methods of building concrete stair forms.
21. Identify the ways of finishing concrete stairs.

Before learning how to apply occupational safety rules (H):

22. Adopt safe work methods.
23. Make efficient use of time and materials.

MODULE 9: SCAFFOLDS AND OTHER TEMPORARY STRUCTURES

SIMCA: KCD 287
SESAME: 755-062

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
erect scaffolds and other temporary structures
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Individually, with the assistance of another student
- Based on specific data
- A minimum height of three metres (scaffolds)
- A minimum length of ten metres (scaffolds)
- Using standard scaffold members

GENERAL PERFORMANCE CRITERIA

- Correct choice of type of scaffold
- Sturdiness of footing
- Stability of members
- Use of all safety equipment
- In accordance with specified requirements

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Choose the scaffolds.	- Correct choice of scaffold

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Install the footings.	- Proper preparation of ground - Correct choice of braces - Accuracy of levels
C. Assemble and erect the scaffold members.	- Proper work method - Proper alignment and leveling - Observance of measurements and safety rules
D. Install the safety equipment and accessories.	- Observance of the safety code - Stability of anchoring - Proper means of access
E. Verify the structure.	- Proper verification and necessary corrections made
F. Dismantle the scaffolds.	- Observance of steps in dismantling - Cleaning of members - Proper storage of members
G. Apply safety rules.	- Proper use of protective gear
H. Determine other types of temporary structures to erect.	- Consideration of all important factors - Observance of the Building Code and the Safety Code - Correct choice of materials and accessories

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
1. Set up ladders and temporary stairs.	- Correct choice - Correct choice of materials - Stability of anchoring

Field of Application:

- below-ground and above-ground construction sites

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 choose the scaffolds (A):

1. Know the types of scaffolds used in carpentry.
2. Identify the main members of a scaffold.
3. Know the purpose of each type of scaffold.

Before learning how to install the footings (B):

4. Identify the types of scaffolding footings according to ground conditions and load.
5. Know the scaffold members which provide stability and support.

Before learning how to assemble and erect the scaffold members (C):

6. Describe the ways of assembling various scaffold members.
7. Explain building standards for scaffolds.
8. Plan the operations involved in erecting scaffolds.

Before learning how to install the safety equipment and accessories (D):

9. Know the safety rules and standards concerning working at a height.
10. Know the safety equipment and accessories used for various types of scaffolds.

Before learning how to verify the structure (E):

11. Know what verifications to make.

Before learning how to dismantle the scaffolds (F):

12. List the precautions to take when dismantling a scaffold.

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 apply safety rules (G):

13. List the precautions to take when working on scaffolds.

Before learning how to determine other types of temporary structures to erect (H):

14. List other types of temporary structures used in construction.
15. Know the types of guardrails used on construction sites.
16. Know the types of signs used on construction sites.
17. Identify types of temporary stairs.
18. Describe the walkways used on construction sites.
19. Identify and describe the types of ladders built on site.
20. State the types of bracing to erect to prevent cave-ins.
21. Describe the types of structures built to protect the public.
22. Describe, according to use, the methods of fastening and mooring for other temporary structures.
23. Choose the hardware to be used in erecting other temporary structures.

Before learning how to set up ladders and temporary stairs (I):

24. Know the safety rules and standards concerning ladders and temporary stairs.

MODULE 10: HEALTH AND SAFETY ON CONSTRUCTION SITES

SIMCA: ECE 283
SESAME: 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 safety representatives and safety officers.
- Be aware of the hazards and safety measures related to performing 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 using certain products.
- Know what to do in case of an accident.

LEARNING CONTEXT

PHASE 1: **Information**

- Becoming familiar with the objectives of the unit.

FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: **Learning**

- Receiving information on the topic covered in the unit.
- Forming and expressing an opinion on the topic.
- Asking questions.
- Listing the main concepts and 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:

- Use a suitable room and proper materials.
- Present the material in a dynamic manner.
- Encourage the students to engage in group discussion.
- Make good use of teaching materials (e.g. tables, transparencies, films, videotapes, cards).

PARTICIPATION CRITERIA

The students must:

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

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 in Phase 1:

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

Before undertaking the activities of Phase 2:

3. Find the appropriate information.
4. Determine how to record and present data.
5. Explain the main rules governing group discussion.

Before undertaking the activities of Phase 3:

6. Describe how a questionnaire is answered.

MODULE 11: SKETCHES AND DRAWINGS

SIMCA: KCE 281
SESAME: 755-094

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
make sketches and drawings applied to construction
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Individually
- Using appropriate instruments and equipment
- On drawing paper
- In a room equipped with drawing tables

GENERAL PERFORMANCE CRITERIA

- Mastery of the basics of technical drawing
- Clearness of drawings
- Precision of lines

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Draw various geometric figures (e.g. a square, rectangle, circle, triangle, hexagon, octagon and ellipse).	- Correct work method - Precision of lines - Exact shapes and dimensions

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Draw freehand orthographic projections of a simple technical object.	- Observance of proportions - Accurate relationship between views - Observance of types of lines - Precision of lines
C. Draw sections of a technical object.	- Conformity of drawing with object - Conformity of hatching with materials - Clearness of drawing
D. Dimension a technical drawing.	- Compliance with standards - Correct location of lines
E. Draw the different views of a basic blueprint.	- Correct choice of views - Proper use of scales - Accuracy of details
F. Draw developments applied to carpentry.	- Conformity of method with type of development - Precision of lines

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 draw various geometric figures (e.g. a square, rectangle, circle, triangle, hexagon, octagon and ellipse) (A):

1. Identify the ways of representing technical objects.
2. Know the main geometric figures used in construction.
3. Identify the different methods of drawing geometric figures according to dimensions.

Before learning how to draw freehand orthographic projections of a simple technical object (B):

4. Distinguish among the various views used in orthographic projection.
5. Match the different sides of an object with orthographic projections.
6. Know technical drawing conventions.
7. Develop a sense of proportion.
8. Draw freehand various types of lines at different angles.
9. Draw orthographic projections of simple objects using drawing instruments.

Before learning how to draw sections of a technical object (C):

10. Explain the principle of sections and various sectional drawings.
11. Identify the various types of hatching used for different materials.

Before learning how to dimension a technical drawing (D):

12. Explain the principle underlying dimensioning in orthographic projection.
13. State the types of useful notations on technical drawings and blueprints.

Before learning how to draw the different views of a basic blueprint (E):

14. Apply the rudiments of technical drawing to various blueprints.
15. Determine the views required to properly represent a structure on a plan.

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 draw developments applied to carpentry (F):

16. State the purpose of development drawings.
17. Explain the principle of development drawings.
18. Draw developments of various shapes.

MODULE 12: JOINTS AND EQUIPMENT

SIMCA: KDQ 285
SESAME: 755-263

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

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

CONDITIONS FOR PERFORMANCE EVALUATION

- Using solid wood and wood panels
- Using equipment and materials commonly used on construction sites

GENERAL PERFORMANCE CRITERIA

- Mastery of joining techniques
- Safe, efficient use of equipment
- Sturdiness of joints
- Preventive maintenance of equipment; knowledge of the main causes of wear
- Observance of safety rules

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Make joints.	- Correct type of joint - Precision of joints - Sturdiness of joints

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Reinforce joints with various fasteners (e.g. hardware, nails, screws and bolts).	- Correct choice of fastener - Proper installation technique - Sturdiness (number and location of anchoring) - Correct choice of tools
C. Drive anchoring devices into various surfaces (e.g. concrete, masonry, metal or plastic).	- Correct choice of anchoring - Proper driving technique
D. Install anchoring devices using a power driver.	- Correct choice of charge - Proper work method - Observance of safety measures
E. Use sawing equipment (e.g. radial arm saw, power mitre saw and circular saw).	- Correct choice of blade - Proper adjustment of accessories - Correct positioning of material to be cut - Observance of safety rules
F. Use shaping equipment (e.g. jointer, planer).	- Proper adjustment of machine settings - Mastery of techniques for using equipment - Use of safety gear
G. Use drilling and routing equipment (e.g. drill, router-shaper).	- Correct choice of bit or cutter - Exact setting - Use of safety gear
H. Use sanding machines.	- Appropriate choice of abrasives - Proper technique for using various sanding machines
I. Recognize new materials.	- Use of new techniques in construction

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
J. Maintain equipment.	- Correct choice of lubricant - Thorough understanding of service manual
K. Apply rules for preventing accidents in the workplace.	- Proper use of protective gear - Safe work methods

Field of Application:

Floor and wall framing, cabinets and accessories, roofs and door installation

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 make joints (A):

1. Identify joining methods commonly used in the trade.
2. Identify the methods of joining that are specific to different types of materials.
3. Know the hardware used for mobile or permanent joints.
4. Know the proportions to observe to make each part in a joint.
5. Know how to use properly the equipment required for machining the parts of a joint.

Before learning how to reinforce joints with various fasteners (e.g. hardware, nails, screws and bolts) (B):

6. Identify fasteners used in construction.
7. Know the methods of installing fasteners used in construction.
8. Know the tools used to install fasteners.
9. Know the methods of installing hinges.
10. Know the methods of installing various types of hardware.

Before learning how to drive anchoring devices into various surfaces (e.g. concrete, masonry, metal or plastic) (C):

11. Describe the types of anchoring used with different types of materials.
12. Know the anchoring methods used in construction.
13. Determine the condition of frames or structures used as anchoring bases.
14. Estimate the resistance necessary for anchoring materials.

Before learning how to install anchoring devices using a power driver (D):

15. Identify the types of pins and cartridges used in nail guns according to their nature and use.
16. Explain the safety rules for using power drivers.

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 sawing equipment (e.g. radial arm saw, power mitre saw and circular saw) (E):

17. Explain how a radial arm saw and a power mitre saw operate.
18. Explain how a circular saw operates.
19. Explain how a band saw operates.
20. Judge, by sight and touch, the sharpness of a cutting tool.

Before learning how to use shaping equipment (e.g. jointer, planer) (F):

21. Explain how a jointer and a planer operate.

Before learning how to use drilling and routing equipment (e.g. drill, router-shaper) (G):

22. Explain how a drill operates.
23. Explain how a portable router operates.

Before learning how to use sanding machines (H):

24. Explain how an orbital sander operates.
25. Explain how a belt sander operates.

Before learning how to recognize new materials (I):

26. Determine the applications of new techniques in construction.

Before learning how to maintain equipment (J):

27. Know the maintenance points on the equipment used.

Before learning how to apply rules for preventing accidents in the workplace (K):

28. Adopt safe work methods.

MODULE 13: FLOOR AND WALL FRAMING

SIMCA: KDQ 286
SESAME: 755-138

Duration: 120 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
build floor and wall framing
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on framing plans
- Using the tools, equipment and materials normally used on construction sites

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Logical order of operations
- Safe, efficient use of tools and equipment
- In accordance with plans (location of rooms and openings)
- In accordance with standards
- Secure anchoring of members

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Plan and organize the work.	- Organization of work - Proper preparation of materials and site - Clear understanding of plans and specifications

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Install the beam or erect the loadbearing wall.	- Proper installation of columns - Correct method of laying out the beam - Mastery of technique for erecting walls
C. Install the floor joists.	- Correct choice of joists - Conformity of spacing - Observance of technique for building openings
D. Cut and install cross bridging.	- Mastery of layout technique for cross bridging - Correct installation
E. Install subflooring.	- Proper layout and anchoring
F. Construct balloon frame walls using wood or metal.	- Correct location of studs - Observance of technique for framing openings - Proper anchoring of material - Mastery of technique for erecting walls - Accuracy of squaring and alignment - Correct installation of vapour barrier and proper anchoring
G. Construct plank frame walls.	- Correct location of studs - Observance of technique for framing openings - Accuracy of squaring and alignment

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Build wood partitions.	- Correct location of studs - Observance of technique for framing openings - Proper anchoring of material - Mastery of technique for erecting walls - Accuracy of squaring and alignment - Correct method for measuring and installing girts
I. Build metal stud partitions.	- Correct location of studs - Proper anchoring of material - Mastery of technique for erecting wall partition - Accuracy of squaring and alignment
J. Apply safety rules.	- Proper use of protective gear - Safe handling and use of materials 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 plan and organize the work (A):

1. Know the loadbearing members of floors.
2. Know the components of a floor.
3. Know the components of loadbearing and non-loadbearing walls.
4. Know the various types of exterior wall framing.
5. Explain various methods of erecting framing.
6. Calculate the dimensions of openings in floors and walls.

Before learning how to install the beam or erect the loadbearing wall (B):

7. Know the different types of beams and posts used in wood frame construction.
8. Identify the materials used in constructing beams.
9. State the characteristics of loadbearing walls.
10. Determine the size of members according to the loads to be supported.
11. Recognize by sight and touch the material defects that can affect overall quality of the structure.
12. Handle materials safely.
13. Identify different techniques for joining framing members.

Before learning how to install the floor joists (C):

14. Explain the principle of building floor and wall openings.
15. Recognize by sight building irregularities and defects.
16. Calculate the loads to be supported by floors in order to determine the dimensions and spacing of floor joists.

Before learning how to cut and install cross bridging (D):

17. Know the methods of cutting and installing cross bridging.

Before learning how to install subflooring (E):

18. Know the types of subflooring and the methods of installing them.

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 construct balloon frame walls using wood or metal (F):

19. Know the need for nailing bases in framing and the methods of installing them.
20. Describe the techniques for assembling and joining various framing members.
21. Calculate the lengths of wall studs.
22. Describe metal studs used in constructing framing and the methods of installing them.
23. Identify the methods of bracing framing.
24. Identify the methods of anchoring metal studs.
25. Use time and materials efficiently.

Before learning how to construct plank frame walls (G):

26. Know the methods of constructing plank framing.

Before learning how to build wood partitions (H):

27. State the methods of building and erecting wood partitions.

Before learning how to build metal stud partitions (I):

28. Describe the metal studs used in constructing partitions and the methods of installing them.
29. State the methods of constructing loadbearing walls from metal studs.
30. State the methods of constructing non-loadbearing partitions from metal studs.

Before learning how to apply safety rules (J):

31. Adopt safe work methods.
32. Know the safety rules and measures applicable to floor and wall framing.

MODULE 14: ROOFS

SIMCA: KDQ 287
SESAME: 755-146

Duration: 90 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
build roofs
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on framing plans
- Using the necessary tools, equipment and materials
- Building the roof structure
- Using the specified sheathing
- Using the specified covering

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Observance of safety measures
- Logical order of operations
- Safe, efficient use of tools and equipment
- In accordance with plans and building standards

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Verify the condition of the framing.	- Proper verification of squaring, leveling and alignment
B. Make calculations for roof members.	- Accurate method of calculating - Accuracy of calculations

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
C. Build the roof truss.	- Observance of building standards and dimensions - Correct method of construction
D. Cut and join the roof members.	- Proper use of framing square - Accurate layout - Correct choice of gussets (e.g. wood, metal, dimensions, quality) - Proper anchoring of gussets
E. Install trusses or joists and rafters.	- Observance of spacing - Proper alignment of members - Correct work methods - Proper anchoring
F. Build dormers.	- Observance of proportions - Methods of joining with roof - Correct work methods
G. Apply the roof sheathing.	- Correct choice of materials - Starter course according to sheathing and finishing used - Proper construction of eaves
H. Lay the flashing and roof covering (asphalt or wood shingles or sheet metal).	- Correct choice of materials - Correct method of installation - Waterproofing around ducts - Proper finishing of rafters (ridge, hip, valleys, intersections)
I. Apply safety rules.	- Proper use of protective gear - Safe handling and use of materials and equipment - Safe work methods

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 verify the condition of the framing (A):

1. Know types of roofs.
2. Read plans.

Before learning how to make calculations for roof members (B):

3. Know the members of a roof and the terms describing them.
4. Know the standards for roof construction.
5. Know the relationship between various roof loads and the strength of roof members.
6. Know the methods of calculating quantities of materials for various types of roofs.

Before learning how to build the roof truss (C):

7. Know the components of roof framing and of trusses.
8. Use the framing square to lay out the members of a roof frame.
9. Know the different types of roof trusses.
10. Know the types of gussets used in joining roof trusses.

Before learning how to cut and join the roof members (D):

11. Recognize by sight and touch material defects that can affect the quality of work.
12. Know the methods of fastening metal gussets.
13. Know the standards for installing wood gussets for roof trusses.

Before learning how to install trusses or joists and rafters (E):

14. Recognize by sight building irregularities and defects.
15. Know the methods of raising roof trusses into place.
16. Know the methods of joining and anchoring trusses or rafters.

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 build dormers (F):

17. Know types of dormers.
18. Explain the methods of building dormers.
19. Explain the ways of building roof framing that supports dormers.

Before learning how to apply the roof sheathing (G):

20. Describe the types of roof sheathing and the methods of installing them.
21. Explain the methods of finishing eaves.

Before learning how to lay the flashing and roof covering (asphalt or wood shingles or sheet metal) (H):

22. Describe the types of roof covering and the methods of installing them.
23. Explain the principles of waterproofing around ducts.
24. Choose scaffolding according to the type of covering and pitch of the roof.
25. Know the specific uses of various types of roof covering.
26. Know the methods of anchoring roof covering materials.
27. Know the methods of installing roof flashing.
28. Handle materials properly and safely.

Before learning how to apply safety rules (I):

29. Adopt safe work methods on a construction site.

MODULE 15: INSULATION, SOUNDPROOFING AND VENTILATION

SIMCA: KDQ 288
SESAME: 755-155

Duration: 75 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **do the insulation, soundproofing and ventilation of a building** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on structural plans
- Based on real or simulated situations
- Using the appropriate tools, equipment and materials

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Observance of insulation, soundproofing and ventilation standards
- Logical order of operations
- In accordance with plans
- Observance of current standards and rules
- Quality of work: proper filling of spaces, proper installation
- Observance of safety measures

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Identify the techniques for insulating buildings.	- Correct choice of insulating materials and calculation of quantities - Observance of standards - Proper combination of materials

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Install insulation.	- Proper method of installation - Quality of installation
C. Identify the techniques for soundproofing buildings.	- Correct choice of soundproofing techniques - Correct choice of soundproofing material - Correct explanation of underlying principles
D. Install soundproofing in framing members.	- Proper method of installation - Observance of instructions (quality of installation)
E. Apply the techniques for ventilating buildings.	- Observance of ventilation standards - Correct type of ventilation according to the type of structure and the related problems
F. Insulate and caulk openings.	- Correct choice of materials and products - Proper method of installation - Airtightness
G. Install other materials to complete the insulation.	- Accuracy of cutting - Correct installation
H. Install the vapour barrier.	- Proper method of installation - Proper sealing of joints

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
I. Install the furring and nailing bases.	- Proper location - Proper anchoring
J. Cover columns, concrete surfaces and ducts.	- Proper location - Correct choice of materials - Techniques used - Correct work methods
K. Apply safety rules.	- Proper use of protective gear - Safe handling and use of materials and equipment - Safe work methods

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 identify the techniques for insulating buildings (A):

1. Know the principles of insulating various types of framing.
2. Know the causes of sound transmission.
3. Know types of insulation.
4. Know the techniques and means used to soundproof framing.
5. Explain the principle of thermal resistance in materials.
6. Know insulation standards in relation to heating systems and regions.
7. Calculate the thermal resistance of members and the necessary quantities.
8. Describe and identify insulating materials and soundproofing materials.

Before learning how to install insulation (B):

9. Explain the methods of installing various insulating materials.
10. Correct or change defective framing members.

Before learning how to identify the techniques for soundproofing buildings (C):

11. State the standards and rules for soundproofing public buildings.
12. State the standards and rules for soundproofing housing units.
13. Know the techniques for building framing walls and partitions that reduce sound transmission.
14. Know the techniques for building floors that reduce sound transmission.
15. Know the techniques and methods of interior finishing that reduce sound transmission in buildings.

Before learning how to install soundproofing in framing members (D):

16. State the methods of installing soundproofing materials.

Before learning how to apply the techniques for ventilating buildings (E):

17. Calculate the net sizes of openings required to ventilate a roof.
18. Determine the type of ventilation to install.
19. Recognize ventilation problems and make the necessary corrections.

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 insulate and caulk openings (F):

20. Describe the products and materials used for caulking and insulating around openings.

Before learning how to install other materials to complete the insulation (G):

21. Explain the methods of installing related insulation materials.

Before learning how to install the vapour barrier (H):

22. Describe the types of vapour barriers.

Before learning how to install the furring and nailing bases (I):

23. Determine the location of nailing bases.
24. Identify the places where nailing bases are required.
25. Divide surfaces for the installation of furring according to the installation of finish materials.

Before learning how to cover columns, concrete surfaces and ducts (J):

26. Know the methods of covering concrete columns.
27. Know the methods of installing furring on masonry or concrete walls.
28. Know the methods of covering ducts.

Before learning how to apply safety rules (K):

29. Adopt safe work methods.
30. Know the safety rules and measures that apply to the handling of insulating and soundproofing materials.

MODULE 16: EXTERIOR FINISH

SIMCA: KCE 288
SESAME: 755-165

Duration: 75 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply exterior finish
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on structural plans or a description of the finish to apply
- Using tools, equipment and materials normally used on construction sites
- On previously prepared surfaces

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Observance of safety measures
- Logical order of operations
- Safe, efficient use of tools and equipment
- In accordance with plans
- Accuracy of work
- Quality of finished product: attractiveness, observance of specifications

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Verify the condition of the framing.	- Proper verification of squaring, leveling and alignment

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Install the door and window frames.	- Uniform height - Accuracy of squaring, leveling - Proper anchoring
C. Verify or apply the building paper, flashing and furring.	- Airtightness around openings and at foundation corners - Proper anchoring - Necessary shims
D. Install the necessary scaffolds.	- Observance of safety measures - Correct choice of type of scaffold
E. Install starter strips and ending strips at corners and around openings.	- Precision of cutting - Mastery of installation technique - Proper anchoring
F. Install exterior siding (clapboard, shingles and shakes, and metal).	- Mastery of cutting techniques - Mastery of installation techniques - Proper anchoring - Attractive appearance
G. Caulk around openings and corners.	- Correct choice of product - Mastery of installation techniques - Airtightness
H. Finish eaves and cornices.	- Choice of materials in accordance with plans - Mastery of cutting and anchoring techniques - Attractive appearance

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
I. Inspect the work.	- Thorough inspection - Observance of criteria and quality standards - Necessary corrections made - Special attention to areas around openings

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 verify the condition of the framing (A):

1. Recognize and choose the products or sheathing for exterior walls.
2. Recognize the types of exterior finish.

Before learning how to install the door and window frames (B):

3. Describe the different types of door and window frames and their method of installation.

Before learning how to verify or apply the building paper, flashing and furring (C):

4. Explain the preliminary operations for applying different types of exterior finish.

Before learning how to install the necessary scaffolds (D):

5. Recognize and erect the types of scaffolds necessary for applying exterior finish.

Before learning how to install starter strips and ending strips at corners and around openings (E):

6. Install the different types of accessories and mouldings needed to apply finish products.

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 install exterior siding (clapboard, shakes and shingles, and metal) (F):

7. Explain the principle of covering joints in relation to the order of applying materials.
8. Identify the methods of installing and anchoring different types of exterior siding.
9. Detect by sight differences in the colour of finishing materials.
10. Develop a discerning eye and concern for attractive work.
11. Make efficient use of time and materials.

Before learning how to caulk around openings and corners (G):

12. Explain the principles of making openings and corners airtight.

Before learning how to finish eaves and cornices (H):

13. State the importance of and need for ventilation in soffits.
14. Identify different ventilation techniques in soffits.
15. Fit different types of materials between them.

Before learning how to inspect the work (I):

16. Adopt safe work methods.
17. Learn to work in a team.

MODULE 17: INTERIOR FINISH

SIMCA: KDQ 289
SESAME: 755-177

Duration: 105 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
apply interior finish
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on framing plans and specifications
- On previously prepared surfaces
- Using tools, equipment and materials normally used on construction sites

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Logical order of operations
- Precision and quality of work
- Correct combination of products
- In accordance with plans
- Attractive appearance of finished product
- Safe, efficient use of tools and equipment

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Plan and organize the work.	- Logical organization of work - Proper preparation of materials - Clean work area - Clear understanding of plans and specifications
B. Verify the condition of the framing and make the necessary corrections.	- Proper verification of squaring, leveling and alignment - Access to roof - Installation of all required nailing bases
C. Apply interior finish on walls and ceilings.	- Mastery of cutting techniques - Mastery of application techniques - Proper anchoring - Attractive appearance
D. Install suspended ceilings.	- Mastery of leveling techniques - Correct alignment of supports - Correct division of surfaces - Proper anchoring
E. Hang doors (prehung and job-built).	- Mastery of technique for installing prehung doors - Mastery of technique for installing hinges and locks - Proper installation of tracks - Accurate adjustment: clearance, squaring and leveling
F. Sheathe around doors and windows.	- Correct choice of materials - Precision of cutting and proper anchoring - Proper sanding

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
G. Apply finish mouldings.	- Correct choice of materials - Precision of cutting - Proper method of fastening - Attractive appearance - Proper sanding
H. Lay wood floors.	- Correct layout of strips: direction, centring, etc. - Proper matching of colours - Mastery of laying, anchoring or gluing techniques - Proper sanding of components
I. Install shelves, storage unit rods and various finish accessories.	- Precision of cutting - In accordance with standards and specifications - Proper anchoring and sanding
J. Inspect the work.	- Thorough inspection - Observance of criteria and quality standards - Necessary corrections made
K. Apply safety rules.	- Proper use of protective gear

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 plan and organize the work (A):

1. Describe the different types of interior finish.
2. Know the methods used to apply each type of interior finish.

Before learning how to verify the condition of the framing and make the necessary corrections (B):

3. Explain the methods of truing walls and ceilings.
4. Apply various methods of aligning and leveling ceiling surfaces.

Before learning how to apply interior finish on walls and ceilings (C):

5. Describe interior finish materials for multiple housing units.
6. Describe interior finish materials for commercial buildings.
7. Know the units of measure used to calculate quantities of finish materials.
8. Know the methods of installing and anchoring different types of interior coverings.
9. Cut different finish materials with precision.
10. Handle finish materials safely and properly.

Before learning how to install suspended ceilings (D):

11. Describe the various types of mouldings for suspended ceilings.
12. Describe finish elements or tiles for suspended ceilings.
13. Divide surfaces.
14. Use a laser level (review of concepts seen in Module 3).

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 hang doors (prehung and job-built) (E):

15. Explain the methods of installing prehung doors.
16. Explain the methods of hanging doors in their frames.
17. Know the rules for determining the swing of a door.
18. Know the rules and standards for hanging interior doors.
19. Install different types of doorknobs, locks and accessories.
20. Install different types of door hinges.

Before learning how to sheathe around doors and windows (F):

21. Know the methods of sheathing around doors and windows.
22. Fit different types of materials between them.

Before learning how to apply finish mouldings (G):

23. Know various mouldings and their uses.
24. Make coped joints and mitre joints.
25. Fasten mouldings in various positions.

Before learning how to lay wood floors (H):

26. Describe the different types of wood floors.
27. Recognize slight differences in colour or pattern in finishing materials.
28. Explain the methods of laying strip floors.
29. Explain the methods of laying parquet floors.
30. Sand floors.
31. Finish floors.

Before learning how to install shelves, storage unit rods and various finish accessories (I):

32. Know the rules and standards for shelving, closet rods and storage closets.
33. Install various finish accessories.

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 inspect the work (J):

34. Develop a conscientious attitude toward good work.

Before learning how to apply safety rules (K):

35. Adopt safe work methods.

MODULE 18: CABINETS AND ACCESSORIES

SIMCA: KCF 282
SESAME: 755-194

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
build and install cabinets and accessories
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on plans and specifications
- Using the proper tools, equipment and materials
- Using the proper anchoring

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Logical order of operations
- Precision and quality of work
- Correct combination of materials
- In accordance with plans
- Attractive appearance of finished product
- Safe, efficient use of tools and equipment

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Plan and organize the work.	- Observance of order of operations, in accordance with the work process - Proper preparation of work area

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. Read plans and specifications.	- Accurate transposition of plan data - On-site measuring if necessary, verification of squaring and leveling
C. Build cabinets.	- Correct choice of materials - Observance of current standards and rules - Mastery of techniques for machining materials - Correct choice of joining method - Accuracy and stability of joints and assembly
D. Finish cabinets.	- Uniformity and quality of sanding - Correct choice of products - Mastery of techniques for applying finish elements - Uniformity of finishes
E. Mount and secure the units.	- Accuracy of levels and locations - Correct type of anchoring - Mastery of anchoring techniques
F. Install factory-built and custom-built countertops.	- Mastery of techniques for cutting and installation - Accuracy of fit - Precision in drilling openings
G. Apply mouldings and trim (e.g. valances, false beams, hardware and mouldings).	- Correct choice of materials - Mastery of techniques for installing and adjusting hardware - Quality of work (e.g. appearance, finishing of joints)

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Fit the moving components of cabinets and verify the work.	- Mastery of work techniques - Concern for treating finished materials - Concern for appearance of work - Mastery of touch-up techniques
I. Apply safety rules.	- Proper use of protective gear - Safe work methods

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 plan and organize the work (A):

1. Describe the different materials used in building cabinets.
2. Know the different types of cabinets.
3. Explain the methods of fitting preassembled components on different types of materials.
4. Choose the anchoring required to install cabinets.

Before learning how to read plans and specifications (B):

5. Know the standards and rules that apply to cabinets in housing units.
6. Estimate quantities of materials and anchoring.

Before learning how to build cabinets (C):

7. Choose the tools and equipment for cutting and joining different types of materials.
8. Recognize by sight and sound the material defects or colour differences that can affect the quality of work.
9. Make different types of joints using various materials.
10. Install different types of cabinet hardware.
11. Sand different types of materials properly.

Before learning how to finish cabinets (D):

12. Recognize different types of finish applied to cabinets.
13. Describe finish products for cabinets.
14. Do simple finishing.
15. Repair minor damage to materials or finishes.

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 mount and secure the units (E):

16. Ensure that surfaces are plumb and level (review of concepts seen in Module 3).
17. Install different anchoring.

Before learning how to install factory-built and custom-built countertops (F):

18. Describe the features of laminates.
19. Describe the methods of cutting laminates.
20. Explain the methods of applying and trimming panel edge strips.

Before learning how to apply mouldings and trim (e.g. valances, false beams, hardware and mouldings) (G):

21. Explain the methods of applying finish accessories, such as valances and sunshades.
22. Apply various finish accessories.

Before learning how to fit the moving components of cabinets and verify the work (H):

23. Explain the methods of fitting hinges, locks, etc. on cabinets.

Before learning how to apply safety rules (I):

24. Adopt safe work methods.

MODULE 19: STAIRS

SIMCA: KDR 281
SESAME: 755-207

Duration: 105 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
build wood staircases
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Individually
- Using the data provided
- Using the proper tools, equipment and materials
- Building part of a platform staircase

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Observance of safety measures
- Logical order of operations
- Safe, efficient use of tools and equipment
- In accordance with plans
- Precision of work
- Quality and appearance of finished product

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Make the calculations required to build the staircase (e.g. rise and run, stairwell).	- Mastery of calculation techniques - Observance of current standards and rules - Accuracy of calculations - Conformity and agreement with actual dimensions
B. Cut stringers.	- Correct choice of materials - Proper layout method - Mastery of cutting technique
C. Make and join treads and risers.	- Correct choice of materials - Mastery of machining techniques - Proper method of joining treads and risers
D. Fasten stairs into position.	- Proper work method - Mastery of anchoring technique, stability
E. Finish stairs.	- Proper sanding - Proper finishing of return nosings - Proper filling of holes - Proper finishing of stairwell
F. Install the handrail.	- Observance of standards and rules concerning height and distance from the wall - Mastery of anchoring technique

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
G. Install the railing around the stairwell.	- Observance of standards and rules concerning height and distance between balusters - Mastery of technique for anchoring balusters and stability - Mastery of techniques for installing balusters
H. Apply safety rules.	- Appropriate use of protective gear - Safe work methods

Field of application:

- Straight, platform and winding stairways

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 make the calculations required to build the staircase (e.g. rise and run, stairwell) (A):

1. Know the different types of stairs.
2. Know the standards for building stairs (e.g. rise and run, headroom, width).
3. Calculate the rise and run of various types of stairs.
4. Calculate the total run of a stairwell.
5. Know the standards for the length of a flight of stairs.
6. Calculate the dimensions of winding staircase carriages.

Before learning how to cut stringers (B):

7. Know different methods of joining treads, risers and stringers.
8. Describe different types of staircase stringers.
9. Know the methods of cutting open stringers.
10. Know the methods of dadoing housed stringers.
11. Know the methods of building wall stringers.
12. Explain the techniques for building winding staircase stringers.

Before learning how to make and join treads and risers (C):

13. Know the different varieties of wood generally used for making staircases.

Before learning how to fasten stairs into position (D):

14. State the methods of anchoring and reinforcing staircases.

Before learning how to finish stairs (E):

15. Know the various methods of finishing the area around stairwells.
16. Describe various methods of finishing the nosing on an open stairway.
17. Cut and install baseboards on staircases.
18. Develop a concern for attractive work.

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 install the handrail (F):

19. Know the standards and rules for handrails.
20. Install handrails for various types of staircases.

Before learning how to install the railing around the stairwell (G):

21. Know the standards concerning guards and balustrades for staircases.
22. Identify various means of strengthening guards and balustrades on staircases.

Before learning how to apply safety rules (H):

23. Adopt safe work methods.

MODULE 20: ESTIMATING AND PLANNING

SIMCA: KDR 282
SESAME: 755-272

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
make an estimate for and plan a job
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on a plan and specifications for a bungalow-type home
- Based on a predetermined waste percentage
- Using building codes and standards
- Using technical information provided by manufacturers

GENERAL PERFORMANCE CRITERIA

- Thorough understanding of plans
- Correct choice of plan dimensions according to calculations to be made
- Accuracy of calculations made
- Logical procedure

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Calculate quantities of materials required to do a specific job.	- Understanding of elements of the problem - Logical reasoning - Use of correct mathematical formulas - Correct understanding of manufacturers' instructions - Accurate estimate of required quantities
B. Plan the construction work.	- Consideration of types of permits, services and regulations - Observance of scheduling of work to perform - Correct choice of semi-skilled labour

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 calculate quantities of materials required to do a specific job (A):

1. Identify the various steps in calculating quantities of materials.
2. Determine the various materials required based on the plan and specifications.
3. Observe the information pertaining to each type of material.
4. Estimate quantities of materials.
5. Estimate waste percentages.
6. Recognize the importance of accuracy in measurement and of precision in calculations.

Before learning how to plan the construction work (B):

7. State the permits required for the layout of a building.
8. Determine the stages in the construction (sequence).
9. Determine the various trade groups and their respective roles in each stage of construction.
10. Plan the manufacturing and delivery of various materials (e.g. windows and trusses).

MODULE 21: DEMOLITION, RENOVATION AND MAINTENANCE

SIMCA: KDR 283
SESAME: 755-234

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **plan demolition, renovation and maintenance work for buildings** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using plans and specifications
- Using the necessary tools, equipment and materials
- Based on existing projects or situations

GENERAL PERFORMANCE CRITERIA

- Proper planning and organization of work
- Logical order of operations
- Accuracy and quality of work
- In accordance with plans
- Attractive appearance
- Safe, efficient use of tools and equipment
- Salvaging of materials

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Plan and organize the work.	- Proper scheduling of work - Correct choice of semi-skilled labour

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
B. State the procedures for ensuring public safety around the work site.	- Adequate public safety - Protection of work areas
C. Install temporary supporting members.	- Correct choice of methods and materials - Appropriate work methods
D. Plan the demolition.	- Correct choice of tools and equipment - Proper work method - Proper cleaning of premises
E. Remove components such as doors, windows and cabinets.	- Proper work method - Correct choice of tools - Proper protection of components
F. Fit and install salvaged components.	- Correct choice of joining and anchoring methods - Stability of structure - Attractive appearance
G. Do the finishing on the structure.	- Correct choice of materials - Mastery of techniques for applying various materials - Correct choice of anchoring methods
H. Plan different remodeling jobs.	- Accuracy, stability and quality of work - Proper work methods
I. Plan different building maintenance jobs.	- Proper maintenance of mobile components - Proper work methods
J. Apply safety rules.	- Proper use of protective gear - Application of public safety measures

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 plan and organize the work (A):

1. Identify, using plans and specifications, the features of different types of construction.
2. Determine the features of existing structures on a construction site.
3. Determine the protective measures to adopt during demolition work.
4. Know various means of removing demolition debris according to work site conditions.
5. Choose the semi-skilled labour and specific equipment required for each project.
6. Know the safety measures to adopt for demolition and renovation work.

Before learning how to state the procedures for ensuring public safety around the work site (B):

7. Choose the correct scaffolding.
8. Choose the means of removing demolition debris.
9. Build temporary structures.

Before learning how to install temporary supporting members (C):

10. Identify, on plans or on a construction site, the supporting members of framing.
11. Choose the means of temporary support for framing.

Before learning how to plan the demolition (D):

12. Choose the methods of removing different structural and anchoring members.
13. Use a jack hammer.
14. Adopt safe work methods.

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 remove components such as doors, windows and cabinets (E):

15. Know the methods of removing components and of protecting structures.
16. Remove window or cabinet components.

Before learning how to fit and install salvaged components (F):

17. Choose the means of joining and anchoring various salvaged materials.

Before learning how to do the finishing on the structure (G):

18. Determine the means of combining new and used finishing materials.
19. Develop a conscientious attitude towards work.
20. State the rules concerning the appearance of remodeling work.

Before learning how to plan different remodeling jobs (H):

21. Know the methods of rebuilding roofing.
22. Know the methods of redoing floors.
23. Know the methods of redoing concrete structures.
24. Know the methods of demolishing or moving loadbearing and non-loadbearing walls.

Before learning how to plan different building maintenance jobs (I):

25. Describe the maintenance work done on buildings.
26. Know how various types of locks, door handles and window joints work.
27. Know the methods of installing various floor tiles.

Before learning how to apply safety rules (J):

28. Know the safety rules that apply to public buildings.
29. Know public safety rules.

MODULE 22: JOB SEARCH TECHNIQUES

SIMCA: KDR 284
SESAME: 755-241

Duration: 15 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
use job search techniques
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Based on a personal profile
- Based on models of résumés and letters of application
- In simulated interviews
- Based on real or plausible carpentry data

GENERAL PERFORMANCE CRITERIA

- Observance of document formatting rules
- Quality of oral and written communication

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Describe the steps in a creative job search.	- Description of all steps - Logical order - Description of important elements
B. Write a résumé.	- Quality of presentation - Presence of relevant information - Clear, concise style

FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
C. Write a letter of application.	- Relevance to job sought - Absence of grammatical and spelling errors - In accordance with the requirements of the job
D. Take part in a job interview.	- General knowledge of the construction site and the type of job sought - Politeness - Attentiveness - Relevant answers - Clarity of expression
E. Describe effective follow-up techniques.	- Presence of important elements - Description of follow-up methods

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 describe the steps in a creative job search (A):

1. Define the concept of "creative job search."
2. Know the attitudes necessary in a job search.

Before learning how to write a résumé (B):

3. Make a personal profile according to the type of job sought.
4. Define the purpose of a résumé and the benefits of using it.
5. List the characteristics of a good résumé.
6. Describe each part of a résumé.

Before learning how to write a letter of application (C):

7. Define the purpose of a letter of application.
8. State the characteristics of an effective letter of application.

Before learning how to take part in a job interview (D):

9. Know common types of interviews.
10. Prepare for an interview.

Before learning how to describe effective follow-up techniques (E):

11. State the means used for following up on a job search.