



WOODWORKING AND FURNITURE MAKING

CABINETMAKING

PROGRAM OF STUDY

KZU-516

5530

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

CABINETMAKER

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INTRODUCTION

The *Cabinetmaking* 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 both the youth and adult sectors. It also provides the basis for organizing courses, planning teaching strategies, and designing instructional and evaluation materials.

The duration of the program is 1 650 hours, which includes 1 260 hours spent on the specific competencies required to practise the trade or occupation and 390 hours on general competencies. The program of study is divided into 26 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.

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 correctly perform a role, function, activity or task.

General Objectives

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

Operational Objectives

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

Module of a Program

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

Credit

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

PART I

1. SYNOPTIC TABLE

Number of modules: 26
 Duration in hours: 1 650
 Credits: 110

Cabinetmaking
 SIMCA: KZU-516
 SESAME: 5530

SIMCA	SESAME	TITLE OF THE MODULE	HOURS	CREDITS*
KEF-281	773-011	1. The Trade and the Training Process	15	1
KEF-282	773-024	2. Wood and Related Materials	60	4
KEF-283	773-033	3. Assembly Methods and Devices	45	3
KEF-284	773-046	4. Furniture Drafting and Designing	90	6
KEF-285	773-054	5. Hand Tools	60	4
KEF-286	773-061	6. Health and Safety	15	1
KEF-287	773-072	7. Mathematics	30	2
KEF-288	773-082	8. Portable Machine Tools	30	2
KEF-289	773-097	9. Stationary Machine Tools	105	7
KEH-281	773-102	10. Worksite Visits	30	2
KEH-289	773-113	11. Procedure Planning	45	3
KEG-283	773-138	12. Solid Wood Furniture I	120	8
KEG-284	773-148	13. Furniture Made of Sheet Materials	120	8
KEG-285	773-154	14. Patterns, Templates, Jigs and Fixtures	60	4
KEG-287	773-172	15. Furniture Styles	30	2
KEG-288	773-184	16. Shop Drawings and Sketches	60	4
KEG-286	773-165	17. Decorative Woodwork	75	5
KEG-289	773-192	18. Basic Veneering	30	2
KEH-281	773-203	19. Basic Marquetry	45	3
KEH-282	773-213	20. Furniture Carving	45	3
KEH-283	773-224	21. Furniture Finishing	60	4
KEH-284	773-238	22. Solid Wood Furniture II	120	8
KEH-285	773-246	23. Furniture Repair and Restoration	90	6
KEH-286	773-258	24. Staircases	120	8
KEH-287	773-264	25. Starting and Managing a Small Business	60	4
KEH-288	773-276	26. Practicum	90	6

* 15 hours = 1 credit

This program leads to an SSVD in Cabinetmaking.

2. PROGRAM TRAINING GOALS

The training goals of the *Cabinetmaking* program are based on the general goals of vocational education and take into account the specific nature of the trade or occupation. These goals are:

To develop effectiveness in the practice of a trade.

- To teach students to perform cabinetmaking tasks and activities correctly, at an acceptable level of competence for entry into the job market.
- To foster a constant concern for occupational health and safety.
- To develop in the students a concern for producing quality work.
- To enable students to develop safe, effective work habits.

To ensure integration into the working world.

- To familiarize students with the job market in cabinetmaking.
- To prepare students to enter the job market.

To foster the development of occupational knowledge.

- To help students understand the principles underlying the work of cabinetmaking.
- To foster independence and instill a sense of responsibility.

To ensure job mobility.

- To prepare students to perform a variety of cabinetmaking tasks.
- To make students aware of the need to pursue their professional development, to show a sense of creativity and to take pride in a job well done.

3. COMPETENCIES

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

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

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

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

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

GRID OF LEARNING FOCUSES		WORK PROCESS (major steps)										GENERAL COMPETENCIES (technology, personal development, etc.)										TOTALS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
SPECIFIC COMPETENCIES (directly related to the practice of the specific occupation)		FIRST-LEVEL OPERATIONAL OBJECTIVES		DURATION (IN HOURS)		Plan the work to be done		Carry out the work		Check the quality of the work		Maintain the machine tools		Complete a time sheet		Store the equipment and clean the work area		Determine their suitability for the trade and the working process		Apply their knowledge of solid wood, sheet materials and related materials		Apply their knowledge of assembly methods and devices		Draft furniture designs		Develop a sense of responsibility toward observing health and safety rules		Solve mathematics problems applied to woodworking		Develop a plan of procedure for making a piece of furniture or decorative woodwork		Learn about developments in furniture styles		Produce shop drawings and sketches		NUMBER OF OBJECTIVES		DURATION (IN HOURS)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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5	Process materials using hand tools	B	60	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	

- S: Situational objective
 B: Behavioural 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 *Cabinetmaking* program are presented below, along with the major statement of each corresponding first-level operational objective.

To develop in the students the competencies required to apply concepts related to making furniture and decorative woodwork in a cabinetmaking shop.

- Apply their knowledge of solid wood, sheet materials and related materials.
- Apply their knowledge of assembly methods and devices.
- Draft furniture designs.
- Solve mathematics problems applied to woodworking.
- Develop a plan of procedure for making a piece of furniture or decorative woodwork.
- Learn about developments in furniture styles.
- Produce shop drawings and sketches.

To develop in the students the competencies required for the safe use of the hand tools and machine tools employed in furniture making and woodworking in a cabinetmaking shop.

- Develop a sense of responsibility toward observing occupational health and safety rules.
- Process materials using hand tools.
- Process materials using portable machine tools.
- Process materials using stationary machine tools.

To develop in the students the competencies required to perform cabinetmaking tasks.

- Make solid wood furniture.
- Make furniture made of sheet materials.
- Design and make patterns, templates, jigs and fixtures.
- Make and install decorative woodwork.
- Finish furniture.
- Repair and restore furniture.
- Build and install staircases.

To develop in the students the competencies required to perform special cabinetmaking tasks.

- Produce basic veneering designs.
- Produce basic marquetry designs.
- Carve simple designs in furniture.
- Make furniture that has carved, veneered or curved parts.

To develop in the students the competencies required to enter the job market.

- Determine their suitability for the trade and the training process.
- Observe a worksite.
- Determine their suitability for starting and managing a small business.
- Enter the labour force.

5. FIRST- AND SECOND-LEVEL OPERATIONAL OBJECTIVES

5.1 DEFINITION

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

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

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

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

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

- learning involving prerequisite knowledge
- learning involving competencies

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

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

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

- The objective as a whole (i.e. the six components and in particular the last phase of a situational objective) determines or guides the overall learning and the integration and synthesis of this learning, allowing the competency to be developed fully.

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: KEF-281

SESAME: 773-011

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

LEARNING CONTEXT

PHASE 1: Information on the Trade

- Learning about the job market in the field of furniture making and woodworking: potential work environments, products, job prospects, wages, opportunities for promotion or transfer, selection criteria.
- Learning about the nature of, and the requirements for, the job of cabinetmaker: tasks, working conditions, evaluation criteria, workers' rights and responsibilities.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: Information on the Training Project

- Learning about the training project: program of study, training process, evaluation methods, certification of studies.
- Learning about the school environment: teaching and non-teaching staff, physical arrangement of premises, schedules, rules.

PHASE 3: Participation in the Training Process

- Reflecting on their personal preferences and aptitudes for cabinetmaking.
- Participating in suggested activities: talks with trade specialists, worksite visits, demonstrations, exhibitions, and so on.
- Discussing their views of the trade: advantages and disadvantages; requirements; knowledge, skills and attitudes required to practise the trade.
- Discussing their initial reactions to the program of study and the training process.

PHASE 4: Evaluation and Confirmation of Career Choice

- Producing a report in which they must:
 - state their opinions on the trade and trade-related job conditions.
 - explain their career choice by comparing their preferences and aptitudes with those required to practise the trade.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Encourage all the students to engage in discussions and to express their ideas.
- 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.
- Make available all pertinent documentation (e.g. information on the trade, the program of study).
- Organize meetings with trade specialists.
- Provide the students with an outline for their report.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

PARTICIPATION CRITERIA

PHASE 1:

- Gather information on the job market in furniture making and woodworking.
- Gather information on a cabinetmaker's tasks and working conditions.

PHASE 2:

- Gather information on the training process.
- Gather information on the school.

PHASE 3:

- Agree to think about their personal preferences and aptitudes.
- Participate in the suggested activities.
- Express their views on the trade, relating their opinions with the information they have gathered.
- Express their views on the program of study.

PHASE 4:

- Write a report that:
 - presents their opinions of the tasks and trade-related working conditions
 - explains how they arrived at their career choice, by comparing their preferences and aptitudes with those required to practise the trade

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. Identify different sources of information.
2. Apply a research method.
3. Compare different information.
4. Show interest in learning.

Before undertaking the activities of Phase 2:

5. Recognize the attitudes required to successfully complete the training.
6. Recognize the importance of being organized in one's work.
7. Identify the means that help students pass examinations.

Before undertaking the activities of Phase 3:

8. Understand the general process of communication.
9. Recognize the main obstacles to communication.
10. Strive to respect classmates' opinions.

Before undertaking the activities of Phase 4:

11. Strive to assess their career choices.
12. Accept comments from others.

MODULE 2: WOOD AND RELATED MATERIALS

SIMCA: KEF-282
SESAME: 773-024

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must apply their knowledge of solid wood, sheet materials and related materials in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using samples of solid wood, sheet materials and related materials

GENERAL PERFORMANCE CRITERIA

- Accurate distinction between the different solid wood species, sheet materials and related materials
- Appropriate choice of materials

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Choose the wood species commonly used in furniture making and woodworking.

- Appropriate choice of solid wood according to their:
 - properties
 - uses
 - quality
 - appearance (grain pattern, colour)

B. Choose sheet materials commonly used in furniture making and woodworking.

- Appropriate choice of sheet materials according to their:
 - properties
 - uses
 - quality

C. Choose related materials commonly used in furniture making and woodworking.

- Appropriate choice of sheet materials according to their:
 - properties
 - uses

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 wood species commonly used in furniture making and woodworking (A):

1. Explain how trees grow.
2. Recognize trees according to their external characteristics.
3. Associate different parts of a tree with their uses.
4. Recognize the importance of distinguishing clearly between wood species.

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MODULE 3: ASSEMBLY METHODS AND DEVICES

SIMCA: KEF-283
SESAME: 773-033

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **apply their knowledge of assembly methods and devices** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using demonstration samples
- Using assembly devices

GENERAL PERFORMANCE CRITERIA

- Appropriate choice of assembly methods and devices
- Concern for:
 - economical use of materials
 - sturdy assemblies
 - appearance of product

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Decide on the appropriate assembly methods used in furniture making or decorative woodworking.

- Appropriate decision according to:
 - the materials used
 - the sturdiness of the assembly devices
 - the appearance of the assembly devices

B. Choose the assembly devices used in furniture making.

- Appropriate choice according to:
 - the materials used
 - the use of the assembly devices
 - their sturdiness
 - their ease of use
 - their appearance
 - the weight of the components
 - the type of furniture or woodwork product

C. Choose assembly devices specifically used for decorative woodwork.

- Appropriate choice according to:
 - the materials used
 - the sturdiness of the assembly devices
 - their ease of use
 - their appearance

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 decide on the appropriate assembly methods used in furniture making or decorative woodwork (A):

1. Recognize the importance of assembly methods in furniture making.
2. Identify different types of solid wood, sheet materials and related materials.
3. Strive to take into consideration the criteria for selecting assembly methods and devices.

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MODULE 4: FURNITURE DRAFTING AND DESIGNING

SIMCA: KEF-284
SESAME: 773-046

Duration: 90 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **draft furniture designs** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- In a realistic situation resembling that occurring in a cabinetmaking shop: receiving an order for a piece of furniture according to a given style, dimensions, characteristics, and so on
- Using drafting instruments, equipment and materials

GENERAL PERFORMANCE CRITERIA

- Proper use of furniture design techniques
- Appropriate use of drafting instruments
- Accurate drawings
- Neat workmanship
- Concern for the appearance of the products

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Analyze the project.	- Rigorous analysis to determine accurate information on: • size of parts • construction processes • assembly processes • machining processes - Observance of standards - Careful presentation of project
B. Choose the drawing instruments and materials.	- Suitable choice according to: • the mode of graphic representation • the frequency of use of the original drawing
C. Organize the work station.	- Functional arrangement of work station
D. Sketch the furniture project: • made of solid wood • made of sheet materials • made of related materials • in modular form • in easy-to-assemble form	- Appropriate arrangement of views - Correct distribution of component parts - Accurate sketches - Suitable choice of scales
E. Complete the drawing using standard lines.	- Accurate linework - Accurate lines - Correct thicknesses of standard lines
F. Dimension the drawing and add the notes.	- Clear dimensioning - Accurate location of dimensions - Legible dimensions and notes
G. Fill in the title block.	- Complete, legible information

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 analyze the project (A):

1. Identify the main sources of information on furniture making and woodworking.
2. Strive to identify all the information contained in the plans.
3. Identify solid woods, sheet materials and related materials.
4. Identify methods of assembly.
5. Identify the kinds of hardware required.

Before learning how to organize the work station (C):

6. Be aware of the ergonomic principles related to organizing a work station.

Before learning how to sketch a furniture project made of solid wood, sheet materials or related materials, in modular form, or in easy-to-assemble form (D):

7. Draw geometric lines specifically used in furniture making and woodworking.
8. Strive to do the layout properly.
9. Strive to design drawings that are technically feasible.

Before learning how to complete the drawing using standard lines (E):

10. Recognize the importance of producing neat, legible drawings.

Before learning how to dimension the drawing and add the notes (F):

11. Strive to dimension and annotate the drawings correctly.



MODULE 5: HAND TOOLS

SIMCA: KEF-285
SESAME: 773-054

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
process materials using hand tools
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions and using perspective sketches
- Using selected boards of white pine

GENERAL PERFORMANCE CRITERIA

- Constant observance of occupational health and safety rules
- Appropriate use of hand tools
- Product conforming to data on sketches and instructions

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Interpret a perspective sketch and the instructions.
- B. Choose the materials.
- C. Choose the hand tools.
- D. Sharpen and adjust the tools and accessories.
- E. Perform operations such as:
 - measuring and layout
 - sawing
 - shaping
 - filing
 - assembling and clamping
 - sanding
- F. Store the tools and clean the work area.

SPECIFIC PERFORMANCE CRITERIA

- Accurate interpretation of sketch
- Accurate interpretation of instructions
- Suitable choice of materials, according to:
 - instructions
 - properties of materials
 - defects in materials
- Appropriate choice, according to:
 - materials
 - operations to be performed
- Use of proper sharpening and honing techniques
- Use of correct adjustment method
- Correct assessment of the condition of the tools
- Accurate measurements
- Clean layout
- Correct technique for using tools
- Quality of the surfaces
- Proper storage of tools and accessories
- Cleanliness of the work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to interpret a perspective sketch and the instructions (A):

1. Read the drawing.
2. Differentiate imperial measurements from metric measurements.
3. Be aware of the different forms of graphic representation.

Before learning how to choose the materials (B):

4. Identify the characteristics of softwoods.
5. Identify the characteristics of plywood.
6. Be aware of the different assembly methods.

Before learning how to perform operations such as measuring and layout, sawing, shaping, filing, assembling and clamping, and sanding (E):

7. Make an effort to use materials economically.
8. Develop organized work methods.

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

9. Develop the habit of keeping the work area clean.

MODULE 6: HEALTH AND SAFETY

SIMCA: KEF-286
SESAME: 773-061

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
develop a sense of responsibility toward observing occupational health and safety rules

SPECIFICATIONS

During this module, the students will:

- Become familiar with the trade-related hazards to their own and other people's health and safety.
- Develop a positive attitude towards the accident-prevention measures adopted in a cabinetmaking shop.
- Reflect on their personal attitudes towards occupational health and safety.

LEARNING CONTEXT

PHASE 1: Information on Occupational Health and Safety

- Learning about the major types of accidents and occupational diseases that occur in cabinetmaking: types of accidents, frequency, causes and effects.
- Learning about the measures to be implemented and the attitudes to be acquired to prevent accidents.
- Learning about the legal aspects related to occupational health and safety in furniture making and woodworking.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: Focus on the Importance of Observing Occupational Health and Safety Rules

- Conducting a personal examination of their attitudes and behaviour with respect to occupational health and safety.
- Taking part in a discussion on work-related accidents and occupational diseases in furniture making and woodworking.
- Taking part in activities (case studies) during which each student suggests different ways of preventing work accidents.

PHASE 3: Evaluation of Personal Behaviour and Attitudes Regarding Occupational Health and Safety

- Producing a report in which they must present:
 - the results of their research work on health and safety in furniture making and woodworking
 - their views on occupational health and safety
 - a summary of their behaviour and attitudes

INSTRUCTIONAL GUIDELINES

The teacher should:

- Create a climate conducive to research and discussion.
- Motivate the students to take part in the suggested activities.
- Help students become aware of the health and safety hazards in furniture making and woodworking.
- Make available all pertinent documentation.
- Strive to provide concrete examples.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

PARTICIPATION CRITERIA

PHASE 1:

- Gather information on the major work accidents and occupational diseases occurring in the field of furniture making and woodworking.
- Gather information on the measures to be implemented and the attitudes to be acquired to prevent accidents.
- Gather information on the legal aspects of occupational health and safety.

PHASE 2:

- Conduct a personal examination of their behaviour and attitudes.
- Express their opinions and arguments on health and safety hazards.
- Take part in the suggested activities.

PHASE 3:

- Write a report that presents:
 - the results of their research
 - their views on occupational health and safety
 - a summary of their behaviour and attitudes

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. Identify different sources of information.
2. Apply a research method.
3. Show interest in learning.

Before undertaking the activities of Phase 2:

4. Apply the basic principles of effective communication.
5. Recognize the importance of occupational health and safety rules.
6. Accept comments from others.
7. Strive to respect others' opinions.

Before undertaking the activities of Phase 3:

8. Be willing to be critical of their own behaviour and attitudes.
9. Be aware of the parts of a report.

MODULE 7: MATHEMATICS

SIMCA: KEF-287
SESAME: 773-072

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

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

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using a stock-cutting list
- Using speed and feed charts
- Using a calculator

GENERAL PERFORMANCE CRITERIA

- Correct analysis of problems
- Appropriate choice of formulas
- Correct application of formulas

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
A. Estimate the cost of a product.	- Accurate identification of main elements that determine the cost of a product - Accurate information concerning the cost of raw materials, that is: • accurate calculations of length, area and volume • accurate estimate of waste percentages - Accurate information concerning labour costs
B. Change the different speeds.	- Appropriate changes, according to: • materials • tools • cutting speed of tool • feed rates • machining process

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 estimate the cost of a product (A):

1. Master the four arithmetic operations.
2. Convert ordinary fractions into decimal fractions.
3. Strive to check the calculations.

Before learning how to change the different speeds (B):

4. Strive to determine the ideal speeds according to the quality of the machining and the tool life.

MODULE 8: PORTABLE MACHINE TOOLS

SIMCA: KEF-288
SESAME: 773-082

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
process materials using portable machine tools
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using an orthographic drawing
- Using selected boards of birch, cherry or maple

GENERAL PERFORMANCE CRITERIA

- Constant application of occupational health and safety rules
- Correct use of portable machine tools
- Product conforming to drawing and instructions

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

- | | |
|---|--|
| A. Interpret the orthographic drawing and the instructions. | <ul style="list-style-type: none"> - Accurate interpretation of drawing - Accurate interpretation of instructions |
| B. Choose the materials. | <ul style="list-style-type: none"> - Correct choice, according to instructions: <ul style="list-style-type: none"> • type of construction • type of finishing |
| C. Choose the portable machine tools and their cutting tools. | <ul style="list-style-type: none"> - Appropriate choice, according to: <ul style="list-style-type: none"> • materials • operations to be performed |
| D. Set up and adjust the cutting tools and the accessories. | <ul style="list-style-type: none"> - Observance of manufacturers' specifications - Safe setup and adjustment - Cleanliness of tools and maintenance systems |
| E. Perform operations such as: <ul style="list-style-type: none"> • sawing • forming • sanding • assembling | <ul style="list-style-type: none"> - Proper techniques for using machine tools - Correct positioning and holding of parts - Correct speeds, according to: <ul style="list-style-type: none"> • depth of cut • type of material • operation to be performed - Respect for machine-tool capability |
| F. Store the tools and clean the work area. | <ul style="list-style-type: none"> - Correct storage of cutting tools and accessories - Cleanliness of the work area |

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to interpret the orthographic drawing and the instructions (A):

1. Interpret lines, marks and symbols.
2. Recognize the different forms of graphic representation.

Before learning how to choose the materials (B):

3. Identify the characteristics of hardwoods and plywood.
4. Recognize the different assembly methods and devices.

Before learning how to set up and adjust the cutting tools and accessories (D):

5. Strive to observe the manufacturers' recommendations for setting up and adjusting the cutting tools and accessories.

Before learning how to perform operations such as sawing, forming, sanding and assembling (E):

6. Strive to use materials economically.
7. Develop organized work habits.
8. Strive to apply the occupational health and safety rules when using the different portable machine tools.

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

9. Develop the habit of keeping the work area orderly.

MODULE 9: STATIONARY MACHINE TOOLS

SIMCA: KEF-289
SESAME: 773-097

Duration: 105 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **process materials using stationary machine tools** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following a plan and instructions
- Using pieces of solid wood and sheet materials
- Using the cutting tools and accessories of stationary machine tools

GENERAL PERFORMANCE CRITERIA

- Constant application of occupational health and safety rules
- Correct use of stationary machine tools
- Product conforming to drawing and instructions

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

- | | |
|---|--|
| A. Interpret the plan and the instructions. | <ul style="list-style-type: none"> - Accurate interpretation of plan - Accurate interpretation of instructions |
| B. Choose the materials. | <ul style="list-style-type: none"> - Correct choice, according to instructions: <ul style="list-style-type: none"> • type of construction • type of finishing |
| C. Choose the stationary machine tools and their cutting tools. | <ul style="list-style-type: none"> - Appropriate choice, according to: <ul style="list-style-type: none"> • materials • operations to be performed |
| D. Set up and adjust the cutting tools and the accessories. | <ul style="list-style-type: none"> - Observance of manufacturers' specifications - Safe setup and adjustment - Cleanliness of tools and maintenance systems |
| E. Perform operations such as: <ul style="list-style-type: none"> • sawing • forming • sanding • assembling | <ul style="list-style-type: none"> - Proper techniques for using machine tools - Correct positioning and holding of parts - Correct speeds, according to: <ul style="list-style-type: none"> • desired machining quality • depth of cut • type of material • operation to be performed |
| F. Maintain the machine tools. | <ul style="list-style-type: none"> - Maintenance in accordance with manufacturers' specifications |
| G. Store the tools and clean the work area. | <ul style="list-style-type: none"> - Correct storage of cutting tools and accessories - Cleanliness of the work area |

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to interpret the plan and the instructions (A):

1. Interpret lines, marks and symbols.
2. Recognize the different forms of graphic representation.

Before learning how to choose the materials (B):

3. Identify the characteristics of hardwoods and sheet materials.
4. Recognize the different assembly methods and devices.

Before learning how to set up and adjust the cutting tools and accessories (D):

5. Strive to observe the manufacturers' recommendations for setting up and adjusting the cutting tools and accessories.

Before learning how to perform operations such as sawing, forming, sanding and assembling (E):

6. Strive to use materials economically.
7. Develop organized work habits.
8. Strive to apply the occupational health and safety rules when using the different stationary machine tools.

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

9. Develop the habit of keeping the work area orderly.

MODULE 10: WORKSITE VISITS

SIMCA: KEG-281
SESAME: 773-102

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
observe a worksite

SPECIFICATIONS

During this module, the students will:

- Identify the organizational features of mass production cabinetmaking and woodworking businesses and small cabinetmaking shops.
- Identify the work methods specific to each business and workshop.
- Write a summary of training needs in relation to the requirements of the worksites visited.

LEARNING CONTEXT

PHASE 1: Information Prior to Visiting the Worksite

- Preparing to observe real working conditions in a mass production cabinetmaking and woodworking business and in a small cabinetmaking shop:
 - learning about the objectives of the visits
 - learning how the visits will be conducted
 - gathering information on the businesses and shops: business name, location, types of products, company rules, and so on

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT

PHASE 2: Observation of the Worksite

- Participating in visits to mass production cabinetmaking and woodworking businesses and cabinetmaking shops:
 - respecting the schedules and rules of the worksites visited
 - showing interest
 - being courteous
- Recording their observations about:
 - mass production cabinetmaking and woodworking businesses:
 - types of production
 - function of the different departments in the business
 - layout of premises
 - tasks of machine setup operators
 - organization of work stations
 - work methods
 - equipment
 - production processes
 - cabinetmaking shops:
 - types of production
 - layout of premises
 - tasks of cabinetmakers
 - organization of work stations
 - work methods
 - equipment
 - production processes
 - job planning
- Participating in discussions on the similarities and differences among the businesses, workshops and the school's training centre.

PHASE 3: Evaluation

- Producing a report in which they must present:
 - a brief comparison of the businesses and shops visited
 - an explanation of the similarities and differences between the worksites visited and the school's training centre.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

INSTRUCTIONAL GUIDELINES

The teacher should:

- Make contact with the managers of mass production cabinetmaking and woodworking businesses and cabinetmaking shops (it would be advisable to organize visits to a variety of worksites: companies producing furniture, doors, windows, and so on).
- Provide students with observation checklists and questionnaires.
- Promote discussion and self-expression.
- Motivate students to become involved in pre-visit preparation.
- Provide students with an outline for their reports.

PARTICIPATION CRITERIA

PHASE 1:

- Gather information on the worksites to be visited.

PHASE 2:

- Participate in the visits (obey rules and schedules, show interest and be courteous).
- Submit a short report of their observations and comments on each business or workshop visited, after each visit.
- Discuss the similarities and differences between the school and the worksite.

PHASE 3:

- Write a report that presents:
 - a brief comparison of the businesses and workshops visited
 - an explanation of the similarities and differences between the school and the worksite

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. Describe their expectations concerning the worksite visits.
2. Identify different mass production cabinetmaking and woodworking businesses and cabinetmaking shops.
3. Show interest in learning.

Before undertaking the activities of Phase 2:

4. Make sure they clearly understand the procedures for the worksite visits.
5. Make an effort to obey the rules of the businesses and workshops.
6. Recognize the importance of tact and discretion during the visits.
7. Listen carefully to explanations.
8. Develop observation skills.
9. Record their observations.
10. Communicate effectively during discussions.

Before undertaking the activities of Phase 3:

11. Differentiate between the major and the minor points to observe.
12. Compare data obtained.
13. Understand how a report is structured.

MODULE 11: PROCEDURE PLANNING

SIMCA: KEH-289
SESAME: 773-113

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must develop a plan of procedure for making a piece of furniture or decorative woodwork in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using the plan of a piece of furniture or decorative woodwork (e.g. chair, chest, table, door, window)
- Following instructions
- Using a given stock-cutting list
- Using a production analysis checklist
- Using relevant documents

GENERAL PERFORMANCE CRITERIA

- Correct production planning
- Use of appropriate terminology

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Interpret the plan.

- Accurate interpretation of plan
- Accurate transposition of information concerning:
 - standard lines
 - symbols

B. Analyze the information required to produce a stock-cutting list.

- Rigorous analysis of information concerning:
 - dimensions of the details
 - overall dimensions
 - assembly methods
 - types of mouldings
 - types of materials

C. Produce a stock-cutting list.

- Accurate information contained on the list, that is:
 - names of the parts and pieces
 - location of the parts and pieces
 - number of parts and pieces
 - sizes of the parts and pieces
 - types of materials
- Clear schematic diagrams of the irregularly shaped parts

D. Analyze the information required for the productions.

- Rigorous analysis of the information concerning:
 - types of materials
 - production steps
 - machining operations
 - machine tools, cutting tools and accessories to be used
 - safety aspects

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
E. Produce a plan of procedure.	- Careful, legible presentation - Correct sequencing of production steps - Relevant information provided

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 interpret the plan (A):

1. Recognize the importance of planning in furniture making and woodworking.
2. Identify geometric shapes.
3. Identify the different forms of graphic representation used in furniture and woodwork design.
4. Identify the lines, linework, symbols and types of dimensioning.
5. Improve their spatial perception.

Before learning how to analyze the information required to produce a stock-cutting list (B):

6. Identify the characteristics of solid wood, sheet materials and related materials.
7. Identify the main assembly methods and devices.
8. Interpret the terminology related to furniture and woodworking.
9. Be aware of different types of mouldings.

Before learning how to produce a stock-cutting list (C):

10. Show concern for properly organizing the information gathered.

Before learning how to analyze the information required for the productions (D):

11. Identify different hand tools, portable machine tools and stationary machine tools.
12. Be aware of the processes that can be performed with hand tools, portable machine tools and stationary machine tools.
13. Show concern for producing feasible plans of procedure.
14. Develop the habit of being able to work independently.

MODULE 12: SOLID WOOD FURNITURE I

SIMCA: KEG-283
SESAME: 773-138

Duration: 120 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
make solid wood furniture
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using the plan of a piece of furniture with surfaces that are essentially straight
- Following instructions
- Using materials such as pine, oak, birch, cherry or maple
- Using the necessary hand tools and machine tools

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Economical use of materials
- Qualities required:
 - furniture conforming to plan
 - sturdy assemblies
 - appropriate surface conditions

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Interpret the plan.

- Accurate interpretation of plan

B. Prepare the solid wood.

- Correct planning of cutting sequence:
 - accurate stock-cutting list
 - appropriate selection of wood
- Appropriate selection of sawing and planing machine tools
- Accurate verification of safety devices
- Safe use of machine tools
- Smooth, flawless surfaces

C. Mark and lay out the different components.

- Correct use of standard signs when marking the surfaces
- Accurate layout

D. Shape solid wood stock:

- shaping assemblies
- cutting
- profiling
- turning

- Appropriate choice of shaping machine tools
- Appropriate choice, setup and adjustment of tools and accessories
- Respect for machine-tool capability
- Mastery of production processes
- Correct use of safety devices
- Quality of surfaces:
 - correct machine processing
 - absence of splinters and dents

E. Locate and shape openings for the hardware.

- Accurate location
- Correct shaping

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

F. Assemble the components.

- Appropriate choice of assembly devices, equipment and clamping accessories
- Use of correct clamping method
- Correct verification of:
 - alignment
 - assembly angles
 - parallel, level and square surfaces

G. Sand the furniture.

- Appropriate choice of sanding accessories and equipment
- Appropriate choice of abrasives, according to the materials used and the desired finish
- Use of correct sanding method and procedure

H. Check the quality of the work.

- Proper quality control

I. Maintain the machine tools.

- Maintenance in accordance with manufacturers' specifications

J. Complete a time sheet.

- Accurate recording

K. Store the tools and clean the work area.

- Proper storage of tools
- Cleanliness of the work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to interpret the plans (A):

1. Identify the different forms of graphic representation.
2. Interpret the symbols and codes used in furniture design.

Before learning how to prepare the solid wood (B):

3. Draw up a stock-cutting list.
4. Plan the cutting sequence.
5. Explain the operation of cutting and planing machine tools.
6. Describe the processes that can be carried out on cutting and planing machine tools.
7. Understand the setups for cutting and planing machine tools.

Before learning how to mark and lay out the different components (C):

8. Use layout instruments.
9. Identify layout methods.

Before learning how to shape solid wood stock: shaping assemblies, cutting, profiling, turning (D):

10. Explain how shaping machine tools operate.
11. Explain how cutting machine tools operate.
12. Explain how profiling machine tools operate.
13. Explain how drilling machine tools operate.
14. Explain how turning machine tools operate.
15. Strive to observe occupational health and safety rules.

Before learning how to locate and shape openings for the hardware (E):

16. Identify different types of hardware.

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 assemble the components (F):

- 17. Identify the assembly methods.
- 18. Use assembly equipment, accessories and tools.

Before learning how to sand the piece of furniture (G):

- 19. Use sanding tools and machine tools.
- 20. Strive to achieve quality work.

Before learning how to check the quality of the work (H):

- 21. Make an effort to check the quality of the work.

Before learning how to maintain the machine tools (I):

- 22. Identify the rules for maintaining and adjusting different machine-tool devices.

Before learning how to complete a time sheet (J):

- 23. Name the items found on a time sheet.

Before learning how to clean up the work area (K):

- 24. Make an effort to store the tools and clean the work area.

MODULE 13: FURNITURE MADE OF SHEET MATERIALS

SIMCA: KEG-284
SESAME: 773-148

Duration: 120 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
make furniture made of sheet materials
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using the plan of a piece of furniture
- Following instructions
- Using sheet materials such as plywood, particleboard, laminated hardboard or plastic laminates
- Using the necessary hand tools and machine tools

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Economical use of materials
- Qualities required:
 - furniture conforming to plan
 - sturdy assemblies
 - appropriate surface conditions

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Interpret the plan.

- Accurate interpretation of the plan

B. Cut the construction materials.

- Correct planning of cutting sequence:
 - accurate stock-cutting list
 - appropriate choice of materials
 - correct schematic diagram of the cutting pattern
- Correct verification of safety devices
- Safe use of panel saw
- Quality of the cuts

C. Mark and lay out the various components.

- Correct use of standard signs when marking the surfaces
- Accurate layout

D. Shape the different elements:

- forming the assemblies
- applying the edge banding
- applying plastic laminate to surfaces

- Appropriate choice of shaping machine tools
- Appropriate choice, setup and adjustment of tools and accessories
- Respect for machine-tool capability
- Mastery of procedures for making assemblies
- Mastery of techniques for applying edge bands
- Mastery of technique for applying plastic laminates
- Correct use of safety devices
- Quality of the shaping:
 - precision
 - sturdiness

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

E. Locate and shape openings for the hardware.

- Accurate location
- Correct shape

F. Assemble the components.

- Appropriate choice of assembly devices, equipment and clamping accessories
- Correct use of clamping method
- Correct assembly:
 - accurate assembly angles
 - precise joints

G. Sand the piece of furniture.

- Appropriate choice of sanding accessories and equipment
- Appropriate choice of abrasives, according to materials used and desired finish
- Use of correct sanding method and procedure

H. Check the quality of the work.

- Correct quality control

I. Maintain the machine tools.

- Maintenance in accordance with manufacturers' specifications

J. Complete a time sheet.

- Accurate recording

K. Store the tools and clean the work area.

- Proper storage of tools
- Cleanliness of the work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to interpret the plan (A):

1. Identify the different forms of graphic representation.
2. Interpret the symbols and codes used in furniture design.

Before learning how to cut the construction materials (B):

3. Produce a stock-cutting list.
4. Plan the cutting sequence.
5. Explain how a panel saw operates.
6. Understand the setups for a panel saw.

Before learning how to mark and lay out the different components (C):

7. Use measuring and layout instruments.
8. Identify layout methods.

Before learning how to shape the different elements (i.e. forming the assemblies, applying edge bands, applying plastic laminate to surfaces (D):

9. Explain how shaping machine tools operate.
10. Explain the operation of the machine tools used to apply edge bands on the sides of the sheet materials.
11. Strive to observe the occupational health and safety rules when using shaping machines.

Before learning how to locate and shape openings for hardware (E):

12. Identify the different types of hardware.

Before learning how to assemble the components (F):

13. Identify different assembly methods.
14. Use assembly equipment, accessories and 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 sand the piece of furniture (G):

- 15. Use sanding accessories and machines.
- 16. Strive to achieve quality work.
- 17. Identify different sanding methods.
- 18. Identify the characteristics of abrasives.
- 19. Detect visually and manually the quality of the sanding.

Before learning how to check the quality of the work (H):

- 20. Strive to check the quality of their products.
- 21. Be aware of quality-control methods.

Before learning how to maintain the machine tools (I):

- 22. Identify the rules for maintaining and adjusting the different devices on machine tools.

Before learning how to complete a time sheet (J):

- 23. Recognize the importance of completing a time sheet properly.

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

- 24. Make an effort to store the tools and clean the work area.

MODULE 14: PATTERNS, TEMPLATES, JIGS AND FIXTURES

SIMCA: KEG-285
SESAME: 773-154

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **design and make patterns, templates, jigs and fixtures** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using the plan of a piece of furniture or woodwork product requiring the use of a pattern, template, jig or fixture
- Using the necessary materials, tools, machine tools and accessories
- Using an existing pre-cut component of a piece of furniture

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Proper design of fixtures and jigs
- Appropriate application of techniques for making patterns, templates, jigs and other fixtures

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

- | | |
|--|---|
| A. Interpret the plan. | - Accurate interpretation of the plan |
| B. Decide on the appropriateness of using patterns, templates, jigs and fixtures. | - Correct decision regarding the use of patterns, templates, jigs and fixtures |
| C. Choose the cutting tools, accessories and machine tools necessary for making parts shaped by means of jigs. | - Suitable choice of cutting tools, accessories and machine tools, according to: <ul style="list-style-type: none"> • depth and height of cut • length and shape of workpiece |
| D. Determine the systems for holding workpieces and for handling and positioning jigs. | - Accurate determination and positioning of systems, according to the form and dimensions of the workpieces to be shaped |
| E. Determine the shape and dimensions of fixtures and jigs. | - Accurate determination of shape and dimensions of fixtures and jigs, according to: <ul style="list-style-type: none"> • the surface of the workpiece • the surface used for the holding and handling systems |
| F. Choose the materials, hand tools, machine tools and accessories required for making patterns, templates, jigs and fixtures. | - Suitable choice of materials, according to: <ul style="list-style-type: none"> • type of pattern, template, jig and fixture • shape and dimensions of patterns, templates, jigs and fixtures • rigidity • frequency of use - Suitable choice of hand tools, machine tools and accessories |

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

G. Lay out the templates.

- Accurate layout of lines and contours

H. Cut out the contours.

- Observance of layout lines
- Safe use of hand tools and machine tools

I. Adjust the shapes.

- Precise adjustments made to the:
 - patterns and templates
 - fixtures, if necessary
 - jigs

J. Install the jigs.

- Sturdy installation

K. Verify the design and construction of the fixtures and jigs.

- Proper verification of the construction of:
 - fixtures:
 - accurate shape
 - sturdiness
 - jigs:
 - easy, safe handling and use

L. Catalogue and store the patterns, templates, jigs and fixtures.

- Appropriate cataloguing and storage

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 interpret the plan (A):

1. Be aware of the different forms of graphic representation used in furniture making and woodworking.
2. Be aware of the information contained in the plans.

Before learning how to choose the cutting tools, accessories and machine tools necessary for making parts shaped by means of jigs (C):

3. Be aware of the cutting tools and accessories associated with adjustment and profiling operations carried out with the use of jigs and fixtures.
4. Identify the machine tools associated with adjustment and profiling operations carried out with the use of jigs and fixtures.

Before learning how to choose the materials, hand tools, machine tools and accessories required for making patterns, templates, jigs and fixtures (F):

5. Identify the materials, hand tools, machine tools and accessories used for making patterns, templates, jigs and fixtures.

Before learning how to lay out the templates (G):

6. Explain how to trace templates.
7. Use measuring and layout instruments.

Before learning how to cut out the contours (H):

8. Describe the procedures for sawing and cutting out patterns, templates, jigs and fixtures.
9. Use sawing and cutting machine 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 adjust the shapes (I):

10. Describe the techniques for using the tools necessary for adjusting the shapes of patterns, templates, jigs and fixtures.
11. Use adjustment tools.

Before learning how to verify the design and construction of the fixtures and jigs (K):

12. Develop the habit of detecting mistakes.

MODULE 15: FURNITURE STYLES

SIMCA: KEG-287
SESAME: 773-172

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
learn about developments in furniture styles.

SPECIFICATIONS

During this module, the students will:

- Gather information on different furniture styles by reading general and trade magazines and attending lectures, conferences, exhibitions, and so on.
- Show that they can analyze modern furniture designs.
- Decide on the authenticity of a furniture style.

LEARNING CONTEXT

PHASE 1: Information on Furniture Styles

- Gathering general information on what is meant by style:
 - definition of style
 - major points that characterize a style: types of furniture, decorative features, raw materials, assemblies, and so on
- Gathering general information on the characteristics of different styles and decorative features for the following periods:
 - Middle Ages
 - France:
 - Renaissance
 - Louis XIII
 - Louis XIV
 - French Regency
 - Louis XV

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT

- Louis XVI
- Directoire and French Empire
- Restoration
- Louis-Philippe
- Second Empire (Napoleon III)
- 1900 — Art Nouveau — Art Deco

- England and United States
 - Elizabethan
 - Jacobean
 - William & Mary and Queen Anne
 - Duncan Phyfe
 - Chippendale
 - Adam Bros.
 - Hepplewhite
 - Sheraton
 - English Regency
 - Victorian

PHASE 2: Participation

- Reflecting on the importance of being personally interested in furniture styles and on their feelings about each style.
- Participating in the suggested activities: visiting a museum, an antique shop, and so on.
- Doing a research project bearing specifically on Québec furniture:
 - types of furniture in Québec
 - French styles that have had a strong and a moderate influence on furniture in Québec
 - English and American styles that have had a strong and a moderate influence on furniture in Québec
 - criteria for recognizing period furniture
 - other
- Attending other students' presentations.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

PHASE 3: Evaluation

- Taking part in a discussion in which each student talks about the importance of being interested in the evolution of furniture styles.
- Evaluating their participation in the activities.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Promote discussion and encourage each student to express his or her ideas.
- Motivate students to take part in the suggested activities.
- Make available documents and materials.
- Organize a visit to a museum, an antique shop, an auction, and so on.

PARTICIPATION CRITERIA

Students must:

PHASE 1:

- Gather information on style.
- Gather information on the characteristics of French, English and American styles.

PHASE 2:

- Be willing to reflect on the issues covered.
- Participate in the suggested activities.
- Submit their research work.
- Show interest during the other students' presentations.

PHASE 3:

- Participate in the discussion.
- Evaluate their participation in the activities.

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. Identify different sources of information.
2. Apply a research method.
3. Compare facts.
4. Show interest in learning.
5. Identify the characteristics of solid woods and sheet materials.
6. Identify the characteristics of assembly methods and devices.

Before undertaking the activities of Phase 2:

7. Be willing to observe the rules of effective communication.
8. Be willing to respect the opinions of others.
9. Develop the ability to work as part of a team.

Before undertaking the activities of Phase 3:

10. Be willing to assess their participation in the activities.
11. Accept comments from others.

MODULE 16: SHOP DRAWINGS AND SKETCHES

SIMCA: KEG-288
SESAME: 773-184

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
produce shop drawings and sketches
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using a plan showing irregularly shaped parts requiring a working drawing
- Following instructions
- Using drafting instruments and supplies (e.g. cardboard, fiberboard, plywood)

GENERAL PERFORMANCE CRITERIA

- Proper use of techniques for making working drawings and detail drawings
- Proper use of measuring and layout instruments
- Accurate drawings
- Observance of time limit for producing drawings and sketches

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Interpret the plan.

- B. Choose the measuring and layout instruments and the materials.

- C. Produce the shop drawings:
 - working drawings
 - detail drawings

- D. Produce the sketches.

SPECIFIC PERFORMANCE CRITERIA

- Accurate interpretation of:
 - shapes to be drawn
 - parts to be reproduced

- Suitable choice of instruments and materials

- Quality of the working drawings:
 - accurate reproduction of the actual size of the items used to build the product
 - correct projection of extension lines
 - correct positioning of lines
- Quality of the detail drawings:
 - accurate representation of the sections of the parts and their position in relation to the height and width of the product
 - correct projection of extension lines

- Proper proportions
- Clear, accurate views
- Complete, legible dimensioning

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 interpret the plan (A):

1. Be aware of the different forms of graphic representation commonly used in furniture making and decorative woodworking.
2. Gather information contained in the plans.

Before learning how to choose the measuring and layout instruments and supplies (B):

3. Identify measuring and layout instruments.
4. Be aware of layout supplies.

Before learning how to produce shop drawings: working drawings and detail drawings (C):

5. Be aware of geometric shapes.
6. Produce basic geometric drawings.
7. Be aware of assembly methods.

Before learning how to produce sketches (D):

8. Practise making usable sketches.
9. Practise sketching quickly.

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MODULE 17: DECORATIVE WOODWORK

SIMCA: KEG-286
SESAME: 773-165

Duration: 75 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **make and install decorative woodwork** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using a plan of a piece of decorative woodwork: door, window, panelling, cornice or baseboard
- Following instructions
- Using solid wood (pine, oak, birch, cherry, maple) or sheet materials
- Using the necessary hand tools and machine tools

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Economical use of materials
- Appropriate use of hand tools and machine tools

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- A. Plan the work.

- B. Verify whether the dimensions on the plan correspond to those of the area where the woodwork is to be installed.

- C. Cut the construction materials.

- D. Mark and lay out the different components.

- E. Shape the different elements:
 - forming the assemblies
 - cutting
 - adjusting
 - profiling
 - turning

SPECIFIC PERFORMANCE CRITERIA

- Accurate interpretation of the terminology related to decorative woodwork
- Accurate interpretation of the plan
- Realistic planning of work

- Correct verification of the correspondance of the dimensions

- Correct cutting sequence
- Appropriate selection of cutting and planing machine tools
- Correct verification of safety devices
- Safe use of machine tools
- Smooth, flawless surfaces

- Suitable use of standard signs when marking the surfaces
- Accurate layout

- Appropriate choice of shaping machine tools
- Appropriate selection, setup and adjustment of tools and accessories
- Respect for machine-tool capability
- Mastery of construction processes
- Correct use of safety devices
- Quality of the surfaces:
 - correct machining process
 - absence of splinters and dents

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

F. Locate and shape openings for the hardware.

- Accurate location
- Correct shaping

G. Assemble the components.

- Appropriate choice of assembly devices, equipment, and clamping accessories
- Correct clamping method
- Correct verification of:
 - alignment
 - assembly angles
 - parallel, level and plumb surfaces

H. Sand the decorative woodwork.

- Appropriate choice of sanding equipment and accessories
- Appropriate choice of abrasives, according to materials used and desired finish
- Correct sanding method and procedure

I. Check the quality of the work.

- Correct quality control

J. Prepare the woodwork components for transportation.

- Appropriate packing
- Correct and safe handling of components

K. Do the verification prior to the installation.

- Verification according to the type of woodwork made

L. Adjust and install:

- doors and windows
- panelling
- baseboards and cornices

- Correct method of installing the different woodwork products
- Correct functioning of hinged parts
- Accurate adjustments
- Sturdy installations
- Flawless surfaces

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

- M. Check the quality of the installations.
- N. Complete the time sheet.
- O. Store the tools and clean the work area.

SPECIFIC PERFORMANCE CRITERIA

- Correct quality control
- Accurate recording
- Proper storage
- Cleanliness of the work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to plan the work (A):

1. Recognize the importance of planning in terms of the quality of the work.
2. Identify the characteristics of solid wood, sheet materials and related materials.
3. Identify the characteristics of assembly methods and devices used specifically in ornamental woodworking.
4. Identify different forms of graphic representation.
5. Interpret the symbols and codes used in furniture design.

Before learning how to verify whether the dimensions on the plan correspond to those of the area where the woodwork is to be installed (B):

6. Use measuring and layout instruments.

Before learning how to cut the construction materials (C):

7. Plan the cutting sequence.
8. Use cutting and planing machine tools.
9. Assess the quality of the planed workpieces.

Before learning how to mark and layout the different components (D):

10. Identify the standard signs used when marking the surfaces.
11. Be aware of different layout methods.
12. Use working drawings and detail drawings.

Before learning how to shape the different elements: forming the assemblies, cutting, adjusting, profiling, turning (E):

13. Design and make jigs.
14. Use shaping machine tools.
15. Strive to observe the occupational health and safety rules when using the machine 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 locate and shape openings for the hardware (F):

16. Identify the different types of hardware.

Before learning how to assemble the components (G):

17. Use clamping equipment and accessories.
18. Design and build clamps or other fixtures.

Before learning how to sand the decorative woodwork (H):

19. Identify sanding methods.
20. Choose abrasives.
21. Use sanding accessories and machine tools.
22. Check visually and manually the quality of the sanding.

Before learning how to adjust and install doors and windows, panelling, baseboards and cornices (L):

23. Identify different types of fastening devices.
24. Use sawing, planing and drilling hand tools and machine tools.

MODULE 18: BASIC VENEERING

SIMCA: KEG-289
SESAME: 773-192

Duration: 30 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must produce basic veneering designs in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using a plan of a piece of furniture with parquetry in diagonal shapes such as diamond, reverse diamond, box and herringbone
- Using selected sheets of mahogany or walnut veneer
- Using a particleboard core
- Using selected wood bandings
- Using the appropriate hand and machine tools (e.g. a veneer trimmer or a circular saw; veneer saw)

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Correct application of veneering techniques
- Quality of the results:
 - accurate layout
 - appearance

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

A. Interpret the plan and specifications.

B. Choose the veneer flitches and bandings.

C. Match the veneer flitches.

D. Cut the veneer flitches.

E. Prepare:

- the kraft-paper base
- the core

SPECIFIC PERFORMANCE CRITERIA

- Accurate interpretation of the plan and specifications:
 - veneer patterns to be made
 - quality and characteristics of the materials
- Suitable choice of flitches, according to:
 - desired pattern
 - grain pattern
 - colour
- Suitable choice of bandings, according to the type of veneering
- Accurate matching
- Correct numbering of veneer flitches
- Safe use of hand and machine tools
- Correct preparation and setup of machines
- Correct use of hand cutting techniques
- Correct preparation of kraft-paper base:
 - safe use of circular saw
 - appropriate preparation and application of kraft paper
- Correct preparation of core:
 - accurate cutting of core
 - accurate trial placement of veneer assembly
 - correct application and levelling of edge bandings

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

F. Assemble the elements of the design.

- Use of correct technique for assembling elements on a flat, rigid surface:
 - accurate joints
 - correct alignment of joints
- Use of correct technique for assembling elements on a kraft-paper base:
 - accurate layout
 - accurate assembly of all the elements

G. Apply adhesive to the core and arrange the elements of the design.

- Suitable choice of adhesive
- Use of correct technique for applying adhesive
- Correct reference points
- Correct drying time

H. Prepare the surfaces for finishing.

- Correct trimming of the contour of the design
- Correct preparation of surfaces:
 - elimination of adhesive paper
 - elimination of excess adhesive
 - correct scraping and sanding of surfaces

I. Maintain the machine tools.

- Maintenance in conformity with manufacturers' standards

J. Store the tools and clean up the work area.

- Correct storage and cleaning

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 interpret the plan and specifications (A):

1. Identify the different forms of graphic representation.
2. Interpret the codes and symbols used in furniture design.
3. Identify the characteristics of the materials.
4. Be aware of the main veneer designs and backgrounds.

Before learning how to choose the veneer flitches and bandings (B):

5. Explain the cutting techniques used in veneering and marquetry.
6. Be aware of the classification of veneer flitches.

Before learning how to match the veneer flitches (C):

7. Strive to produce accurate, meticulous work.

Before learning how to cut the veneer flitches (D):

8. Set up the machine tools.
9. Use hand and machine cutting tools.
10. Observe occupational health and safety rules.

Before learning how to apply adhesive to the core and arrange the elements of the design (G):

11. Use a veneer press.
12. Identify the characteristics of adhesives for veneers.
13. Make sure to allow enough time for drying.

Before learning how to prepare the surfaces for finishing (H):

14. Identify different types of abrasives.

Before learning how to maintain the machine tools (I):

15. Identify the techniques for maintaining different machine tools.

MODULE 19: BASIC MARQUETRY

SIMCA: KEH-281
SESAME: 773-203

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must produce basic marquetry designs in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using a plan of a piece of furniture with a simple marquetry design (e.g. flowers, leaves or landscape)
- Using veneer sheets pre-selected according to the desired design
- Using a core of particleboard or fibreboard
- Using the appropriate hand and machine tools such as a veneer trimmer, a fret saw, a veneer knife (45° blade) and a precision scroll saw

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Use of correct marquetry techniques
- Qualities required:
 - shapes conforming to original design
 - accurate assemblies
 - aesthetic appearance

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

A. Interpret the plan, the drawing and the specifications.

- Accurate interpretation of:
 - the plan
 - the drawing
 - the specifications

B. Prepare the design.

- Suitable choice of means of reproducing the design
- Appropriate colouring of drawing in accordance with instructions
- Accurate cutting of each design element

C. Choose the veneers.

- Suitable choice of veneers according to:
 - wood species
 - colour and possibilities of colouring them
 - texture
 - distinctive features

D. Prepare the veneer packs.

- Safe use of circular saw with sliding table, veneer saw and veneer trimmer
- Exact dimensions of different elements
- Correct stacking of different elements
- Correct fastening of elements in stack
- Correct gluing and placement of design on veneer pack

E. Prepare the background veneer.

- Observance of instructions regarding the correct reassembly of the design
- Correct application of veneering techniques

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

F. Cut the design elements and lay them out on the felt board.

- Suitable preparation of the felt board
- Use of correct cutting technique
- Safe use of veneer trimmer, fret saw, precision scroll saw or veneer knife
- Correct arrangement of elements, according to the design

G. Shade the elements.

- Correct temperature of the sand
- Tones and shaded surfaces conforming to colours on design

H. Glue the background veneer onto the kraft-paper base and inlay the veneer elements.

- Appropriate preparation of the kraft-paper base
- Correct gluing and accurate placement of background veneer on the kraft-paper base
- Correct gluing and inlaying of veneer elements
- Correct gluing of veneer borders and bandings

I. Fill the gaps between the veneer elements.

- Suitable preparation of mixture used to fill the gaps:
 - colour
 - consistency
 - temperature
- Correct application of mixture

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

J. Glue the marquetry onto the core.

- Suitable preparation of core
- Safe use of veneer presses
- Accurate placement of elements
- Suitable choice of adhesives
- Use of correct clamping techniques
- Correct drying time

K. Prepare the surfaces for finishing.

- Correct preparation of surfaces:
 - humidifying surfaces and eliminating paper stuck to the design surface
 - eliminating extra adhesive
 - correct scraping and sanding of surfaces

L. Maintain the machine tools.

- Maintenance in accordance with manufacturers' specifications

M. Store the tools and clean the work area.

- Proper storage and cleaning

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 interpret the plan, drawing and specifications (A):

1. Identify the different forms of graphic representation.
2. Interpret the codes and symbols used in furniture design.
3. Identify the characteristics of materials used in veneering.
4. Be aware of the main furniture styles.

Before learning how to choose the veneers (C):

5. Explain the techniques for cutting veneer used specifically in veneering and marquetry.
6. Be aware of the classification of veneers used in cabinetmaking.
7. Be aware of the criteria for choosing veneers used in cabinetmaking.

Before learning how to prepare the veneer packs (D):

8. Use veneer saws, circular saws sliding tables and veneer trimmers.

Before learning how to cut the design elements and lay them out on the felt board (F):

9. Use a precision scroll saw.
10. Use cutting and planing machine tools.

Before learning how to shade the elements (G):

11. Develop the habit of working accurately and meticulously.

Before learning how to glue the veneer elements onto the kraft-paper base and inlay the veneer elements (H):

12. Make a kraft-paper base.

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 glue the marquetry onto the core (J):

- 13. Use a veneer press.
- 14. Identify the characteristics of the adhesives used in veneering.

Before learning how to prepare the surfaces for finishing (K):

- 15. Identify different types of abrasives.
- 16. Identify different ways of preparing surfaces.

MODULE 20: FURNITURE CARVING

SIMCA: KEH-282
SESAME: 773-213

Duration: 45 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must
carve simple designs in furniture
in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using a plan of a piece of furniture with simple designs to be carved in relief, such as leaves and scallops
- Using a drawing of the design
- Using wood panels
- Using appropriate tools such as gouges, chisels, and skew chisels

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Proper sequence of steps for each type of carving operation
- Qualities required:
 - correct, accurate representation of pattern
 - aesthetic appearance
 - careful finishing

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Interpret the plan, the drawing and the specifications.

- Accurate interpretation of the plan, drawing and specifications:
 - the type of carving to be done
 - the pattern to be carved
 - the characteristics of the materials

B. Prepare the materials such as:

- wood panels
- wood blocks

- Appropriate preparation of panels to produce low-relief carvings and engraved carvings:
 - safe use of planing and cutting hand and machine tools
 - appropriate assembly of elements
 - smooth surface
 - accurate dimensions
- Appropriate preparation of wood blocks to produce full-round carvings:
 - correct gluing and clamping of elements

C. Transfer the design(s) onto the materials.

- Suitable choice of method of reproducing the design, according to the type of carving
- Neat layout
- Use of correct method for transferring pattern onto material

D. Choose and sharpen the tools.

- Suitable choice of tools, according to the type of carving
- Use of correct sharpening technique

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

E. Produce:

- low-relief carvings
- engraved carvings
- full-round carvings

- Correct production of low-relief carvings:
 - correct use of plan of procedure
 - correct sketching of reference lines
 - accurate shapes and contours
 - appropriate and safe use of tools
- Correct production of engraved carvings:
 - conformity to drawing
 - accurate engraving lines
 - appropriate and safe use of tools
- Correct production of full-round carvings:
 - conformity to drawing
 - correct highlighting of details
 - appropriate and safe use of tools

F. Apply protective coatings and finishes.

- Appropriate preparation of surfaces
- Suitable choice of products
- Observance of application procedure for:
 - oils
 - waxes
 - varnishes

G. Store the tools and clean up the work area.

- Proper storage and cleaning

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 interpret the plan, the drawing and the specifications (A):

1. Identify the different forms of graphic representation.
2. Interpret the codes and symbols used in furniture design.
3. Identify the characteristics of solid wood.
4. Associate the main types of decorative carving with furniture styles.

Before learning how to prepare the materials: wood panels and wood blocks (B):

5. Use planing and cutting tools and machine tools.
6. Use clamping tools and accessories.
7. Strive to observe the occupational health and safety rules.

Before learning how to transfer the design(s) onto the materials (C):

8. Identify the procedures for reproducing designs.
9. Trace the geometric patterns.

Before learning how to produce low-relief carvings, engraved carvings and full-round carvings (E):

10. Use cutting tools and machine tools.
11. Make templates.

Before learning how to apply protective coatings and finishes (F):

12. Identify different types of abrasives.
13. Identify different sanding methods.
14. Prepare the surfaces.

MODULE 21: FURNITURE FINISHING

SIMCA: KEH-283
SESAME: 773-224

Duration: 60 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

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

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using parts or pieces of furniture or decorative woodwork with surfaces that are ready to be finished
- Using materials such as paint, dyes and varnish
- Using the necessary equipment and accessories

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Correct application of finishing techniques
- Careful finishing
- Economical use of materials

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

- | | |
|--|---|
| A. Assess the condition of the surfaces to be coated. | <ul style="list-style-type: none"> - Accurate assessment of the condition of surfaces: <ul style="list-style-type: none"> • absence of stains • absence of scratches • absence of splinters • smooth, flat surfaces |
| B. Choose the finishing materials. | <ul style="list-style-type: none"> - Appropriate choice of materials |
| C. Choose the accessories and equipment appropriate for finishing furniture and decorative woodwork. | <ul style="list-style-type: none"> - Suitable choice of: <ul style="list-style-type: none"> • brushes • spray guns • spray systems |
| D. Mask the surfaces to be protected. | <ul style="list-style-type: none"> - Use of correct masking technique |
| E. Apply the finishing materials. | <ul style="list-style-type: none"> - Safe use of equipment and accessories - Use of correct technique for each type of finishing material - Observance of drying time |
| F. Check the quality of the work. | <ul style="list-style-type: none"> - Correct quality control |
| G. Maintain the equipment and accessories. | <ul style="list-style-type: none"> - Cleanliness of accessories - Correct maintenance of equipment |
| H. Store the tools and clean up the work area. | <ul style="list-style-type: none"> - Proper storage of materials, accessories and equipment - Cleanliness of the work area |

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to assess the condition of the surfaces to be finished (A):

1. Interpret the instructions.
2. Develop organized work methods.
3. Recognize the importance of properly assessing the condition of the surfaces.

Before learning how to apply the finishing materials (E):

4. Strive to use the correct techniques for applying finishing materials.

Before learning how to check the quality of the work (F):

5. Recognize the importance of quality control.

Before learning how to store the tools and clean up the work area (H):

6. Understand the need to store the accessories and materials.

2. The second section addresses the challenges faced by organizations in managing their data and information. It highlights the increasing volume of data generated by various sources and the complexity of integrating this information into a cohesive system. The text suggests that organizations should invest in advanced data management tools and technologies to ensure that their data is secure, accessible, and usable for decision-making.

3. The third part of the document focuses on the role of leadership in driving organizational success. It argues that effective leaders are those who can inspire and motivate their teams, set clear goals, and foster a culture of innovation and collaboration. The text suggests that leaders should also be transparent in their communication and open to feedback from their subordinates.

4. The fourth section discusses the importance of continuous learning and development for individuals and organizations alike. It suggests that organizations should provide opportunities for their employees to acquire new skills and knowledge, both on and off the job. This can be achieved through formal training programs, workshops, and conferences, as well as through informal learning experiences such as mentoring and peer-to-peer learning.

5. The final part of the document concludes by emphasizing the need for organizations to remain agile and adaptable in a rapidly changing environment. It suggests that organizations should regularly assess their strategies and processes, and be willing to make changes when necessary. This flexibility is crucial for staying competitive and achieving long-term success.

MODULE 22: SOLID WOOD FURNITURE II

SIMCA: KEH-284
SESAME: 773-238

Duration: 120 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **make furniture that has carved, veneered or curved parts** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Using a plan of a piece of furniture made of parts with many different kinds of surfaces
- Following instructions
- Using materials such as pine, oak, birch, cherry, maple, walnut or mahogany
- Using the necessary hand and machine tools
- Using templates, fixtures and jigs

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Economical use of materials
- Qualities sought:
 - furniture conforming to plan
 - sturdy assemblies
 - appropriate surface conditions
 - accurate shapes
 - careful finishing

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Plan the work to be done.

- Accurate interpretation of the plan
- Feasible plan of procedure

B. Prepare the solid wood.

- Correct cutting sequence
- Correct construction and use of templates
- Appropriate choice of materials
- Appropriate choice of cutting and planing machine tools
- Correct verification of safety devices
- Safe use of machine tools
- Smooth, flawless surfaces

C. Mark and lay out the different components.

- Suitable use of standard signs when marking the surfaces
- Sound use of working drawings and detail drawings
- Accurate layout

D. Shape solid wood:

- forming assemblies
- cutting
- profiling
- turning
- fine-tuning
- bending and gluing

- Appropriate choice of machine tools
- Appropriate choice, setup and adjustment of tools and accessories
- Correct design, construction and use of jigs
- Respect for machine-tool capability
- Mastery of construction processes
- Correct use of safety devices
- Quality of the surfaces:
 - surface condition
 - correct machine processing
 - absence of splinters and dents

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

E. Carve and veneer the components.

- Carving:
 - appropriate choice of carving materials
 - suitable composition of panels with respect to:
 - distortion
 - grain direction
 - colour
 - appropriate choice of means of reproducing the patterns to be carved
- Veneering:
 - appropriate choice of core materials
 - mastery of matching and assembly techniques
 - appropriate choice of clamping equipment and accessories
 - quality of the surfaces

F. Locate and shape openings for the hardware.

- Accurate location
- Correct shaping

G. Assemble the component parts.

- Appropriate choice of assembly devices and clamping equipment and accessories
- Correct design and use of jigs
- Observance of clamping method
- Correct verification of:
 - alignment
 - assembly angles
 - parallel, level and plumb surfaces
 - precisely measured shapes

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE	
SPECIFICATIONS OF THE EXPECTED BEHAVIOUR	SPECIFIC PERFORMANCE CRITERIA
H. Sand the piece of furniture.	- Appropriate choice of sanding accessories and equipment - Appropriate choice of abrasives, according to the materials used and the desired finish - Use of correct sanding method and procedure
I. Apply finishing materials.	- Visual and manual verification of surface conditions - Appropriate choice of finishes and equipment for spraying and manual application - Appropriate use of equipment
J. Check the quality of the work.	- Correct quality control
K. Maintain the machine tools.	- Correct maintenance in accordance with manufacturers' specifications
L. Complete the time sheet.	- Accurate recording
M. Store the tools and clean up the work area.	- Appropriate storage of tools - Cleanliness of the work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

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

1. Interpret the plan.
2. Develop organized work methods.

Before learning how to prepare the solid wood (B):

3. Plan the cutting sequence.
4. Make templates.
5. Choose the materials.
6. Explain how cutting and planing machine tools operate.
7. Describe the procedures that can be performed on cutting and planing machine tools.
8. Be aware of the setups of cutting and planing machine tools.
9. Assess the quality of the parts.

Before learning how to mark and lay out the different components (C):

10. Identify the standard signs used to mark the surfaces.
11. Use layout instruments.
12. Identify layout methods.
13. Use working drawings and detail drawings.

Before learning how to shape solid wood: forming assemblies, cutting, profiling, turning, fine-tuning, bending and gluing (D):

14. Design and make jigs.
15. Explain the operation of shaping, cutting, profiling, turning and drilling machine tools.
16. Explain the operation of machine tools used for fine-tuning parts.
17. Explain the operation of accessories used for bending parts.
18. Strive to observe occupational health and safety rules when using shaping machine 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 carve and veneer the components (E):

- 19. Produce basic veneering and marquetry work.
- 20. Demonstrate a sense of aesthetics.
- 21. Use woodcarving tools.

Before learning how to locate and shape openings for the hardware (F):

- 22. Identify different types of hardware.

Before learning how to assemble the component parts (G):

- 23. Identify different assembly methods.
- 24. Use clamping equipment, accessories and tools.
- 25. Design and make templates.

Before learning how to sand the piece of furniture (H):

- 26. Identify different sanding methods.
- 27. Choose the abrasives.
- 28. Use sanding hand tools and machine tools.
- 29. Detect visually and manually the quality of the work.

Before learning how to apply finishing materials (I):

- 30. Choose the finishes.
- 31. Use finishing equipment.
- 32. Strive to apply the finishes properly.

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 check the quality of the work (J):

33. Recognize the importance of quality control.

Before learning how to maintain the tools and machine tools (K):

24. Identify the rules for maintaining and adjusting different machine-tool devices.

MODULE 23: FURNITURE REPAIR AND RESTORATION

SIMCA: KEH-285
SESAME: 773-246

Duration: 90 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

To demonstrate the required competency, the students must **repair and restore furniture** in accordance with the following conditions, criteria and specifications.

CONDITIONS FOR PERFORMANCE EVALUATION

- Following instructions
- Using furniture that requires different kinds of repairs: blisters, burn marks, scratches, stains, compressed wood fibres, and so on
- Using the appropriate materials for stripping, filling and touch-up operations
- Using the appropriate tools

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Appropriate use of tools and machine tools
- Furniture having regained its original aspect:
 - no joints visible
 - no surface defects
 - proper grain and colour
 - repaired shapes and dimensions matching those of original piece of furniture

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

- | | |
|--|--|
| <p>A. Assess the repair or restoration work to be done.</p> | <ul style="list-style-type: none"> - Suitable assessment regarding: <ul style="list-style-type: none"> • feasibility • expertise required • availability of equipment • costs |
| <p>B. Plan the work to be done.</p> | <ul style="list-style-type: none"> - Appropriate plan of procedure, according to: <ul style="list-style-type: none"> • kind of repair or restoration • necessary steps |
| <p>C. Disassemble the piece of furniture, if necessary.</p> | <ul style="list-style-type: none"> - Accurate location of marks for reassembly - Appropriate precautions taken during disassembly operation - Observance of disassembly sequence - Observance of disassembly methods - Appropriate use of tools and accessories |
| <p>D. Do the repair or restoration work:</p> <ul style="list-style-type: none"> • repairing the surfaces • repairing or replacing the mechanisms on moveable parts • shaping a part | <ul style="list-style-type: none"> - Quality of the parts shaped: <ul style="list-style-type: none"> • respect for special features and characteristics of parts copied • appropriate and safe use of tools, accessories and machine tools - Correct repair or replacement of moveable mechanisms: <ul style="list-style-type: none"> • suitable choice of corrections to be made • appropriate functioning of moveable mechanisms |

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

- | | |
|--|---|
| E. Sand the repaired part of the furniture. | <ul style="list-style-type: none"> - Appropriate repair of surfaces: <ul style="list-style-type: none"> • suitable choice of strippers and fillers • observance of filling and touch-up methods |
| F. Reassemble the furniture, if necessary. | <ul style="list-style-type: none"> - Appropriate choice of sanding accessories and equipment - Appropriate choice of abrasives, according to the materials used and the desired finish - Observance of sanding methods and procedure |
| G. Apply the touch-up and finishing materials. | <ul style="list-style-type: none"> - Observance of reassembly sequence - Appropriate use of clamping tools and accessories - Appropriate precautions taken during reassembly |
| H. Complete the time sheet. | <ul style="list-style-type: none"> - Visual and manual verification of surface conditions - Appropriate choice of finishing materials - Appropriate use of tools and equipment |
| I. Store the tools and clean up the work area. | <ul style="list-style-type: none"> - Accurate recording - Proper storage of tools - Cleanliness of the work area |

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

Before learning how to assess the repair or restoration work to be done (A):

1. Define the terms *restoration* and *repair*.
2. Be aware of the processes that can be performed with hand tools and machine tools.
3. Calculate the cost of restoring or repairing a product.

Before learning how to disassemble the piece of furniture, if necessary (C):

4. Use the appropriate disassembly tools.

Before learning how to do the repair or restoration work: repairing the surfaces, repairing or replacing the mechanisms on moveable parts, shaping a part (D):

5. Explain the operation of sawing, planing, shaping, cutting, turning and drilling machine tools.
6. Use woodcarving and marquetry hand tools.
7. Strive to observe occupational health and safety rules when using shaping tools and machine tools.

Before learning how to sand the repaired part of the furniture (E):

8. Identify different sanding methods.
9. Choose the abrasives.
10. Use sanding tools, accessories and machine tools.
11. Detect visually and manually the quality of the sanding.

Before learning how to apply the touch-up or finishing materials (G):

12. Choose the finishes.
13. Use finishing equipment.
14. Strive to apply the finishes properly.

MODULE 24: STAIRCASES

SIMCA: KEH-286
SESAME: 773-258

Duration: 120 hours

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

EXPECTED BEHAVIOUR

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

CONDITIONS FOR PERFORMANCE EVALUATION

- Using information on:
 - the dimensions of the stairwell and ceiling height
 - the type of staircase
- Using the appropriate layout instruments and drawing equipment

GENERAL PERFORMANCE CRITERIA

- Observance of occupational health and safety rules
- Observance of construction standards for staircases
- Appropriate planning and organization of work
- Rigidity of the staircase

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

A. Plan the work to be done.

- Feasible plan of procedure
- Complete recording of information on the design and installation:
 - type of staircase to be built, if necessary
 - good-quality and accurate sketch of installation area
 - accurate dimensions
 - condition of the wall surfaces and their straightness
 - square and plumb surfaces

B. Design the staircase:

- doing the calculations for building the staircase
- making a working drawing

- Accurate calculations of:
 - run and rise
 - treads and risers
 - stairwell
 - headroom

C. Shape:

- stringers
- treads and risers

- Appropriate choice of materials
- Appropriate preparation of materials
- Accurate transfer of pattern from working drawing
- Safe use of hand tools and machine tools
- Accurate shaping

D. Sand the staircase components.

- Suitable choice of abrasives
- Appropriate use of sanding tools, accessories and machine tools

**FIRST-LEVEL OPERATIONAL OBJECTIVE
BEHAVIOURAL OBJECTIVE**

**SPECIFICATIONS OF THE EXPECTED
BEHAVIOUR**

**SPECIFIC PERFORMANCE
CRITERIA**

E. Assemble the staircase components.

- Appropriate use of tools and portable machine tools
- Observance of assembly sequence
- Accurate connection of treads and risers with stringer (open riser with tread supported on stringer only)
- Accurate assembly of treads

F. Shape the banister.

- Accurate shaping of:
 - balusters
 - newel post
 - handrail

G. Fasten the banister.

- Accurate location of balusters either on the treads, stringer or bottom rail
- Appropriate preparation of fastening systems
- Accurate cutting of length of balusters
- Appropriate fastening of handrail

H. Prepare the staircase components for transportation.

- Correct, safe handling of components
- Appropriate precautions taken for transportation

I. Establish the anchor points.

- Correct establishment of anchor points

FIRST-LEVEL OPERATIONAL OBJECTIVE BEHAVIOURAL OBJECTIVE

SPECIFICATIONS OF THE EXPECTED BEHAVIOUR

SPECIFIC PERFORMANCE CRITERIA

J. Reassemble and fasten the staircase and banister.

- Appropriate reassembly and anchoring of staircase:
 - observance of reassembly sequence
 - accurate location of staircase
 - appropriate anchoring of staircase
 - appropriate fastening of mouldings and base mouldings
- Appropriate reassembly and fastening of handrail and balusters

K. Complete the finishing.

- Appropriate verification of and corrections made to assembly joints:
 - treads and stringer
 - treads and risers
 - balusters and handrail
- Correct repair of surface defects
- Suitable choice of finishing products
- Correct application of finishing products

L. Verify the quality of the installation.

- Correct quality control

M. Complete a time sheet.

- Accurate recording

N. Store the tools and clean up the work area.

- Appropriate storage
- Cleanliness of the work area

SECOND-LEVEL OPERATIONAL OBJECTIVES

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

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

1. Recognize the importance of planning to achieve quality work.
2. Identify the characteristics of solid wood.
3. Identify assembly methods and devices used specifically in building staircases.
4. Apply organized work methods.
5. Use layout and measurement instruments.

Before learning how to design a staircase: doing calculations for building the staircase, making a working drawing (B):

6. Solve geometry and trigonometry problems.
7. Produce working drawings.

Before learning how to shape stringers, treads and risers (C):

8. Use sawing, planing and shaping machine tools.
9. Design and make templates.
10. Strive to observe the occupational health and safety rules when using the hand tools and machine tools.

Before learning how to sand the staircase components (D):

11. Use sanding tools and accessories.
12. Choose the abrasives.
13. Assess the quality of the sanding.

Before learning how to assemble the staircase components (E):

14. Use clamping and assembly equipment and accessories.

Before learning how to prepare the staircase components for transportation (H):

15. Be aware of the precautions to be taken during transportation.

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 establish the anchor points (I):

16. Identify the types of walls and anchors.

Before learning how to reassemble and fasten the staircase and banister (J):

17. Use portable sawing, planing, drilling and screwing hand tools and machine tools.

Before learning how to complete the finishing (K):

18. Correct the defects caused during installation.
19. Choose finishing products.
20. Apply finishing products.

MODULE 25: STARTING AND MANAGING A SMALL BUSINESS

SIMCA: KEH-287
SESAME: 773-264

Duration: 60 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
determine their suitability for starting and managing a small business.

SPECIFICATIONS

During this module, the students will:

- Learn the factors to be considered in starting a business.
- Learn the main aspects involved in managing a business.
- Assess their entrepreneurial potential.
- Participate in producing and marketing a product made of wood, sheet materials or related materials.

LEARNING CONTEXT

PHASE 1: Information on Starting and Managing a Small Business

- Learning about the qualities required to be an entrepreneur.
- Learning about the factors to consider in starting a business:
 - advantages and disadvantages of different forms of business ownership
 - government requirements and financial and other assistance given to businesses
 - organizational structure of a business
 - capital
 - leasing and insurance
- Learning about the main marketing aspects:
 - market study
 - marketing plan

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

LEARNING CONTEXT (cont'd)

- Learning about the main production aspects:
 - production planning
 - inventory
 - layout of premises and equipment
 - manufacturing processes
 - quality control
 - safety aspects
- Learning about the financial aspects related to business management:
 - budgets
 - financial statements
 - operational costs
 - pricing of products
 - break-even point

PHASE 2: Involvement in Starting and Managing a Business

- Comparing their personal qualities with those required to be an entrepreneur
- Participating in the decisions involved in starting a small cabinetmaking business
 - legal form of business ownership
 - company name
 - each person's role and functions
 - identifying market needs
 - types of products
 - production planning
 - task assignments
- Participating in production jobs.
- Participating in quality control.
- Participating in marketing the product.

PHASE 3: Evaluation of Their Entrepreneurial Qualities

- Producing a summary of the positive and negative aspects of their personalities with respect to entrepreneurship.
- Expressing opinions on their positive and negative sides of starting and managing a business.
- Discussing how their current experience might affect the way they might plan to launch a cabinetmaking business.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

INSTRUCTIONAL GUIDELINES

The teacher should:

- Ensure that publications on starting and managing a business are available to the students.
- Ensure that equipment and material such as solid wood, sheet materials, related materials and assembly devices are available to the students.
- Organize the teaching to simulate a real situation involving the starting and managing of a small cabinetmaking business.
- Rely on the help of resource persons from the work force, if necessary.
- Motivate the students to carry out the suggested activities.
- Promote the integration of the competencies acquired in other modules.
- Take into account the strengths of the students when deciding on task assignments.
- Encourage students to find an appropriate way of solving any conflicts that might arise during the project.

PARTICIPATION CRITERIA

Students must:

PHASE 1:

- Gather information on the qualities required to be an entrepreneur.
- Gather information on starting a business.
- Gather information on the main marketing aspects.
- Gather information on the main production aspects.
- Gather information on the financial aspects involved in business management.

PHASE 2:

- Compare their personal qualities with those required to be an entrepreneur.
- Participate in the decisions involved in starting a small cabinetmaking business.
- Participate in production jobs.
- Participate in quality control.
- Participate in marketing the product.

**FIRST-LEVEL OPERATIONAL OBJECTIVE
SITUATIONAL OBJECTIVE**

PHASE 3:

- Produce a summary of the positive and negative aspects of their personalities as entrepreneurs.
- Express their opinions on their positive and negative sides of starting and managing a business.
- Discuss how their current experience might affect the way they might plan to launch a cabinetmaking business.

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. Know the characteristics of local small cabinetmaking and woodworking businesses.
2. Locate sources of information on starting and managing a small business.
3. Use a research method.
4. Calculate the cost price of a product.

Before undertaking the activities of Phase 2:

5. Show a sense of creativity.
6. Draw objects made of wood or related materials.
7. Use hand tools and machine tools for sawing, forming, sanding and assembling.
8. Apply finishing techniques.
9. Strive to observe occupational health and safety rules.
10. Show interest in quality and productivity.
11. Know quality control methods.
12. Strive to communicate ideas clearly.
13. Identify decision-making methods.
14. Know the steps involved in conflict resolution.

Before undertaking the activities of Phase 3:

15. Agree to assess their own participation in the activities.

MODULE 26: PRACTICUM

SIMCA: KEH-288

SESAME: 773-276

Duration: 90 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 prepare to enter the labour force.

SPECIFICATIONS

During this module, the students will:

- Discover different aspects of the job market in cabinetmaking.
- Perform different cabinetmaking tasks.
- Observe shop rules.
- Communicate with the shop personnel and their superiors.

LEARNING CONTEXT

PHASE 1: Seeking a Practicum Position

- Making a list of local cabinetmaking shops willing to accept trainees.
- Searching for a practicum position.
- Signing a contract with the practicum supervisor in the shop.
- Finding out about the shop rules.

PHASE 2: Participating in the Workplace

- Observing the workplace: organization, equipment, procedures, working conditions, and so on.
- Performing or helping to perform different cabinetmaking tasks.
- Observing shop rules.
- Sharing information and conversing with the shop personnel.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

PHASE 2 (cont'd)

- Adopting a positive attitude during the practicum.
- Recording observations in a practicum journal.

PHASE 3: Evaluating the Practicum

- Producing a practicum report containing:
 - their observations
 - the tasks performed
 - the similarities and differences between the training school and the workplace.
- Participating in evaluating their practicums with the other trainees and the teaching staff:
 - discussing their observations, the problems they had, and so on.
 - evaluating how they fit into the workplace.

INSTRUCTIONAL GUIDELINES

The teacher should:

- Maintain a good relationship with the cabinetmaking shop supervisors.
- Provide information on cabinetmaking shops.
- Help students look for a practicum position.
- Supervise trainees on a regular basis.
- Ensure that trainees are constantly supervised by the shop monitor.
- Provide the outline of a report.
- Promote group discussion particularly while students are seeking practicum positions and evaluating their practicums.

FIRST-LEVEL OPERATIONAL OBJECTIVE SITUATIONAL OBJECTIVE

PARTICIPATION CRITERIA

Students must:

PHASE 1:

- Make a list of local cabinetmaking shops.
- Seek a practicum position.
- Sign a contract.
- Find out about shop rules.

PHASE 2:

- Observe the workplace.
- Perform the required tasks correctly and safely.
- Observe rules.
- Engage in discussions with shop personnel.
- Accept other people's comments.
- Record their observations.

PHASE 3:

- Write a practicum report.
- Participate in evaluating their practicums.
- Evaluate their participation in the suggested activities.

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. Describe the steps in planning a search for a practicum position.
2. Show interest in doing a practicum.

Before undertaking the activities of Phase 2:

3. Describe the type of behaviour to adopt during a practicum.
4. Acknowledge the importance of observing shop rules.
5. Strive to observe occupational health and safety rules.
6. Perform different cabinetmaking tasks.
7. Demonstrate a positive attitude.

Before undertaking the activities of Phase 3:

8. List their attitudes, preferences and interests.
9. Strive to produce a well-written practicum report.
10. Accept comments from others.

