

Analysis and Planning Tables

5750

Residential and Commercial Drafting

Training Sector

7

Buildings
and Public Works

Reach for
your **Dreams**

Québec 

Analysis and Planning Tables

5750

Residential and Commercial Drafting

Training Sector

7

Buildings
and Public Works

Formation professionnelle et technique
et formation continue

Direction générale des programmes
et du développement

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ANALYSIS AND PLANNING TABLES, INFORMATION ON THE EVALUATION, EVALUATION FORMS

Module 1 – The Trade and the Training Process	
Module 2 – Using a Computer	
Module 3 – Architectural Drawing Components	
Module 4 – Basic Functions of Drafting Software Applications	
Module 5 – Architectural Objects	
Module 6 – Architectural Plans: Single-Family Dwellings	
Module 7 – Health and Safety on Construction Sites	
Module 8 – Advanced Functions of Drawing Software Applications	

Module 9 – Reinforced Concrete Drawings
Module 10 – Construction Site Data
Module 11 – Information Related to Plumbing
Module 12 – Plumbing Plans
Module 13 – Wall Sections and Detail Drawings
Module 14 – Estimating Quantities
Module 15 – Steel Structure Assembly Drawings
Module 16 – Structural Steel Shop Drawings
Module 17 – Architectural Plans: Multi-Family Dwellings
Module 18 – Information Related to Electricity
Module 19 – Electrical Plans
Module 20 – Presentation Drawings
Module 21 – Job Search Techniques
Module 22 – Information Related to Ventilation
Module 23 – Ventilation Plans
Module 24 – Commercial Building Plans
Module 25 – Entering the Work Force

INTRODUCTION

This document is intended to provide support for instructional planning and to facilitate the work required to implement the *Residential and Commercial Drafting* program. It may be considered an interface between the program produced by the Ministère de l'Éducation, du Loisir et du Sport and the work carried out in vocational training centres with respect to the development of learning activities and the production of teaching and evaluation materials.

This document is designed to ensure greater consistency between the objectives of the program and the means taken to help develop them and verify that they have been attained. It is also intended to make it easier to integrate both formative and summative evaluation activities into the teaching and learning process. Finally, it facilitates instructional planning by presenting all this information in one document.

The proposed instructional planning strategy implies the participation of teachers. While they have less leeway in defining the main elements of instructional planning, they play a greater role in producing the learning activities.

To make it easier for teachers to participate in this regard and to promote the sharing of learning activities, the Ministère has made this document available on the Internet, more specifically on the *Inforoute FPT* Web site.

This document is divided into two parts. Part One contains a description of the instructional planning model, information on the program and elements of instructional planning specific to the program. Part Two contains a guide on how to read the different tables and, for each module in the program, analysis and planning tables that contain details on learning and evaluation, information on the evaluation and an evaluation form.

PART ONE

INSTRUCTIONAL PLANNING MODEL

The proposed instructional planning model is consistent with:

- the characteristics of competency-based programs
- a vision of learning that fosters the construction of competencies
- the principles of the evaluation of learning in vocational training
- increasing the involvement of vocational training teachers in the instructional planning of both learning and evaluation

1. CONCEPT OF COMPETENCY

A competency is the ability to act successfully and evolve

- in order to adequately perform work-related tasks or activities
- based on an organized body of knowledge, skills from a variety of fields, perceptions, attitudes, etc.

2. ELEMENTS OF THE INSTRUCTIONAL PLANNING MODEL

This instructional planning model includes the following elements:

- a logic diagram showing the teaching sequence
- proposed educational aims
- analysis and planning tables featuring:
 - learning focuses, guidelines and learning activities for each competency in a program
 - evaluation indicators and criteria together with their respective weighting, evaluation strategies, for both formative evaluation and evaluation used for certification, for each competency in a program
- information on the evaluation and evaluation forms

3. INSTRUCTIONAL PLANNING PROCESS

In the instructional planning model used in vocational training, certain instructional planning elements are defined by a team composed of content specialists, a program development consultant and an evaluation consultant, while other elements are under the responsibility of the teachers of the program in question. The instructional planning process described below takes into account this sharing of responsibilities and consists of the following steps:

- Step 1: Analyzing the program
- Step 2: Analyzing the logic diagram showing the teaching sequence
- Step 3: Becoming familiar with the proposed educational aims, adapting these aims and determining ways of incorporating them into the teaching
- Step 4: Appropriating the information provided in the analysis and planning tables
- Step 5: Determining a teaching sequence for the different learning focuses, developing learning activities and producing learning and evaluation materials
- Step 6: Planning material organization

Step 1: Analyzing the program

The instructional planning process should start with a careful reading of the program. Teachers will find it useful to consult all the operational objectives in order to get an overview of the competencies to be acquired.

Teachers should also spend time closely examining the grid of competencies in order to fully understand the relationships between specific and general competencies as well as the functional links shown on the grid.

In this document, a synoptic table for the program and the grid of competencies are found in the section “Information on the Program.”

Step 2: Analyzing the logic diagram showing the teaching sequence

Teachers should become familiar with the logic diagram showing the teaching sequence in order to fully understand the general order in which competencies are to be acquired, and to identify those competencies which are prerequisites to other competencies, those competencies for which there are no specific prerequisites, and those competencies that should or could be developed simultaneously.

The logic diagram showing the teaching sequence is found in the section “Elements of Instructional Planning.”

Step 3: Becoming familiar with the proposed educational aims, adapting these aims and determining ways of incorporating them into the teaching

Educational aims are educational goals that are based on important values and concerns and that serve to guide activities with students in a certain direction each time an appropriate situation presents itself. These aims, which are ongoing, allow students to develop habits, attitudes or skills that have not generally been the focus of specific objectives, but which are nonetheless important.

Teachers should become familiar with the educational aims proposed by the development team, adapt or enhance these aims and determine ways of incorporating them into their teaching.

The proposed educational aims are found in the section “Elements of Instructional Planning.”

Step 4: Appropriating the information provided in the analysis and planning tables

This involves reading the tables related to the program modules. Although teachers are generally responsible for only one or a few modules at most, it is important that they familiarize themselves with all the analysis and planning tables in order to fully understand how the learning focuses, guidelines, and evaluation indicators and criteria are distributed throughout the program.

A study of the analysis and planning tables presupposes a thorough understanding of the instructional planning model, particularly, the competency acquisition process which is explained under point 4 of this section. The operational objectives, the grid of competencies and the

proposed educational aims also help in understanding the information presented in the analysis and planning tables.

Part Two of this document presents a guide on how to read the analysis and planning tables as well as the tables themselves for each of the modules.

Step 5: Determining a teaching sequence for the different learning focuses, developing learning activities and producing learning and evaluation materials

The learning focuses are presented in the analysis and planning tables, according to the structure of the operational objective and not necessarily according to a teaching sequence. Teachers will have to establish the teaching sequence as they see fit. They will then have to develop learning activities and produce learning materials.

Teachers are to prepare learning activities by referring to the information in the analysis and planning tables (acquisition phases, learning focuses, guidelines). In this regard, teachers will find it useful to consult Table 3, *Learning Activities Involved in the Acquisition of a Competency*, and Table 4, *Training Environment for the Acquisition of a Competency*, both found under point 4 of this section.

As for formative evaluation, teachers will prepare materials by referring to the formative evaluation criteria in the analysis and planning tables, and will make sure that formative evaluation activities are integrated into the learning activities. In terms of evaluation for purposes of certification, teachers are required to comply with the appropriate specifications in the analysis and planning tables of the module in question, since the specifications are prescriptive. Preparation of evaluation materials for certification purposes must take into account the information on the evaluation and the evaluation form which accompany the analysis and planning tables for each module.

In carrying out this step, teachers will also find it useful to consult the “Evaluation Framework” found under point 5 of this section, and the section “How to Read Analysis and Planning Tables, Information on the Evaluation and Evaluation Forms” found in Part Two of this document.

Step 6: Planning material organization

Teachers are required to plan material organization with due consideration for the specifications contained in the organizational guide. To determine the required setting or context, teachers may consult Table 4, “Training Environment for the Acquisition of a Competency,” found under point 4 of this section.

4. PHASES OF ACQUISITION OF A COMPETENCY

In order to structure the analysis, it is helpful to refer to the general process of competency acquisition. Five major phases lead to the acquisition of a competency:

- exploration
- basic learning
- practice
- transfer
- enrichment

The **exploration phase** is intended to highlight the relevance of the competencies to be acquired so as to increase students' motivation and facilitate learning. It can also allow students to confirm their career choice and help introduce them to the training process.

The **basic learning phase** focuses on the cornerstones of the competencies, that is, all of the knowledge, skills from various fields, attitudes and perceptions that make it possible for students to adequately perform an occupational task or activity. The essence of the competency and its potential are developed in this phase.

The **practice phase** relates to the more “operational” dimension of the competency. The focus is on the integration of basic knowledge involved in carrying out a task or activity. During this phase, students learn how to carry out a task or activity by gradually practising the various steps involved, until they are finally able to carry out the task or activity in full, in accordance with predetermined performance standards.

The **transfer phase** refers specifically to the adaptations required to transfer and apply the competency (the basics of which have already been acquired) to a real or simulated working environment, in accordance with performance standards required for entry into the work force.

The **enrichment phase** makes it possible to occasionally go beyond the minimum performance standard when applying the competency. It may also focus on the acquisition of additional competencies.

It is important to note that the full acquisition of a competency must involve at least three of the major phases, namely basic learning, practice and transfer. Also, learning activities should ideally be preceded by activities related to the exploration phase because such activities highlight the relevance of the competencies that the students are preparing to develop and allow them to situate themselves in relation to the occupation and the program. Table 1 shows the major phases of acquisition of a competency and emphasizes the progressive integration of learning.

Note: Although integration and transfer occur at different times in the learning process, they mainly occur during two major acquisition phases, namely practice and transfer.

The competency acquisition process has a direct impact on the choice of learning focuses, learning activities and training environments. The following tables provide information on the different choices associated with the competency acquisition phases:

- Table 2, *Learning Focuses Involved in the Acquisition of a Competency*, highlights the characteristics of the learning focuses associated with the different competency acquisition phases.
- Table 3, *Learning Activities Involved in the Acquisition of a Competency*, describes the learning activities associated with the different competency acquisition phases.
- Table 4, *Training Environment for the Acquisition of a Competency*, suggests possible settings for each competency acquisition phase.

TABLE 1: MAJOR PHASES OF ACQUISITION OF A COMPETENCY

Continuum of integration of learning and entry into the work force

EXPLORATION	BASIC LEARNING	PRACTICE	TRANSFER	ENRICHMENT
Career choice or introduction to the training process, or motivation and start-up	Acquisition or development of knowledge, skills from various fields, basic perceptions and attitudes, and their integration	Integration of learning while practising occupational tasks or activities, and progression in level of performance	Application of the competency in a new context	Acquisition or development of a competency beyond the required standard
	General competency of a more basic and transferable nature			
	Specific competency focusing on the mastery of tasks			

This table provides a snapshot of the general process of competency acquisition and is intended to facilitate the analysis process. In reality, this process is neither linear nor compartmentalized, but rather involves movements back and forth between phases, and some reversal and combinations of activities. In Table 4, the arrows between the major phases of the process indicate these numerous possibilities.

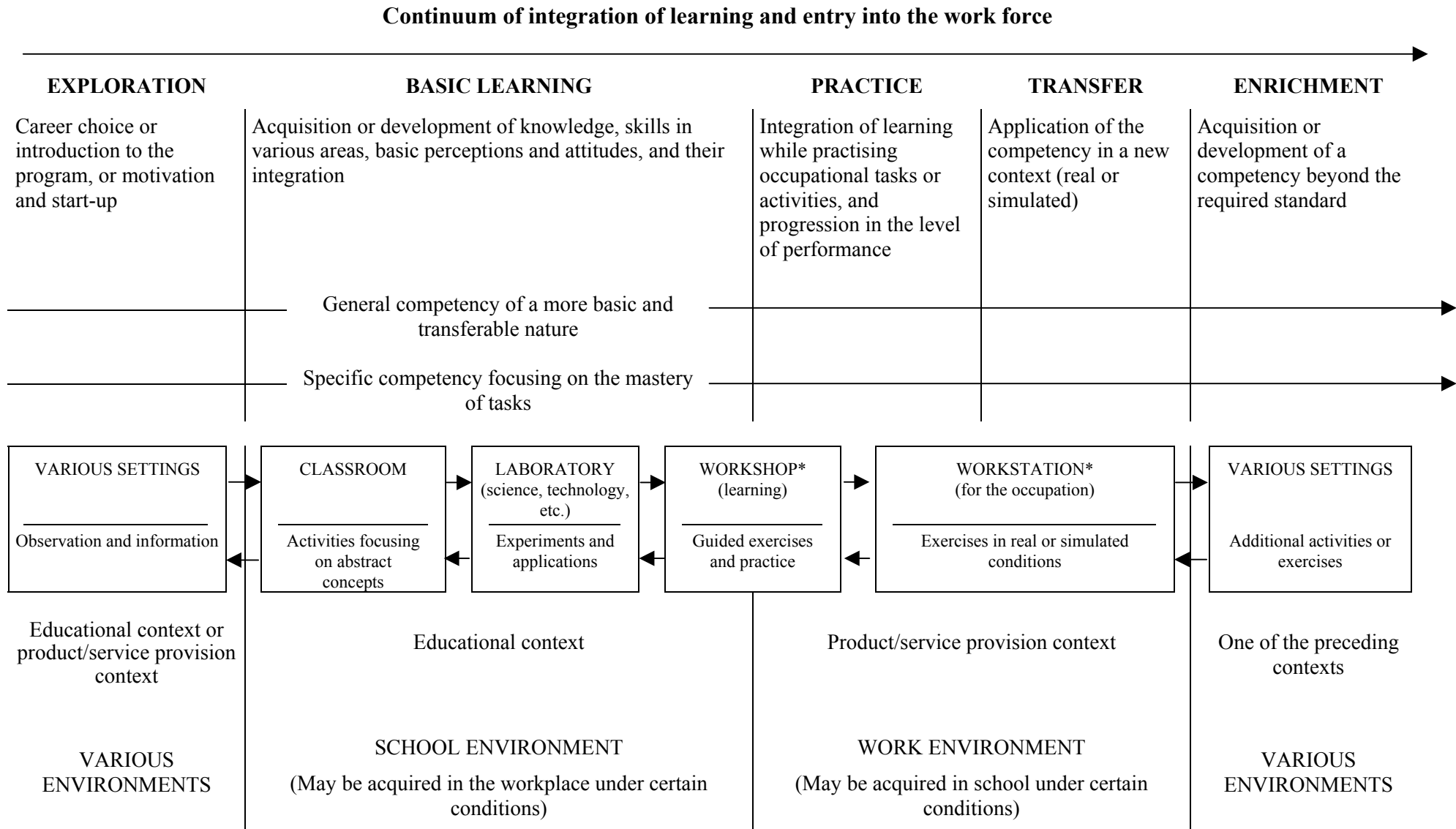
TABLE 2: LEARNING FOCUSES INVOLVED IN THE ACQUISITION OF A COMPETENCY

	1	2	3	4	5
PHASE	EXPLORATION	BASIC LEARNING	PRACTICE	TRANSFER	ENRICHMENT
CATEGORY OF LEARNING FOCUS	Knowledge of the environment, requirements, etc. of the occupation and the training required (at the beginning of the program) Start of the learning process and motivation (at the beginning of a course or when learning something specific for the first time)	KNOWLEDGE: notions, principles, concepts, etc. SKILLS: gestures, movements and coordination thereof; use of tools, operation of machinery, application of knowledge, etc. PERCEPTIONS: recognition of odours, sounds, colours, heat, etc.; determination of the source, cause, etc.; intuitive understanding, representation of objects, etc. ATTITUDES: general behaviours, way of being and acting, especially in terms of ethics, occupational health and safety, quality control, interpersonal relations, etc.	Performance of the occupational task or activity, progression in the level of performance and integration of basic learning (Guided activities, considerable supervision and support: relatively limited autonomy in performing the task or activity)	Application of learning in a context of product/service provision, including any necessary adaptations (A greater degree of autonomy in performing the task or activity)	Development of the competency beyond the required performance standard or the acquisition of new competencies (A limited amount of time allotted within the program. Additional time may be allotted, especially in the case of a work-study program.)

TABLE 3: LEARNING ACTIVITIES INVOLVED IN THE ACQUISITION OF A COMPETENCY

	1	2	3	4	5
PHASE	EXPLORATION	BASIC LEARNING	PRACTICE	TRANSFER	ENRICHMENT
TYPE OF LEARNING ACTIVITY	a) Observation and information activities: conferences, visits to companies and training centres; library research, etc. b) Introductory activities aimed at raising awareness of the relevance and usefulness of the learning	a) Activities involving listening, reflection, discussion, etc. b) Activities involving research, observation, analysis, etc. c) Activities involving the observation and analysis of sounds, odours, etc. d) Activities involving the observation and performance of gestures, actions, etc.	a) Activities allowing for the integration of basic learning, as practice activities are introduced b) Activities that involve practising parts of tasks or activities c) Activities that involve practising a more developed task or activity	a) Adaptation activities b) Performance activities: task or activities that for the most part have been learned in a work environment (real or simulated)	Various activities, depending on the competency or the part of the competency in question

TABLE 4: TRAINING ENVIRONMENT FOR THE ACQUISITION OF A COMPETENCY



*Note: “Classroom” and “laboratory” facilities usually replace “workshop” and “workstation” in the case of nontechnical general competencies.

5. EVALUATION FRAMEWORK

5.1 General Principles

In vocational training, a few general principles guide the choice of strategies for evaluating learning.

Curriculum-based approach

In order to take into account the characteristics of competency-based programs and ensure consistency, evaluation focuses on the competencies described by a program's operational objectives. The evaluation indicators and criteria in the analysis and planning tables are therefore based on elements of the operational objective. They also stem from essential elements of the competency such as the knowledge, skills, perceptions and attitudes to be acquired.

The evaluation procedure is both analytical, because it is based on an analysis of each competency of the program, and global, because it takes into account the program as a whole.

Multidimensional evaluation

Since evaluation focuses on the competency, it is crucial that all aspects of the competency be verified. Thus, the evaluation deals as much with cognitive and psychosensorimotor aspects as with affective aspects.

Criterion-referenced interpretation

According to this approach, the teacher verifies the degree to which each student has attained an objective according to the defined criteria.

Dichotomous Marking System

In vocational training, marking is dichotomous: students may obtain either zero or all of the marks assigned for a criterion component. For example, if criterion component 3.2 is worth 10 marks, then the teacher has a choice of only two marks: 0 or 10. The decision concerning the acquisition of a competency is also stated in dichotomous terms, i.e. as PASS or FAIL, which is determined on the basis of a minimum performance standard.

5.2 Evaluation Strategies

The nature of the competencies of a program calls for a variety of evaluation strategies.

a) Behavioural objectives

The following may be evaluated:

- theoretical knowledge: in this case, the examination may cover the knowledge applied to the occupation and generally comprises a series of written questions
- the product: in this case, the examination focuses on an object that a student must produce and the evaluation is based on a list of requirements related to the characteristics expected of the product
- the process: in this case, the examination covers the work process that the student follows and the evaluation is based on the requirements associated with each step in the process

b) Situational objectives

For a situational objective, the evaluation focuses on the degree to which a student participates in an activity and not on his or her performance during the activity. However, students who are required to present information on a given topic may be required to present information that is relevant to the topic.

INFORMATION ON THE PROGRAM

SYNOPTIC TABLE FOR THE PROGRAM OF STUDY

CODE	TITLE OF MODULE	HOURS	CREDITS ¹
825 011	1. The Trade and the Training Process	15	1
825 262	2. Using a Computer	30	2
825 273	3. Architectural Drawing Components	45	3
825 287	4. Basic Functions of Drafting Software Applications	105	7
825 297	5. Architectural Objects	105	7
825 308	6. Architectural Plans: Single-Family Dwellings	120	8
755 002	7. Health and Safety on Construction Sites	30	2
825 315	8. Advanced Functions of Drawing Software Applications	75	5
825 324	9. Reinforced Concrete Drawings	60	4
825 332	10. Construction Site Data	30	2
825 346	11. Information Related to Plumbing	90	6
825 356	12. Plumbing Plans	90	6
825 362	13. Wall Sections and Detail Drawings	30	2
825 372	14. Estimating Quantities	30	2
825 384	15. Steel Structure Assembly Drawings	60	4
825 398	16. Structural Steel Shop Drawings	120	8
825 408	17. Architectural Plans: Multi-Family Dwellings	120	8
825 413	18. Information Related to Electricity	45	3
825 423	19. Electrical Plans	45	3
825 437	20. Presentation Drawings	105	7
825 211	21. Job Search Techniques	15	1
825 446	22. Information Related to Ventilation	90	6
825 457	23. Ventilation Plans	105	7
825 468	24. Commercial Building Plans	120	8
825 258	25. Entering the Work Force	120	8

¹ One credit is equivalent to 15 hours.

GRID OF COMPETENCIES

RESIDENTIAL AND COMMERCIAL DRAFTING	WORK PROCESS (major steps)		GENERAL COMPETENCIES (technology, personal development, etc.)												TOTALS									
	OPERATIONAL OBJECTIVES	DURATION (IN HOURS)	Become familiar with the work to be done	Organize the work to be done	Carry out the task	Revise and correct drawings	Produce the final version of documents	File documents	To determine their suitability for the trade and the training process	To use a computer	To draft architectural components	To use the basic functions of drafting software application	To produce drawings of architectural objects	To apply concepts of health and safety on construction sites	To use the advanced functions of drafting software applications	To research information related to plumbing	To draw wall sections and detail drawings	To estimate quantities of materials and equipment	To research information related to electricity	To use job search techniques	To research information related to ventilation	NUMBER OF OBJECTIVES	DURATION (IN HOURS)	
Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module	Module
OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES	OPERATIONAL OBJECTIVES
DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)	DURATION (IN HOURS)
6	To produce architectural plans for a single-family dwelling	B	120	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
9	To produce reinforced concrete drawings	B	60	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
10	To record construction site data	B	30	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
12	To produce plumbing plans	B	90	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
15	To produce steel structure assembly drawings	B	60	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
16	To produce structural steel shop drawings	B	120	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
17	To produce architectural plans for a multi-family dwelling	B	120	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
19	To produce electrical plans	B	45	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
20	To produce presentation drawings	B	105	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
23	To produce ventilation plans	B	105	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
24	To produce commercial building plans	B	120	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
25	To enter the work force	S	120	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	705
NUMBER OF OBJECTIVES		12																						25
DURATION (IN HOURS)			1095																					1800

S: Situational objective

B: Behavioural objective

▲ Correlation between a step and a specific competency

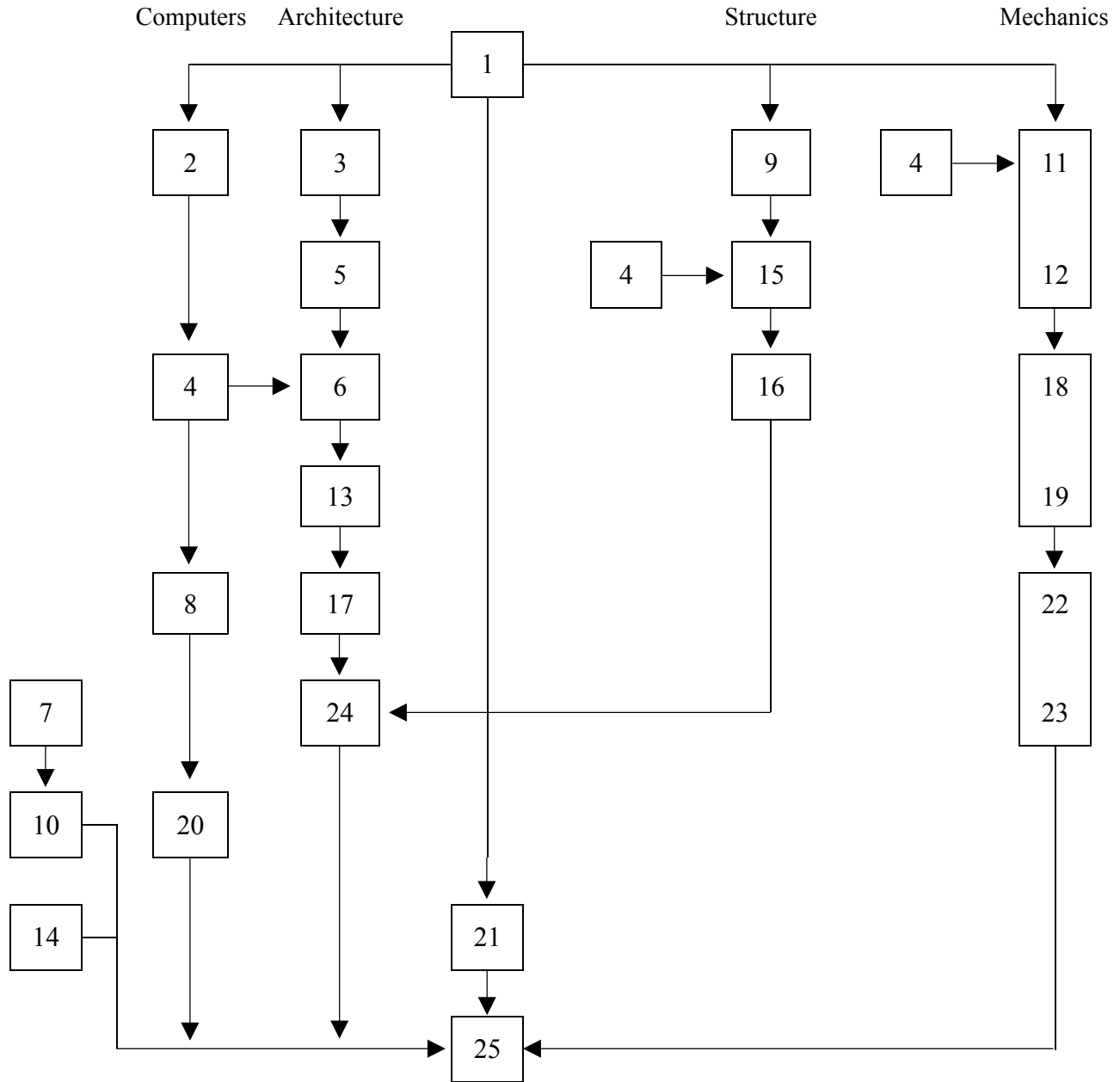
▲ Correlation to be taught and evaluated

○ Correlation between a general and a specific competency

● Correlation to be taught and evaluated

ELEMENTS OF INSTRUCTIONAL PLANNING

LOGIC DIAGRAM SHOWING THE TEACHING SEQUENCE



PROPOSED EDUCATIONAL AIMS

1. Develop autonomy and initiative.
2. Develop an awareness of the consequences of their work.
3. Develop the ability to adapt to change and to meet deadlines.
4. Develop the ability to plan and organize their work.
5. Develop the ability to verify their work.
6. Develop lifelong learning skills.

PART TWO

HOW TO READ THE ANALYSIS AND PLANNING
TABLES, INFORMATION ON THE EVALUATION AND
EVALUATION FORMS

HOW TO READ THE ANALYSIS AND PLANNING TABLES, INFORMATION ON THE EVALUATION AND EVALUATION FORMS

1. ANALYSIS AND PLANNING TABLES

The analysis and planning tables contain information on learning and evaluation for each module of the program.

A) LEARNING

ACQUISITION PHASE

Each competency has been analyzed by giving due consideration to the competency acquisition process presented in Part One of this document.

The tables for a behavioural objective have a *Ph* (phase) column showing the number of the phase to which the learning focus corresponds (1 to 5).

The tables for a situational objective do not contain a *Ph* column because this type of objective is structured differently.

LEARNING FOCUSES

The learning focuses refer to all the learning required of students in order to acquire and practise the competency. The learning focuses are not exhaustive and may be enriched in order to meet the specific needs of certain groups of students. The nature of the learning focuses depends on the acquisition phase of the competency with which they are associated. Table 2, *Learning Focuses Involved in the Acquisition of a Competency*, provides an overview of possible learning focuses for each phase.

These focuses are shown in the analysis and planning tables according to the structure used for the specifications of the operational objective and not necessarily according to a teaching sequence.

The learning focuses may be related to a competency as a whole or to a specification of the operational objective. They are listed separately in the analysis and planning tables for easier reference. In addition, each learning focus is accompanied by a code that makes it possible to locate it in the analysis and planning tables.

Lastly, the “Learning Focuses” column contains details on the duration of training. These time limits are expressed in percentage form as the total amount of time devoted to the learning associated with each specification and the amount of time devoted to the transfer phase.

GUIDELINES

Guidelines related to the content or field of application have been indicated for each learning focus.

This column also provides information on links with other modules or educational aims.

ACTIVITIES (REFERENCES)

This blank column indicates that teachers are required to develop the learning activities themselves.

An activity should be developed for each learning focus by taking into account the guidelines indicated. However, several learning focuses may be grouped together in one activity to make learning easier.

In developing learning activities, the following criteria should be observed:

- Ensure that the activity is relevant to the learning focus. Will the suggested activity result in students learning what they need to learn? Some learning focuses related to the acquisition of psychomotor or socioaffective skills require learning activities in which students play a very active role.
- Vary the activities so as to stimulate interest and facilitate the desired learning.
- Take into account any constraints related to physical and material conditions (availability of required facilities and educational materials).
- Alternate activities where the teacher plays a more active role (such as lectures) with learning activities where the student takes the lead.

This column may also include information on written or audio-visual materials.

B) EVALUATION

The analysis and planning tables contain information on evaluation for certification purposes and on formative evaluation in order to better integrate evaluation into teaching and learning activities. Note that only the information relating to evaluation for certification purposes is prescriptive in nature.

Steps 1 to 4 below describe the nature of the information presented in the “Evaluation” section of the analysis and planning tables and the process used to ensure consistency between the program objectives and the means used to verify whether these objectives have been achieved.

Step 1: Choice of evaluation focuses when evaluating for certification purposes

The choice of evaluation focuses is based, on the one hand, on the operational objective associated with a competency and, on the other, on all the operational objectives of a program of study, so as to make the evaluation process easier. Reference to the **specifications of the expected behaviour** described in the program makes it possible to select a meaningful and representative sample of the focuses to evaluate for each competency.

This procedure ensures that the samples are representative.

Step 2: Choice of evaluation strategies

As mentioned earlier, the characteristics of the operational objective and the constraints related to the evaluation influence the choice of evaluation strategy. The suggested strategy or strategies should provide the best information possible on the learning focus being evaluated.

Step 3: Development of evaluation indicators and criteria

Evaluation indicators and criteria are defined for each of the specifications used when evaluating for certification purposes (evaluation focuses). These vary in number and their wording depends on the evaluation strategy being used.

Evaluation indicators and criteria are defined by taking into account the operational objective, in particular, the general and specific performance (or participation) criteria.

Each indicator presents an aspect to be evaluated or specifies the perspective from which a component of the competency is to be evaluated. The indicators are preceded by a whole number (1, 2, etc.).

These indicators are followed by criteria that describe the performance (or participation) requirements in greater detail. The criteria are used to assess whether the performance (or participation) evaluated is satisfactory. The criteria used when evaluating for certification purposes are also numbered (1.1, 1.2, 1.3, etc.).

Note that the analysis and planning tables provide guidelines under the “Evaluation Indicators and Criteria” column, which makes formative evaluation easier. These guidelines are given for information purposes only. They are not accompanied by weightings or evaluation strategies. They are related to the general or specific criteria that were not used when evaluating for certification purposes.

Step 4: Determination of weightings

Each evaluation indicator is given a numerical value that indicates its relative importance in the overall measurement of performance (or participation) for a given evaluation focus.

Each evaluation criterion associated with an indicator is also weighted. The sum of the weightings assigned to each of these criteria is equal to the overall weighting assigned to the indicator.

This procedure makes it possible to highlight the relative importance of the evaluation indicators and criteria associated with an evaluation focus.

2. INFORMATION ON THE EVALUATION AND EVALUATION FORMS

To assist school boards in developing their examinations, the instructional planning model includes analysis and planning tables, as well as a brief description of the evaluation and an evaluation form, both based on the “Evaluation” section of the tables. Using this information and forms, teachers can then prepare their examinations.

a) Information on the Evaluation

This section contains suggestions on how to prepare an examination that meets the requirements for certification. It takes into account the evaluation criteria prescribed in the program. The objective of this information is to standardize the level of complexity of the examination among the various schools.

It contains:

- general information and instructions: the competency being evaluated, the suggested duration, the number of candidates that can be evaluated at the same time, etc.
- the examination procedure: a description of the task to be carried out by the candidate, the conditions for carrying out the task, suggestions for tasks, etc.
- a description of the materials needed
- special instructions: restrictions, observation times, etc.

b) Evaluation Form

The evaluation form is an instrument that specifies what the teacher needs to observe to evaluate the performance of a candidate. It is designed to standardize the evaluation process.

It contains:

- general information: program title, module title, the candidate’s name, the examiner’s name, etc.
- the indicators and criteria selected for evaluation for certification purposes
- observation elements that further specify the observations associated with an evaluation criterion
- the number of errors allowed (error tolerance) without loss of marks for a criterion component
- boxes for recording the results for the elements being observed
- a space for recording marks in dichotomous form
- a minimum performance standard and/or conditions that make it easier for the teacher to reach a PASS or FAIL decision

ANALYSIS AND PLANNING TABLES
INFORMATION ON THE EVALUATION
EVALUATION FORMS

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 011 – THE TRADE AND THE TRAINING PROCESS (Module 1)				Duration: 15 hours	
Statement of the Competency: <i>To determine their suitability for the trade and the training process</i>					
COMPETENCY		LEARNING		EVALUATION	
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I W _C
PHASE 1: INFORMATION ON THE TRADE Duration: 60%					
1.1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies			
1.2	Be receptive to information regarding the trade and the training program.	Conditions indicative of being receptive: careful observation and listening, favourable climate, interest, concentration and physical and psychological well-being			
1.3	Be concerned about sharing their views on the occupation with the other members of the group.	Advantages of giving their point of view and listening to that of others			
1.4	Determine a method for writing down and presenting information.	Method for note-taking Rules for organizing and presenting a written report			
1.5	Explain the main rules governing proper group discussion.	Basic rules: participation, respect of another person’s turn to speak, not straying from the subject, paying attention to others and accepting different points of view			
1.6	Learn about the job market in residential and commercial drafting.	Potential work environments, types of establishments, job prospects, remuneration, advancement opportunities, selection of candidates		1 Gather information on most of the topics to be covered. 1.1 Take notes on the following topics: job prospects, remuneration, hiring criteria, advancement opportunities.	20 20

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 011 – THE TRADE AND THE TRAINING PROCESS (Module 1)					Duration: 15 hours	
Statement of the Competency: <i>To determine their suitability for the trade and the training process</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
1.7	Learn about the nature and the requirements of the job.	Tasks, working conditions, evaluation criteria, rights and responsibilities of workers, rights and responsibilities of employers, rules of personal and professional ethics Health and safety risks on construction sites Role of the Commission de la santé et de la sécurité au travail (CSST) Role of the Commission des normes du travail (CNT)				
1.8	Assess the possibility of starting up a business or being self-employed.	Link between the current economic situation and the field of residential and commercial drafting Characteristics of an entrepreneur Motivation for starting up a business				
1.9	Present the information gathered and discuss their views on the trade.	Comparison of their views with the realities of the trade Views on the advantages, disadvantages and requirements of the trade		2 Express their views on the trade, relating them to the information gathered. 2.1 Express their views on the trade during a group discussion.	15	15

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 011 – THE TRADE AND THE TRAINING PROCESS (Module 1)					Duration: 15 hours	
Statement of the Competency: <i>To determine their suitability for the trade and the training process</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
PHASE 2: INFORMATION ON AND PARTICIPATION IN THE TRAINING PROCESS						
				Duration: 20%		
2.1	Discuss the skills, aptitudes and knowledge required to practise the trade.	Simple definition of: - skill: possibility of reproducing a behaviour - aptitude: natural, innate disposition - attitude: way of being or behaving in different situations - knowledge: idea, concept, comprehension		3	Give their opinions on some of the requirements that they will have to meet in order to practise the trade.	10
				3.1	Hand in to the teacher notes on the main requirements to be met in order to practise the trade.	10
2.2	Learn about the training plan.	Program of study, synoptic table, program training goals, general objectives, operational objectives, evaluation, certification of studies, training process and organization of modules		4	Study carefully the documents provided and listen attentively to explanations.	15
			4.1	Comment on each of the following aspects: - program content - training process - evaluation methods - certification of studies	15	
2.3	Discuss the training plan and how it relates to the work of a draftsman.	Comparison between the objectives of the program of study and the tasks and knowledge required by the trade				
2.4	Discuss their initial reactions to the trade and the training plan.			5	Express their views on the training process, relating them to the requirements of the trade.	15
				5.1	Indicate at least two examples of how the program modules relate to the practice of the trade.	15

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

2005-01-31

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 011 – THE TRADE AND THE TRAINING PROCESS (Module 1)

INFORMATION ON THE EVALUATION

Evaluation of the candidates' participation is based on information gathered at different times during the learning activities. However, a final judgment of each criterion component should be made only at the end of the corresponding phase in the learning situation.

The evaluation should not focus on the accuracy of the candidates' perceptions or opinions, but rather on whether they have based their perceptions or opinions on arguments or examples.

PHASE 1: INFORMATION ON THE TRADE

1 GATHER INFORMATION ON MOST OF THE TOPICS TO BE COVERED

During this activity, it is important to clearly indicate the type of information that the candidates must gather and present in a group discussion. Regardless of the medium and conventions used to record the information, the evaluation should not focus on the accuracy, quality or presentation of the information, but rather on the candidates' efforts to compile sufficient pertinent information on the topics to be covered and to organize it so that it can be used during a group discussion.

Candidates must provide a sufficient amount of information, without painting a complete and rigorously accurate picture of the situation.

2 EXPRESS THEIR VIEWS ON THE TRADE, RELATING THEM TO THE INFORMATION GATHERED

The group meeting should be prepared and supervised in such a way that all candidates have the opportunity to express their views.

PHASE 2: INFORMATION ON AND PARTICIPATION IN THE TRAINING PROCESS

3 GIVE THEIR OPINIONS ON SOME OF THE REQUIREMENTS THAT THEY WILL HAVE TO MEET IN ORDER TO PRACTISE THE TRADE

The usefulness, relevance and validity of some of the skills, attitudes and knowledge considered requirements for practising the trade will be discussed. The group discussion should be prepared and supervised in such a way that all candidates have the opportunity to express their views.

4 STUDY CAREFULLY THE DOCUMENTS PROVIDED AND LISTEN ATTENTIVELY TO EXPLANATIONS

During this activity, it is important to clearly indicate the type of information that candidates must gather and present in writing.

5 EXPRESS THEIR VIEWS ON THE TRAINING PROCESS, RELATING THEM TO THE REQUIREMENTS OF THE TRADE

The group discussion should be prepared and supervised in such a way that all candidates have the opportunity to express their views.

Candidates must discuss the relevance or usefulness of at least two elements of the training program.

PHASE 3: EVALUATION AND CONFIRMATION OF CAREER CHOICE

6 SUM UP THEIR PREFERENCES, APTITUDES, INTERESTS AND PERSONAL QUALITIES

To explain their career choice, candidates must show in their report the connections that exist between at least three selected aspects or requirements of the trade and their personal preferences, interests and aptitudes that led them to choose this trade. At this stage, the candidates' perceptions need not be objective or accurate.

The judgment should not focus on how well the report is written. Instead of requiring a written report, the instructor could even prepare a questionnaire and have candidates fill it out (it should not, however, take the form of a theory examination). Candidates must have made an effort to include the elements required. The instructions for preparing the report must clearly define what is meant by preferences, interests and aptitudes.

7 EXPLAIN WHY THEY CHOOSE TO CONTINUE OR ABANDON THE TRAINING PROCESS

Candidates should participate actively in the discussion on their career choice with the teacher, indicating the main reason for their choice.

PARTICIPATION EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 1 – The Trade and the Training Process Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 011 RESULT: PASS FAIL ☐ ☐
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PARTICIPATION COMPONENTS	RESULT YES NO
PHASE 1: INFORMATION ON THE TRADE	
1 GATHER INFORMATION ON MOST OF THE TOPICS TO BE COVERED	
1.1 Take relevant notes on at least three of the following topics: - work environments (types of companies, products) - job prospects - remuneration - advancement opportunities - selection of candidates	☐ ☐
2 EXPRESS THEIR VIEWS ON THE TRADE, RELATING THEM TO THE INFORMATION GATHERED	
2.1 Express their views on the trade during a group discussion (advantages, disadvantages, requirements).	☐ ☐
PHASE 2: INFORMATION ON AND PARTICIPATION IN THE TRAINING PROCESS	
3 GIVE THEIR OPINIONS ON SOME OF THE REQUIREMENTS THAT THEY WILL HAVE TO MEET IN ORDER TO PRACTISE THE TRADE	
3.1 Hand in to the teacher notes on at least two requirements of the trade to be met (skills, attitudes or knowledge), basing their opinion on a relevant argument.	☐ ☐

PARTICIPATION COMPONENTS		RESULT YES NO	
4	STUDY CAREFULLY THE DOCUMENTS PROVIDED AND LISTEN ATTENTIVELY TO EXPLANATIONS		
4.1	Comment on each of the following aspects: - program content - training process - evaluation methods - certification of studies	☐	☐
5	EXPRESS THEIR VIEWS ON THE TRAINING PROCESS, RELATING THEM TO THE REQUIREMENTS OF THE TRADE		
5.1	Indicate at least two examples of how the program modules relate to the practice of the trade.	☐	☐
PHASE 3: EVALUATION AND CONFIRMATION OF CAREER CHOICE			
6	SUM UP THEIR PREFERENCES, INTERESTS, APTITUDES AND PERSONAL QUALITIES		
6.1	Specify their preferences, aptitudes, interests and personal qualities.	☐	☐
7	EXPLAIN WHY THEY CHOOSE TO CONTINUE OR ABANDON THE TRAINING PROCESS		
7.1	Indicate to the teacher the main reason for their career choice.	☐	☐
Pass/fail conditions: 6 YESes out of a possible 7, and a YES for components 1.1, 5.1 and 6.1			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 262 – USING A COMPUTER (Module 2)					Duration: 30 hours		
Statement of the Competency: <i>To use a computer</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>USE A COMPUTER</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
2	Realize the importance of lifelong learning.	Importance of adapting to frequent changes related to computer technology Importance of keeping up-to-date with developments Educational Aim 6					
<i>A. USE AN OPERATING SYSTEM</i>							
Duration: 15%							
2	A.1 Use the main functions of a graphic environment.	Desktop Toolbar Start menu Icons					
2	A.2 Observe procedures for producing a document.	Start of work session Creation of folder Saving of document End of work session					
2	A.3 Manage files and folders.	Copy of files or folders Moving of files or folders Deletion of files or folders		Efficient management of files and folders Appropriate customizing of the graphic environment according to needs			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 262 – USING A COMPUTER (Module 2)					Duration: 30 hours		
Statement of the Competency: <i>To use a computer</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
3	A Use an operating system.			1 Use of an operating system 1.1 Correct use of the main functions of a graphic environment 1.2 Observance of procedure for creating a file 1.3 Observance of procedure for creating a folder 1.4 Observance of procedure for terminating a work session Appropriate use of technical documents Appropriate use of materials	35	15	PT
						10	PT
						5	PT
						5	PT
4	A Use an operating system.						
B. USE A WORD PROCESSOR							
Duration: 30%							
2	B.1 Observe procedures for using a word processor.	Creation of document Management of files Saving of files Moving within a document Formatting of document Layout of document Printing of document End of work session					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 262 – USING A COMPUTER (Module 2)							Duration: 30 hours		
Statement of the Competency: <i>To use a computer</i>									
COMPETENCY			LEARNING		EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
2	B.2	Use the main functions of a word processor.	Formatting of text Modification of text Moving of a block of text Selection of different fonts Page numbering Use of dictionary						
3	B	Use a word processor.			2 Use of a word processor 2.1 Observance of procedures for creating, saving and printing documents 2.2 Use of appropriate commands Appropriate use of technical documents Appropriate use of materials	25	15 10	PT PT	
4	B	Use a word processor.							
5	B	Use a word processor.	Use of advanced functions						
C. USE A SPREADSHEET									
Duration: 40%									
2	C.1	Observe procedures for using a spreadsheet.	Creation of a spreadsheet Entry of data Entry of formulas Management of files Printing of document End of work session						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 262 – USING A COMPUTER (Module 2)								Duration: 30 hours	
Statement of the Competency: <i>To use a computer</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	C.2	Use the main functions of a spreadsheet.	Insertion of rows and columns Modification of rows or columns Modification of text Modification of formulas Calculation of data						
3	C	Use a spreadsheet.				3 Use of a spreadsheet 3.1 Use of appropriate commands Observance of procedures for creating, saving and printing documents Appropriate use of technical documents Appropriate use of materials	25	25	PT
4	C	Use a spreadsheet.							
5	C	Use a spreadsheet.	Use of advanced functions						
D. USE A BROWSER									
Duration: 15%									
2	D.1	Observe procedures for using a browser.	Launch of a browser Search for information Printing of document End of work session						
2	D.2	Use the main functions of a browser.	Use of “research assistant” Use of “history”			Choice of appropriate browser functions			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 262 – USING A COMPUTER (Module 2)							Duration: 30 hours	
Statement of the Competency: <i>To use a computer</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
3	D Use a browser.			4 Use of a browser 4.1 Observance of procedures for processing electronic mail 4.2 Efficient browsing to seek information 4.3 Observance of procedures for importing and printing texts and graphics Appropriate use of technical documents Appropriate use of materials	15	5	PT	
4	D Use a browser.							
5	D Use a browser.	More detailed search for information						
Use a computer								
4	Use a computer.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 262 – USING A COMPUTER (Module 2)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to use a computer equipped with a word processor, spreadsheet and browser. The suggested duration for this practical examination is three hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given the following:

- instructions
- a text of approximately 200 words
- information on how to set up a table

Task 1 consists in starting a work session, creating a folder and a file, and performing various operations, such as searching for a document, moving a document, modifying a document's name, reorganizing documents and copying documents. This task is used to evaluate criteria 1.1 to 1.3. Criterion 1.4 will be evaluated at the end of the examination when candidates are asked to terminate the work session.

Candidates have approximately 20 minutes for this task.

Task 2 consists in making roughly ten modifications to an existing one-page document. Candidates must create a new document, and locate, open and copy existing text. Then they must make various modifications, such as changing the page layout, changing the font, moving blocks of text, underlining certain sections of text, italicizing text, adding colour and adding a table.

Candidates must then save and print the document.

They have approximately 50 minutes for this task.

Task 3 consists in creating a table using a spreadsheet. The table could have 4 or 5 columns and approximately 10 rows, and fit on one page. The examiner will provide instructions regarding the cell format, row height, column width, worksheet background and the font to be used. The examiner should also provide the candidates with the text to be included in the table, for example, an order for construction materials containing the description, quantity and cost of the materials. The task should involve creating and using at least one equation. The candidates must complete the task by saving and printing the table.

Candidates have approximately 1 hour 30 minutes for this task.

Task 4 consists in using a browser to do a search, printing the search results and sending them by e-mail. The examiner will provide specific instructions regarding the search, for example, on construction materials, and the e-mail address to which the search results must be sent.

Candidates have approximately 20 minutes for this task.

3 MATERIALS

The following are required for the examination:

- a computer
- an operating system
- a word processor
- a spreadsheet
- a browser, including e-mail

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 2 – Using a Computer Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 262 RESULT: <table style="width: 100%;"> <tr> <td style="text-align: center; width: 50%;"> PASS ☐ </td> <td style="text-align: center; width: 50%;"> FAIL ☐ </td> </tr> </table>	PASS ☐	FAIL ☐
PASS ☐	FAIL ☐		

OBSERVATION		YES	NO	RESULT
1 USE OF AN OPERATING SYSTEM				
1.1 Correct use of the main functions of a graphic environment:				
- effective search for a document		☐	☐	
- correct moving of document		☐	☐	
- correct modification of the document's name		☐	☐	
- appropriate reorganization of documents		☐	☐	
- correct copy of a document		☐	☐	0 or 15
1.2 Observance of procedure for creating a file:				
- identification of file		☐	☐	
- classification of file		☐	☐	0 or 10
1.3 Observance of procedure for creating a folder:				
- identification of folder		☐	☐	
- classification of folder		☐	☐	0 or 5
1.4 Observance of procedure for terminating a work session		☐	☐	0 or 5
2 USE OF A WORD PROCESSOR				
2.1 Observance of procedures for creating, saving and printing documents		☐	☐	0 or 15

OBSERVATION			RESULT
	YES	NO	
2.2 Use of appropriate commands:			
- editing of text	☐	☐	
- layout of text	☐	☐	
- moving of blocks of text	☐	☐	
- selection of fonts	☐	☐	
- page numbering	☐	☐	
- use of dictionary	☐	☐	
- other	☐	☐	0 or 10
Tolerance: two errors			
3 USE OF A SPREADSHEET			
3.1 Use of appropriate commands:			
- creation of a worksheet	☐	☐	
- copy and moving of a cell	☐	☐	
- entry and copy of data	☐	☐	
- modification of rows and columns	☐	☐	
- equations and calculation of data	☐	☐	
- other	☐	☐	0 or 25
Tolerance: two errors			
4 USE OF A BROWSER			
4.1 Observance of procedures for processing electronic mail	☐	☐	0 or 5
4.2 Efficient browsing to seek information	☐	☐	0 or 5
4.3 Observance of procedures for importing and printing texts and graphics	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)					Duration: 45 hours			
Statement of the Competency: <i>To draft architectural components</i>								
COMPETENCY			LEARNING		EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>DRAFT ARCHITECTURAL COMPONENTS</i>								
1	Situate this competency with respect to the training program.		Reason for the competency Course outline Links with other competencies					
<i>A. PRODUCE A SKETCH</i>								
2	A.1 Determine the type of sketch to be produced.		With or without hidden layers 2D or 3D Partial view Symmetrical sketch					
2	A.2 Position the north arrow.		Relative north					
2	A.3 Ensure the overall dimension of the object.		Centre of object Dials Positioning of components					
2	A.4 Draw the object freehand.		Evenness of lines Linetypes: - axis line - interrupted line: short and long - hidden line - cut line - dashed line - object line Intensity Proportions Technical drafting reference manual		Observance of proportions			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)							Duration: 45 hours		
Statement of the Competency: <i>To draft architectural components</i>									
COMPETENCY			LEARNING		EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
2	A.5	Record the dimensions.	International and imperial systems of measurement, and their respective units Axis lines Dimensions required for positioning Architectural lettering, etc.						
2	A.6	Write notes.	Finishing of materials Slope Special notes						
3	A	Produce a sketch.			1 Production of sketch 1.1 Observance of techniques for producing a sketch	10	10	PT	
B. PREPARE THE LAYOUT									
Duration: 15%									
2	B.1	Select the scale.	International or imperial system of measurement Standards Impact on the paper format						
2	B.2	Select the type of paper.	Ink or lead Photocopy reproduction Durability						
2	B.3	Organize the workstation.	Ergonomics Position of table and chair						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)							Duration: 45 hours			
Statement of the Competency: <i>To draft architectural components</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	B.4	Select the instruments.	Parallel rules T-squares Templates Compass							
2	B.5	Position the border.	Margins			Selection of system of measurement Well-balanced layout				
2	B.6	Position the titleblock.	Company’s standard rules Dimensions							
2	B.7	Select the views to be drawn.	Orthographic views: - European - American							
2	B.8	Centre the object or arrange the orthographic views.	Norms and standards Calculation of margins Calculation of spaces between the different views							
2	B.9	Trace the construction lines.	Overall dimension Balanced layout Use of blue pencil							
3	B	Prepare the layout.	Verification of initial data Verification of inconsistencies			2 Layout 2.1 Accurate calculation of layout 2.2 Observance of scale		20	10 10	PT PT

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)							Duration: 45 hours		
Statement of the Competency: <i>To draft architectural components</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
C. PRODUCE THE DRAWING									
<i>Duration: 30%</i>									
2	C.1	Determine the production sequence.	Object: vertical or horizontal line Orthographic views: logic of the construction Front, side, top views						
2	C.2	Draw all the components of the sketch as construction lines.	Precision Observances of dimensions Inclusion of all components Observance of initial data Circles Ellipses Polygons Joining lines			Observance of drafting conventions			
2	C.3	Trim the construction lines, as required.	Erasers and eraser guides						
2	C.4	Draw the final copy.	Sequence in which work is performed Use of instruments Lead: see A.4 Ink: line thickness Size of point						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)							Duration: 45 hours			
Statement of the Competency: <i>To draft architectural components</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
3	C	Produce the drawing.	Observance of instructions			3	Production of drawing	40		
						3.1	Observance of initial data		10	PT
						3.2	Observance of drafting techniques		10	PT
						3.3	Clean linework		10	PT
						3.4	Clean presentation		10	PT
D. DIMENSION AND ANNOTATE THE DRAWING										
Duration: 19%										
2	D.1	Record the dimensions.	In accordance with architectural or other standards Linear, surface, angle and radius dimensions Quality of lettering			Complete and accurate dimensions Legible data				
2	D.2	Write the notes.	General notes: in the titleblock Special notes: bottom right of the drawing Titles of views Title bubbles Scale Quality of lettering			Legible data				
3	D	Dimension and annotate the drawing.				4	Dimensions and notes	25		
						4.1	Observance of conventions regarding dimensions		15	PT
						4.2	Complete, legible and accurate notes		10	PT

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)							Duration: 45 hours			
Statement of the Competency: <i>To draft architectural components</i>										
COMPETENCY		LEARNING			EVALUATION					
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St			
E. COMPLETE THE TITLEBLOCK										Duration: 1%
2	E.1 Record the data.	Obligatory: - project title - company name - space for seal - surveyor - drafts person’s initials - date of project submission - scale - folder number - revisions - page number Optional: - client’s name - address - text height - completeness - accuracy		Accurate information						
3	E Complete the titleblock.			5 Titleblock 5.1 Complete, accurate information	5	5	PT			
DRAFT ARCHITECTURAL COMPONENTS										Duration: 10%
2	Recognize the importance of organizing the work.	Appropriate materials for performing the tasks Organized, functional workstation Filing of work documents Planning of future work Educational Aim 4								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

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825 273 – ARCHITECTURAL DRAWING COMPONENTS (Module 3)						Duration: 45 hours		
Statement of the Competency: <i>To draft architectural components</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	Recognize the importance of ensuring the quality of their work.	Quality criteria for different lines: fine, medium and large Meticulousness and concern for detail Positive attitude in the face of criticism Professional conscience						
3	Draft architectural components.				Observance of tracing techniques Observance of lettering techniques			
DRAFT ARCHITECTURAL COMPONENTS								
Duration: 5% (including evaluation for the purpose of certification)								
4	DRAFT ARCHITECTURAL COMPONENTS.				Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
DRAFT ARCHITECTURAL COMPONENTS								
5	DRAFT ARCHITECTURAL COMPONENTS.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 273– ARCHITECTURAL DRAWING COMPONENTS (Module 3)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to draft architectural components freehand and using drafting instruments, while observing tracing and lettering techniques. This practical examination is divided into two parts: the first lasts approximately one hour and consists in drawing a sketch freehand; the second, lasting approximately two hours, evaluates the candidates' ability to produce a working drawing using instruments.

2 EXAMINATION PROCEDURE

Part A

This task consists in sketching and dimensioning an architectural component for a small building, (e.g. a small single-family dwelling), using a drafting table and drafting instruments and based on presentation drawings.

Part B

This task consists in drawing an elevation or plan view (e.g. a layout plan comprising polygons and joining lines), using a drafting table and drafting instruments. The candidates must also dimension and annotate the drawing in accordance with the initial data. They must leave the construction lines visible so that the examiner is able to evaluate the tracing technique.

3 MATERIALS

The following are required for the examination:

- vellum paper
- a drafting table
- drafting instruments
- a calculator
- technical documents

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 3 – Architectural Drawing Components Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 273 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 PRODUCTION OF SKETCH			
1.1 Observance of techniques for producing a sketch:			
- inclusion of all components	☐	☐	
- proportion of sketch	☐	☐	
- clean linework	☐	☐	
- clean presentation	☐	☐	0 or 10
Tolerance: one error			
2 LAYOUT			
2.1 Accurate calculation of layout	☐	☐	0 or 10
2.2 Observance of scale	☐	☐	0 or 10
3 PRODUCTION OF DRAWING			
3.1 Observance of initial data	☐	☐	0 or 10
3.2 Observance of drafting techniques	☐	☐	0 or 10
3.3 Clean linework	☐	☐	0 or 10
3.4 Clean presentation	☐	☐	0 or 10

OBSERVATION			RESULT
	YES	NO	
4	DIMENSIONS AND NOTES		
4.1	Observance of conventions regarding dimensions Tolerance: one error	☐ ☐	0 or 15
4.2	Complete, legible and accurate notes	☐ ☐	0 or 10
5	TITLEBLOCK		
5.1	Complete, accurate information	☐ ☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)					Duration: 105 hours		
Statement of the Competency: <i>To use the basic functions of drafting software applications</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>USE THE BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
2	Realize the importance of lifelong learning.	Importance of adapting to frequent changes in computer technology Importance of keeping abreast of developments Educational Aim 6					
<i>A. CREATE A DOCUMENT</i>							
2	A.1 Use the drafting software environment.	Graphic and text environment Categories of commands Menus and options Toolbars Data entry and messages					
2	A.2 Begin a work session.	Creation of a new drawing Selection of drawing units and limits Selection of name Use, creation of a template Saving of drawings Opening of an existing drawing					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)						Duration: 105 hours			
Statement of the Competency: <i>To use the basic functions of drafting software applications</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	A.3	Use the working aids.	Orient, select, snap			Relevant customizing of toolbars			
3	A	Create a document.				1 Creation of a document 1.1 Observance of procedures for modifying page boundaries 1.2 Use of proper commands to specify the working unit	10	5 5	PT PT
B. PRODUCE THE DRAWING									Duration: 20%
2	B.1	Observe the procedures for producing a drawing.	Steps to follow in producing a drawing: axis lines, primary lines, secondary lines, copy objects, mirror objects, etc.			Structured procedure			
2	B.2	Distinguish ways of inputting points.	System of absolute, relative, polar co-ordinates; points on the screen, orientation and position of components in space						
2	B.3	Use the basic drafting commands.	Drafting commands: rotate, move copy lines, etc.			Proper selection of commands			
2	B.4	Modify a drawing.	Editing commands: erase, extend, scale change, extend objects, etc.						
2	B.5	Visualize a drawing.	Zoom in, zoom out, panorama						
2	B.6	Select the entities or objects.	Selection methods: window, back, previous, capture, add, cancel, etc.						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)						Duration: 105 hours			
Statement of the Competency: <i>To use the basic functions of drafting software applications</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
3	B Produce the drawing.			2 Use of basic drafting and editing commands 2.1 Proper use of drafting commands 2.2 Proper use of commands for basic editing 2.3 Precision of drawing	40	15	PT		
					10	PT			
					15	PT			
C. SUPPLY THE REQUIRED ADDITIONAL ELEMENTS									Duration: 10%
2	C.1 Create a text style.	Creation of text with text height in conformity with drafting standards							
2	C.2 Dimension the drawing.	Linear, aligned, circle and angle dimensions; continuous and cumulative dimensions; reference lines		Appropriate selection of dimensioning commands					
2	C.3 Add hatch elements.	Elements in the hatch dialogue box Placement and selection							
3	C Supply the required additional elements.			Appropriate use of commands for gathering information on the drawing Structured procedure 3 Rendering of the drawing 3.1 Appropriate use of lettering commands 3.2 Appropriate use of dimensioning commands 3.3 Appropriate use of hatch commands	15	5	PT		
						5	PT		
						5	PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)						Duration: 105 hours		
Statement of the Competency: <i>To use the basic functions of drafting software applications</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
D. USE A LIBRARY OF SYMBOLS (BLOCK) Duration: 10%								
2	D.1 Create symbols (block).	Types of blocks: single entity, template, symbol Properties of created blocks Internal or external blocks Saving of a block in a file						
2	D.2 Insert blocks.	Scale, insertion point and rotation						
2	D.3 Modify blocks.	Redefinition, exploded		Proper use of commands for editing and gathering information on a block				
3	D Use a library of symbols (block).			Observance of proper procedures for saving a block in a file 4 Use of commands related to blocks 4.1 Proper use of commands for creating and inserting blocks	10	10	PT	
E. MANAGE LAYERS Duration: 5%								
2	E.1 Recognize the usefulness and necessity of using layers.	Importance of separating the different components according to specific requirements						
2	E.2 Name the layers.	Selection of a name according to location						
2	E.3 Change the states of the layers.	Properties of a layer		Proper use of layers				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)							Duration: 105 hours				
Statement of the Competency: <i>To use the basic functions of drafting software applications</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
3	E	Manage layers.				5	Management of layers	10			
						5.1	Proper layout of graphic components on the layers		5	PT	
						5.2	Selection of appropriate parameters		5	PT	
F. MODIFY THE DIMENSION VARIABLES										Duration: 10%	
2	F.1	Use different types of dimensions.	Linear, radius and angle dimensions Move, align, parallel, serial								
3	F	Modify the dimension variables.				Selection of proper dimensional parameters Conformity of dimensioning styles with technical drafting standards					
G. MODIFY PRINTING VARIABLES										Duration: 15%	
2	G.1	Determine the printing parameters.	Selection of printer and page format according to size of project and orientation			Selection of proper printing parameters					
2	G.2	Select the line weight.	Use of a plot style								
2	G.3	Use the specified environment.	Difference between the model space and the paper space, and their respective uses								
2	G.4	Scale the drawing.	Scaling of view versus scaling using printing parameters								
2	G.5	Print from the paper space.	Simple layout of one view only								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)						Duration: 105 hours		
Statement of the Competency: <i>To use the basic functions of drafting software applications</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
3	G Modify printing variables.			6 Printing of drawing 6.1 Proper selection of line weight and linetypes 6.2 Observance of scale Proper selection of printing area	15	10	PT	
					5		PT	
USE THE BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS								
<i>Duration: 15%</i>								
3	Use the basic functions of drafting software applications.			Appropriate use of technical documents Appropriate use of materials				
USE THE BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS								
<i>Duration: 5%</i>								
(including evaluation for the purpose of certification)								
2	Demonstrate autonomy and initiative.	Importance of taking charge of their learning process (e.g. students find information on their own) Educational Aim 1						
4	USE THE BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
USE THE BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS								
5	USE THE BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS.	More complex drawing, requiring more in-depth analysis, thought and use of commands More independent work, requiring greater initiative						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 287 – BASIC FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 4)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to use the basic functions of drafting software applications. The suggested duration of this practical examination is six hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given the following:

- a plan to be reproduced, for example, a floor plan for a dwelling, a small commercial building or an office building
- a library of symbols (blocks), containing furniture and plumbing fixtures
- the data required to perform the task

The candidates must perform a task composed of six distinct steps. They must create a document, draw doors and windows and save them as blocks, redraw the plan provided, insert the blocks, render the drawing and print the plan.

Step 1, lasting approximately 15 minutes, consists in creating a document based on data, such as the registration index, the name of the file under which it will be saved, the dimensioning parameters and the list of layers. The candidates must take into account the page format, the scale used, the drawing limit and the type of unit. This step is used to evaluate criteria 1.1 and 1.2.

Step 2, lasting approximately 1 hour, consists in drawing doors and windows and saving them as blocks. This step is used to evaluate part of criteria 2.1 and 2.2 as well as part of criterion 4.1, creating symbols.

Step 3, lasting approximately 2 hours 45 minutes, consists in using the computer to redraw the plan provided. The examiner will also provide data concerning axis lines, dimensions, the thickness of exterior walls and the thickness of interior walls. This step is used to evaluate criteria 2.1 and 2.2.

Step 4, lasting approximately 30 minutes, consists in inserting blocks provided by the examiner as well as those that the candidates created in Step 2. It is used to evaluate criterion 4.1, inserting symbols.

Step 5, lasting approximately 30 minutes, consists in rendering the drawing using the stipulated lettering, dimensions and hatching. It is used to evaluate criteria 3.1, 3.2 and 3.3.

Step 6, lasting approximately 1 hour, consists in printing the plan and parts of the plan in different scales. The examiner will provide information concerning the scales. This step is used to evaluate criteria 6.1 and 6.2.

Note: The candidates must manage the layers throughout the examination. The examiner will check this part of the examination on computer rather than on the printed drawing. Criteria 5.1 and 5.2 are evaluated in this way.

3 MATERIALS

The following is required for the examination:

- a computer equipped with drafting software

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 4 – Basic Functions of Drafting Software Applications Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 287 RESULT: PASS FAIL ☐ ☐
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OBSERVATION			RESULT
	YES	NO	
1 CREATION OF A DOCUMENT			
1.1 Observance of procedures for modifying page boundaries:			
- page format	☐	☐	
- scale of page	☐	☐	
- drawing limit	☐	☐	0 or 5
1.2 Use of proper commands to specify the working unit:			
- type of unit	☐	☐	
- precision	☐	☐	0 or 5
2 USE OF BASIC DRAFTING AND EDITING COMMANDS			
2.1 Proper use of drafting commands:			
- proper use of basic commands	☐	☐	
- proper use of viewing commands	☐	☐	
- proper use of selection commands	☐	☐	0 or 15
Tolerance: two errors			
2.2 Proper use of commands for basic editing	☐	☐	0 or 10
2.3 Precision of drawing	☐	☐	0 or 15
Tolerance: one error			

OBSERVATION			RESULT
	YES	NO	
3 RENDERING OF THE DRAWING			
3.1 Appropriate use of lettering commands	☐	☐	0 or 5
3.2 Appropriate use of dimensioning commands	☐	☐	0 or 5
3.3 Appropriate use of hatch commands	☐	☐	0 or 5
4 USE OF COMMANDS RELATED TO BLOCKS			
4.1 Proper use of commands for creating and inserting blocks	☐	☐	0 or 10
5 MANAGEMENT OF LAYERS			
5.1 Proper layout of graphic components on the layers	☐	☐	0 or 5
5.2 Selection of appropriate parameters	☐	☐	0 or 5
6 PRINTING OF DRAWING			
6.1 Proper selection of line weight and linetypes:			
- exterior wall	☐	☐	
- interior wall	☐	☐	
- door and window	☐	☐	
- hatch	☐	☐	
- dimension	☐	☐	
- furniture and plumbing fixtures	☐	☐	0 or 10
6.2 Observance of scale	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 297– ARCHITECTURAL OBJECTS (Module 5)					Duration: 105 hours		
Statement of the Competency: <i>To produce drawings of architectural objects</i>							
COMPETENCY		LEARNING			EVALUATION		
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE DRAWINGS OF ARCHITECTURAL OBJECTS</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
<i>A. PRODUCE AN ORTHOGRAPHIC PROJECTION OF AN ARCHITECTURAL OBJECT</i>							
2	A.1 Select the views and their placement.	Top, front and side views Calculation of horizontal spacing Calculation of vertical spacing Drawing of frames		Observance of procedures			
2	A.2 Sketch each of the views.	Production sequence Construction lines 45-degree line method		Appropriate width of linework			
2	A.3 Verify and correct the sketches.	Linetypes (solid, interrupted, etc.) Dimensions of the object					
2	A.4 Record the dimensions.	In accordance with architectural standards Linear, angle, radius and diameter dimensions Review of Module 3, specification D		Complete, accurate and legible dimensions			
2	A.5 Draw the final lines.	Observance of sequence Line weight (lead and ink) Visible and hidden contours		Accurate representation of hidden lines			
2	A.6 Complete the titleblock.	Review of Module 3		Complete, accurate information			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 297– ARCHITECTURAL OBJECTS (Module 5)						Duration: 105 hours			
Statement of the Competency: <i>To produce drawings of architectural objects</i>									
COMPETENCY			LEARNING		EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
3	A	Produce an orthographic projection of an architectural object.			1 Production of an orthographic projection of an architectural object 1.1 Appropriate selection of views 1.2 Accurate tracing of the various projection lines 1.3 Complete, accurate dimensioning	35			
							5	PT	
							15	PT	
							15	PT	
B. PRODUCE THE DRAWING OF A SECTION									Duration: 20%
2	B.1	Select the type of section.	Full horizontal section (plan) Full vertical section (transversal or longitudinal) Offset section (parallel plane) Offset section (secant plane) Half section Local section Broken views		Appropriate selection of sections				
2	B.2	Prepare the layout.	Arrangement of views: plan view, front view, side view and section view Identification of drawings: plan, front, side, right, left and section view		Correct identification of sections				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 297– ARCHITECTURAL OBJECTS (Module 5)							Duration: 105 hours			
Statement of the Competency: <i>To produce drawings of architectural objects</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	B.3	Draw the section view.	Symbols for materials Line weight: medium and heavy Section lines Dimensions							
3	B	Produce the drawing of a section.				2	Production of the drawing of a section	15		
						2.1	Accurate representation of section views		10	PT
						2.2	Correct symbols for materials represented		5	PT
3	A and B	Produce an orthographic projection of an architectural object. Produce the drawing of a section.				3	Quality of the drawing	20		
						3.1	Well-balanced layout		10	PT
						3.2	Appropriate, even line width		5	PT
						3.3	Clean presentation		5	PT
4	A and B	Produce an orthographic projection of an architectural object. Produce the drawing of a section.								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

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825 297– ARCHITECTURAL OBJECTS (Module 5)					Duration: 105 hours		
Statement of the Competency: <i>To produce drawings of architectural objects</i>							
COMPETENCY		LEARNING			EVALUATION		
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
C. PRODUCE AN AUXILIARY VIEW OF AN OBJECT WITH INCLINED PLANES <i>Duration: 5%</i>							
2	C.1 Prepare the layout.	Arrangement of views: plan, front, side and auxiliary Auxiliary view parallel to the inclined surface of the object					
2	C.2 Draw an auxiliary view.	Leader line perpendicular to the inclined surface		Appropriate width of linework Projections perpendicular to inclined surfaces Accurate representation of the auxiliary view			
3	C Produce an auxiliary view of an object with inclined planes.						
4	C Produce an auxiliary view of an object with inclined planes.						
D. PRODUCE AN ISOMETRIC DRAWING OF AN OBJECT <i>Duration: 15%</i>							
2	D.1 Select the construction techniques.	Box construction method Section method Co-ordinate method					
2	D.2 Draw an isometric view.	International or imperial scale Positioning of axes Angle of axes		Accurate angles of the drawing			
2	D.3 Draw the arcs and circles in isometric projection.	Co-ordinate method Ellipsis method		Accurate volumetry			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 297– ARCHITECTURAL OBJECTS (Module 5)							Duration: 105 hours		
Statement of the Competency: <i>To produce drawings of architectural objects</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	D.4	Draw irregular curves.	Grid method Co-ordinate method			Observance of techniques used to draw curves			
3	D	Produce an isometric drawing of an object.							
4	D	Produce an isometric drawing of an object.							
E. PRODUCE A PERSPECTIVE DRAWING OF AN OBJECT									
Duration: 20%									
2	E.1	Apply the method for drawing perspective using two vanishing points	Selection of scale Positioning of plan (rotation) Positioning of projection plan Placement of the projection center Height of the horizon line Elastic method			Appropriate selection of view			
2	E.2	Determine the production sequence.	Drawing of the vertical edge (point of sight on the projection plan) Height of the edge Drawing of the first series of vanishing lines toward the vanishing points Drawing of the last vertical edges and vanishing lines						
2	E.3	Use the elastic method.	Tracing technique						
2	E.4	Draw an arc or circle using perspective with two vanishing points.	Tracing technique						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 297– ARCHITECTURAL OBJECTS (Module 5)					Duration: 105 hours		
Statement of the Competency: <i>To produce drawings of architectural objects</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
2	E.5 Produce a final copy.	Use of vellum paper for layer Line weight		Appropriate level of detail Attractive presentation			
3	E Produce a perspective drawing of an object.			4 Production of an axonometric or perspective drawing of an object 4.1 Observance of the object’s proportions and forms 4.2 Accuracy of construction and projection lines 4.3 Clean presentation	30	15 10 5	PT PT PT
2	Work on their own.	Search for solutions to problems encountered Application of solutions found Educational Aim 1					
2	Recognize the importance of ensuring the quality of their work.	Quality criteria for different lines: thin, medium and heavy Meticulousness and concern for detail Positive attitude in the face of criticism Professional conscience					
4	E Produce a perspective drawing of an object.						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 297– ARCHITECTURAL OBJECTS (Module 5)					Duration: 105 hours		
Statement of the Competency: <i>To produce drawings of architectural objects</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE DRAWINGS OF ARCHITECTURAL OBJECTS</i>							
3	Produce drawings of architectural objects.			Observance of drafting conventions Observance of tracing techniques Observance of lettering techniques Appropriate use of international and imperial systems of measurement Observance of initial data Complete, accurate dimensioning Accurate drawing Clean presentation Selection of suitable scale			
<i>PRODUCE DRAWINGS OF ARCHITECTURAL OBJECTS</i>							
4	Produce drawings of architectural objects.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 297 – ARCHITECTURAL OBJECTS (Module 5)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce orthographic, section, axonometric or perspective drawings of architectural objects. This practical examination is divided into two parts: Part A lasts approximately four hours and covers the elements related to producing an orthographic and section projection. Part B lasts approximately two hours and is used to evaluate the candidates' ability to produce an axonometric or perspective drawing.

2 EXAMINATION PROCEDURE

Part A:

This task consists in using a drafting table and drafting instruments in order to draw and dimension the top, front and side view of the same projection, for example, an object with multiple angles or the volumetry of a dwelling with multiple roofs. The candidates must also draw a section as well as a symbol for each material. The balance of the layout and the line width are evaluated for these two drawings.

Note: This part may be evaluated separately, in which case the minimum performance standard would be 55 out of 70 marks.

Part B:

This task consists in using a drafting table, drafting instruments and initial data, that is an elevation and plan of an object (e.g. a piece of office furniture or a storeroom), in order to produce an axonometric or perspective drawing. The candidates must leave the construction lines visible so that the examiner may evaluate the tracing technique.

Note: This part may be evaluated separately, in which case the minimum performance standard would be 25 out of 30 marks.

3 MATERIALS

The following are required for the examination:

- vellum paper
- a drafting table
- drafting instruments
- a calculator

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

Note: Candidates who fail one of the parts of the examination need only redo the failed part.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 5 – Architectural Objects Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 297 RESULT: PASS ☐ FAIL ☐
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OBSERVATION		RESULT
	YES NO	
PART A:		
1	PRODUCTION OF AN ORTHOGRAPHIC PROJECTION OF AN ARCHITECTURAL OBJECT	
1.1	Appropriate selection of views	☐ ☐ 0 or 5
1.2	Accurate tracing of the various projection lines Tolerance: two errors	☐ ☐ 0 or 15
1.3	Complete, accurate dimensioning Tolerance: three errors	☐ ☐ 0 or 15
2	PRODUCTION OF THE DRAWING OF A SECTION	
2.1	Accurate representation of section views: - appropriate placement of section lines - appropriate information in the bubbles - correct orientation of the view according to the section line	☐ ☐ ☐ ☐ ☐ ☐ 0 or 10
2.2	Correct symbols for materials represented	☐ ☐ 0 or 5
3	QUALITY OF THE DRAWING	
3.1	Well-balanced layout	☐ ☐ 0 or 10
3.2	Appropriate, even line width	☐ ☐ 0 or 5
3.3	Clean presentation	☐ ☐ 0 or 5
RESULT OF PART A		/ 70

OBSERVATION			RESULT
	YES	NO	
PART B:			
4	PRODUCTION OF AN AXONOMETRIC OR PERSPECTIVE DRAWING OF AN OBJECT		
4.1	Observance of the object's proportions and forms Tolerance: two errors	☐ ☐	0 or 15
4.2	Accuracy of construction and projection lines Tolerance: two errors	☐ ☐	0 or 10
4.3	Clean presentation	☐ ☐	0 or 5
RESULT OF PART B			/ 30

PART A		PART B	
RESULT		RESULT	
/ 70		/ 30	
Minimum result required: 55 marks		Minimum result required: 25 marks	
Pass	☐ ☐ YES NO	Pass	☐ ☐ YES NO
Total: / 100			
Minimum performance standard: Pass of Parts A and B			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)					Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>							
COMPETENCY		LEARNING			EVALUATION		
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE ARCHITECTURAL PLANS FOR A SINGLE-FAMILY DWELLING</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
<i>A. INTERPRET THE INSTRUCTIONS</i>							
2	A.1 Become familiar with the work to be done.	Work methods Deadline Special instructions concerning the project					
2	A.2 Interpret the sketches.	Plans Elevations Sections Details, etc.					
2	A.3 Interpret the data.	Technical specifications for various materials: exterior surface coverings, doors and windows, etc.		Accurate interpretation of the initial data			
2	A.4 Interpret construction standards.	Types of structures Insulation Sealing Stairs, etc.					
2	A.5 Interpret municipal by-laws.	Category of building Leeway		Accurate interpretation of the municipal by-laws			
2	A.6 Demonstrate autonomy and initiative.	Educational Aim 1					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)						Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>								
COMPETENCY			LEARNING		EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
3	A	Interpret the instructions.						
B. DRAW, DIMENSION AND ANNOTATE THE FOUNDATION PLAN, THE FLOOR PLAN AND THE PLAN OF A STANDARD ROOF								
Duration: 25%								
2	B.1	Dimension the foundations in accordance with the data.	Footings Walls Floor slab Type of soil In accordance with customer’s note In accordance with information in the Code		Appropriate dimensions of foundations			
2	B.2	Position the foundations in accordance with data on the structure.	Wall footings Column footings Foundation walls		Accurate determination of the structure’s location Appropriate dimensions of footings			
2	B.3	Check the structure of the ground floor.	Beam Girder Joist					
2	B.4	Position the drains in accordance with the data.	Floor drain Agricultural drain					
2	B.5	Dimension and position the aboveground walls.	Components of aboveground walls Alignment on foundation walls Doors and windows					
2	B.6	Position the interior features.	Architectural components: partitions, doors, stairs, kitchen and bathroom fittings, electrical appliances, plumbing fixtures, etc.					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)							Duration: 120 hours			
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
2	B.7	Dimension and project the roofs.	Simple roofs with two or four slopes							
2	B.8	Dimension and annotate the plans.	Foundation plan: - footings - exterior limit of walls - centre of openings - openings - structure - partitions - angles Floor plan: - exterior of structure - centre of openings - openings, etc. Roof plan: - roof plan - roof overhang							
2	B.9	Show concern for the consequences of their work.	Educational Aim 2							
3	B	Draw, dimension and annotate the foundation plan, the floor plan and the plan of a standard roof.			1 Standard dimensions of architectural components 1.1 Accurate information	10	10	T		
C. DRAW, DIMENSION AND ANNOTATE SINGLE FLIGHT STAIRS										Duration: 10%
2	C.1	Calculate the steps.	Height/depth ratio Stair nose Observance of standards Accurate calculations		Accurate calculations					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)							Duration: 120 hours			
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
2	C.2	Dimension the balustrade.	Handrail and balusters Observance of standards							
2	C.3	Draw the stairs.	Standards used to draw stairs			Observance of standards used to draw stairs				
2	C.4	Dimension and annotate the stairs.	Stairs and balustrade							
3	C	Draw, dimension and annotate single flight stairs.								
D. DRAW, DIMENSION AND ANNOTATE SIMPLE ELEVATIONS										Duration: 15%
2	D.1	Determine the levels, axes and dimensions of the envelope.	Height of walls Dimensions of floors Components of aboveground and underground walls Roof components							
2	D.2	Project the elevations in accordance with the plans.	Walls and roofs Doors and windows Chimney, etc.							
2	D.3	Annotate the elevations.	Levels, dimensions and notes							
3	D	Draw, dimension and annotate simple elevations.				2 Elevation drawing 2.1 Observance of axes 2.2 Accurate location of the different components of the façades 2.3 Accurate identification of the floor levels and components of the façades	40	10 15 5	PT PT PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)							Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
						2.4 Conformity of roof with the initial data		10	PT
E. DRAW, DIMENSION AND ANNOTATE LONGITUDINAL OR TRANSVERSAL SECTIONS, STANDARD COMPONENT WALL SECTIONS AND SIMPLE DETAILS									
Duration: 20%									
2	E.1	Determine the levels and axes of a general section.	Height of walls, floors and roofs Placement of axis lines			Observance of axes			
2	E.2	Determine the dimensions of the envelope according to the components.	Dimensions of footings and floor slabs Dimensions of underground and aboveground walls Dimensions of floors Dimensions of roof slopes						
2	E.3	Draw a wall section and detail.	Alignment of envelope components Sequence of materials Arrangement of materials: - continuity of insulation materials - continuity of air/vapour barrier materials - concern for water infiltration			Appropriate selection of sections and details			
3	E	Draw, dimension and annotate longitudinal or transversal sections, standard component wall sections, and simple details.			3	Drawing of a standard component wall section	40	10	PT
					3.1	Application of construction conventions			
					3.2	Observance of sequence of materials			
					3.3	Complete, accurate notes			
					3.4	Conformity of drawing with the initial data			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)							Duration: 120 hours				
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St		
<i>F. DRAW, DIMENSION AND ANNOTATE A LAYOUT PLAN ON FLAT GROUND</i>										<i>Duration: 5%</i>	
2	F.1	Interpret a survey plan.	North Road Boundary Servitudes Lot lines: - level lines, etc.								
2	F.2	Apply municipal by-laws to the construction site.	Front setback Side setback Rear setback Right of way Height of the dwelling Car shelter Windows, etc.								
2	F.3	Develop the lot according to the customer’s needs and to municipal by-laws.	Driveway Installation of patio Installation of pool Installation of storage shed, etc. Septic field Artesian well			Observance of municipal by-laws					
3	F	Draw, dimension and annotate a layout plan on flat ground.									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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7

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)							Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
G. HAVE THE WORK APPROVED Duration: 2%									
2	G.1	Show concern for verifying the conformity of their work.	Links with initial data Consistency throughout the drawings Educational Aim 5						
2	G.2	Present their work.	Logical steps in the presentation Approval process and elements essential to the presentation Corrections, if necessary Openness to criticism			Observance of approval procedure Clear presentation of project			
2	G.3	Make corrections.	In accordance with requirements Within the requested timeframe						
3	G	Have the work approved.							
H. PRINT THE DRAWINGS Duration: 3%									
2	H.1	Use software for printing.	See Module 4						
2	H.2	Use a photocopier for plans.	Method of operation						
3	H	Print the drawings.				Well-balanced layout Selection of suitable scale			
PRODUCE ARCHITECTURAL PLANS FOR A SINGLE-FAMILY DWELLING Duration: 5%									
3	Produce architectural plans for a single-family dwelling.					Appropriate use of computer system and software Observance of the <i>National Building Code</i>			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

8

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)						Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
				Appropriate use of reference materials Appropriate use of international and imperial systems of measurement Conformity of drawings with the initial data Consistency throughout drawings Accurate drawings Customer satisfaction Observance of time limit 4 Drafting conventions 4.1 Observance of drafting conventions 5 Dimensions and notes 5.1 Complete, accurate dimensions and notes	 <			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

9

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)							Duration: 120 hours	
Statement of the Competency: <i>To produce architectural plans for a single-family dwelling</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE ARCHITECTURAL PLANS FOR A SINGLE-FAMILY DWELLING</i>								
5	PRODUCE ARCHITECTURAL PLANS FOR A SINGLE-FAMILY DWELLING.	More complex plans (e.g. with levels, recesses or projections, offsets, etc.) More complex roof (e.g. roof with dormer) More complex stairs (e.g. two flights)						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 308 – ARCHITECTURAL PLANS: SINGLE-FAMILY DWELLINGS (Module 6)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce architectural plans for a single-family dwelling. The suggested duration is eight hours. This examination consists of a theory component and a practical component. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given the following:

- a sketch of a single-family dwelling (if required)
- unfinished architectural plans (foundation plan, ground floor plan, storey plan, two elevations, an unfinished wall section)

Task 1 consists in researching the standard dimensions of architectural components.

The examiner will give the candidates a list (or drawing) with at least 12 objects, such as partitions, doors, stairs, washer and dryer, refrigerator, kitchen counter, bathroom counter, dishwasher, stove, twin bed, double bed, kitchen table, sofa, chair, office desk, etc.

The candidates may consult their course notes or any other relevant documents. They may record their results on a sheet provided for this purpose, and have approximately one hour for this task.

Task 2 consists in drawing, dimensioning and annotating an elevation using:

- architectural plans
- two elevations provided

Candidates have approximately three hours for this task.

Note: Tasks 2 and 3 are used to evaluate criteria 4.1 and 5.1.

Task 3 consists in completing the drawing, dimensions and notes of a wall section using:

- an unfinished wall section
- the description of the building envelope
- architectural plans

Candidates have approximately four hours for this task.

3 MATERIALS

The following are required for the examination:

- a drafting table and drafting materials, or a computer and drafting software

4 SPECIAL INSTRUCTIONS

The teacher will decide whether the examination will be done at a drafting table or on computer.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 6 – Architectural Plans: Single-Family Dwellings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 308 RESULT: <table style="width: 100%;"> <tr> <td style="text-align: center;">PASS</td> <td style="text-align: center;">FAIL</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table>	PASS	FAIL	☐	☐
PASS	FAIL				
☐	☐				

OBSERVATION		RESULT
	YES NO	
1	STANDARD DIMENSIONS OF ARCHITECTURAL COMPONENTS	
1.1	Accurate information Tolerance: two errors	☐ ☐ 0 or 10
2	ELEVATION DRAWING	
2.1	Observance of axes:	
	- alignment of walls with axes	☐ ☐
	- alignment of roof with axes	☐ ☐
		0 or 10
2.2	Accurate location of the different components of the façades:	
	- walls, recessed walls, cantilever, etc.	☐ ☐
	- doors and windows	☐ ☐
	- direction in which windows open	☐ ☐
	- chimney, balcony, columns, etc.	☐ ☐
	- materials	☐ ☐
	Tolerance: two errors	0 or 15

OBSERVATION			RESULT
	YES	NO	
2.3 Accurate identification of the floor levels and components of the façades:			
- basement slab	☐	☐	
- floors of the ground floor, other storeys, and others if necessary	☐	☐	
- wall plates	☐	☐	
- soil level	☐	☐	
- flanges	☐	☐	0 or 5
Tolerance: one error			
2.4 Conformity of roof with the initial data:			
- correspondence of different roofs to the initial project	☐	☐	
- exact slope of roofs	☐	☐	
- exact height	☐	☐	0 or 10
3 DRAWING OF A STANDARD COMPONENT WALL SECTION			
3.1 Application of construction conventions:			
- alignment of aboveground wall with the foundation wall	☐	☐	
- continuity of air and vapour barrier	☐	☐	
- continuity of insulation	☐	☐	
- sealing of building	☐	☐	0 or 10
3.2 Observance of sequence of materials:			
- correct sequence of materials	☐	☐	0 or 10
3.3 Complete, accurate notes:			
- accurate nomenclature	☐	☐	
- complete, accurate separate notes	☐	☐	0 or 10
Tolerance: one error			
3.4 Conformity of drawing with the initial drawing:			
- complete, accurate details	☐	☐	
- compliance with sketch	☐	☐	
- observance of specifications	☐	☐	0 or 10

OBSERVATION			RESULT
	YES	NO	
4 DRAFTING CONVENTIONS			
4.1 Observance of drafting conventions:			
- conformity of lines	☐	☐	0 or 5
- conformity of symbols	☐	☐	
5 DIMENSIONS AND NOTES			
5.1 Complete, accurate dimensions and notes:			
- accurate dimensions	☐	☐	0 or 5
- complete notes	☐	☐	
- well-placed, clear dimensions and notes	☐	☐	
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

755 002 – HEALTH AND SAFETY ON CONSTRUCTION SITES (Module 7)					Duration: 30 hours	
Statement of the Competency: <i>To apply concepts of health and safety on construction sites</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
PHASE 1: AWARENESS OF THE HAZARDS RELATED TO THE CONSTRUCTION INDUSTRY						
		Duration: 20%				
1.1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other modules				
1.2	Interpret the English and French terminology related to safety rules and measures.	Terminology of manufacturers, the Commission de la santé et de la sécurité du travail (CSST) and the industry Sources of information				
1.3	Be receptive to information related to prevention in matters of occupational health and safety.	Conditions indicative of being receptive: favourable atmosphere, interest, concentration, physical and psychological well-being, cooperation				
1.4	Recognize the main steps involved in a methodical search for information.					
1.5	Show concern for sharing their perception of occupational health and safety with other members of the group.	Personal assessment of their perception				
1.6	Learn about the hazards related to construction sites.	Risks of lesions and injury Risks of diseases Stress		1 Gather information. 1.1 Consult sources of information made available to them.	25	25
1.7	Learn about the standards and regulations governing health and safety on construction sites.	Obligations, rights and role of the various parties				
1.8	Learn about the measures to be taken in the case of an emergency.	Emergency plan, first aid, first-aid kit and register, etc.				

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

755 002 – HEALTH AND SAFETY ON CONSTRUCTION SITES (Module 7)					Duration: 30 hours	
Statement of the Competency: <i>To apply concepts of health and safety on construction sites</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
1.9	Reflect on the importance of being competent in matters of occupational health and safety.	Advantages of balance Impact on the operator’s health Importance of prevention		Describe the advantages of observing standards and regulations governing occupational health and safety.		
PHASE 2: ACTIVE ROLE IN PREVENTION						
Duration: 65%						
2.1	Try out situations requiring risk prevention and the elimination of hazards.	With respect to the environment, facilities, equipment and machinery, materials and tools, energy sources, etc.		2 Describe occupational hazards. 2.1 List the risky behaviours observed on a construction site as well as the applicable preventive measures. 2.2 List the hazards associated with facilities, equipment and tools as well as the applicable preventive measures.	50	25
2.2	Participate in activities that require the recognition of the hazards related to transporting loads and constraining work positions.					
2.3	Participate in activities that require the recognition of symbols and signals related to risk prevention.	Hazardous products, road work, transportation of hazardous materials, etc.				
2.4	Compare the risky behaviours observed on a construction site and identify the basic principles of safe conduct.			3 Participate in activities. 3.1 Participate conscientiously in the proposed activities. List of principles of safe conduct	25	25
PHASE 3: PERSONAL ASSESSMENT						
Duration: 15%						
3.1	Present a personal assessment of what they have learned during this module.	Summary of newly acquired knowledge and skills Evaluation of their attitude regarding occupational health and safety Objectives and means to take to improve themselves		Present a personal assessment.		

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

755 002 – HEALTH AND SAFETY ON CONSTRUCTION SITES (Module 7)

INFORMATION ON THE EVALUATION

Evaluation of the candidates' participation is based on information gathered at different times during the learning activities. However, a final judgment of each criterion component should be made only at the end of the corresponding phase in the learning situation.

The evaluation should not focus on the accuracy of the candidates' perceptions or opinions, but rather on whether they have based their perceptions or opinions on arguments or examples.

PHASE 1: AWARENESS OF THE HAZARDS RELATED TO THE CONSTRUCTION INDUSTRY

1 GATHER INFORMATION

1.1 Consult sources of information made available to them.

Candidates must consult the documents suggested by the teacher.

PHASE 2: ACTIVE ROLE IN PREVENTION

2 DESCRIBE OCCUPATIONAL HAZARDS

2.1 List the risky behaviours observed on a construction site as well as the applicable preventive measures.

2.2 List the hazards associated with facilities, equipment and tools as well as the applicable preventive measures.

Candidates must make a link between the risky behaviours and facilities and the safe behaviours or measures to adopt.

3 PARTICIPATE IN ACTIVITIES

3.1 Participate conscientiously in the proposed activities.

Candidates must listen carefully to the teacher's explanations. They must complete the questionnaires proposed and show interest in correcting their errors.

PARTICIPATION EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING	Program code:	5750
7 – Health and Safety on Construction Sites	Module code:	755 002
Candidate's name: _____		
School: _____	RESULT:	
Permanent: _____	PASS	FAIL
Date of examination: _____	☐	☐
Examiner's signature: _____		

PARTICIPATION COMPONENTS	RESULT YES NO	
1 GATHER INFORMATION		
1.1 Consult sources of information made available to them.	☐	☐
2 DESCRIBE OCCUPATIONAL HAZARDS		
2.1 List the risky behaviours observed on a construction site as well as the applicable preventive measures.	☐	☐
2.2 List the hazards associated with facilities, equipment and tools as well as the applicable preventive measures.	☐	☐
3 PARTICIPATE IN ACTIVITIES		
3.1 Participate conscientiously in the proposed activities.	☐	☐
Pass/fail conditions: 3 YESes out of a possible 4, and a YES for component 3.1		

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)						Duration: 75 hours		
Statement of the Competency: <i>To use the advanced functions of drafting software applications</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
USE THE ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
A. MANAGE A LIBRARY OF SYMBOLS (BLOCK)								
Duration: 20%								
2	A.1 Create blocks containing attributes	Review of Module 4 Definitions of attributes Insertion point of the attribute contained in the block Attribute’s text height Command for selecting desired height on paper Importance of appropriate justification		Correct insertion of a drawing in the form of a reference folder				
2	A.2 Modify the attributes.	Modification before or after transformation into a block						
2	A.3 Export attributes.	SDF, XLS (Excel) formats						
2	A.4 Insert blocks containing attributes.	Review of Module 4 Insertion scale System variables						
2	A.5 Insert a library of blocks.	In a reference folder Update of blocks already inserted in a drawing						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)							Duration: 75 hours				
Statement of the Competency: <i>To use the advanced functions of drafting software applications</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
3	A	Manage a library of symbols (block).				1	Management of a library of blocks with attributes	15			
						1.1	Correct use of commands for creating, modifying and exporting blocks with attributes		10	PT	
						1.2	Correct insertion, placement and orientation of a block and its attributes		5	PT	
B. MANAGE A REFERENCE DRAWING										Duration: 30%	
2	B.1	Use reference drawings.	Background, work sharing								
2	B.2	Differentiate the ways of overlaying a reference drawing.	In the appropriate system of measurement 1=1 in paper space								
2	B.3	Use the options in the dialogue box for managing reference drawings.	Attach, detach, reload, unload, etc.			Appropriate use of commands for: - redefining and fusing a reference drawing - fusing a block sub-entity in a reference file					
3	B	Manage a reference document.				2	Management of a reference drawing	15			
						2.1	Appropriate use of commands for external reference blocks		5	PT	
						2.2	Inclusion of all required files		10	PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

2005-01-31

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)							Duration: 75 hours					
Statement of the Competency: <i>To use the advanced functions of drafting software applications</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St		
C. CREATE A LAYOUT										Duration: 20%		
2	C.1	Use the presentation environment.	Review of Module 4 Insertion in the model while remaining in presentation mode Fundamental difference between paper space and model space									
2	C.2	Insert the appropriate border(s).	In the appropriate system of measurement 1=1 in paper space									
2	C.3	Create several views in the drawing.	Use of views to visualize all or part of the drawing									
2	C.4	Establish the scale ratios in the views.	Importance of not zooming in or out in the view Use of scale locking									
2	C.5	Use page layout tools.	Layout according to colour, new layout definition, layout dialogue box Layout for an object or layer									
2	C.6	Manage layer states.	Visualization of the desired components in each of the views On/off Frozen/thawed Locked/unlocked Plot/no plot									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)							Duration: 75 hours				
Statement of the Competency: <i>To use the advanced functions of drafting software applications</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	C.7	Dimension in the different views.	Modification of the parameters of the dimensioning style Dimensioning in the appropriate layers and selective freeze in the views								
2	C.8	Apply hatching.	According to the materials used								
2	C.9	Insert symbols.	In an appropriate environment according to the required symbols								
3	C	Create a layout.				3	Creation of a layout	70			
						3.1	Mastery of the layout (paper space) environment		10	PT	
						3.2	Insertion of a border in the appropriate environment		5	PT	
						3.3	Mastery of commands for dimensioning		15	PT	
						3.4	Mastery of commands for managing layers		10	PT	
						3.5	Mastery of commands for establishing the scale ratio		15	PT	
						3.6	Appropriate management of printing parameters	15	PT		
D. CUSTOMIZE TOOLS										Duration: 10%	
2	D.1	Modify existing toolbars.	Regrouping of most frequently used tools								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)						Duration: 75 hours			
Statement of the Competency: <i>To use the advanced functions of drafting software applications</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
2	D.2 Create new toolbars.	Creation of new buttons Macro command Creation of the icon for a button Creation of drop-down buttons		Use of appropriate commands for customizing toolbars and menus					
2	D.3 Customize a menu.	Structure, addition of a menu, macro command							
3	D Customize tools.								
USE THE ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS									Duration: 15%
2	Show concern for developing lifelong learning skills.	Importance of keeping abreast of drafting software and computer developments Educational Aim 6							
3	Use the advanced functions of drafting software applications.			Appropriate use of technical documents Appropriate use of materials					
USE THE ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS									Duration: 5%
(including evaluation for the purpose of certification)									
4	USE THE ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)						Duration: 75 hours		
Statement of the Competency: <i>To use the advanced functions of drafting software applications</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
USE THE ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS								
5	USE THE ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS.	Library of blocks with more complex attributes More complex page layout More stringent requirements regarding the management of dimensions						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 315 – ADVANCED FUNCTIONS OF DRAFTING SOFTWARE APPLICATIONS (Module 8)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to use the advanced functions of drafting software applications. The suggested duration of this practical examination is five hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given the following:

- a plan to be reproduced, for example a floor plan for a small commercial building, an office building, a restaurant, etc.
- a furniture sketch with dimensions

Task 1 consists in reproducing a drawing of a piece of furniture, such as a desk, a table or a bookshelf, and in creating a block with different attributes relating to the furniture, on the basis of:

- a furniture plan
- dimensions
- instructions concerning the attributes to be associated with the block

Candidates have approximately 1 hour for this task.

Task 2 consists in reproducing a drawing of part of a floor plan of a building or in reproducing a drawing of a floor plan of a small building, on the basis of:

- architectural plans
- dimensions
- instructions concerning the layers to be created
- instructions concerning line weights

Candidates have approximately 2 hours for this task.

Task 3 consists in joining the two drawings (Task 1 and 2 of the evaluation) to create an external reference drawing on the basis of:

- instructions regarding the location and direction of insertion into the external reference drawing

Candidates have approximately 30 minutes for this task.

Task 4 consists in creating a layout.

The candidates must:

- create three views in three different scales in the paper space environment
- insert a border and a titleblock
- define the parameters of the dimensions according to the different scales in each view
- manage the layers for each of the views created in the layout (paper space) environment according to the examiner's instructions (e.g. open furniture layer, closed furniture layer)
- print the drawings according to the layout and the different scales provided by the examiner on the basis of:
 - instructions concerning the views and number of views to be created
 - instructions concerning scales
 - a titleblock saved as a block with attributes

Note: Candidates will be allowed to print two copies.

Candidates have approximately 1 hour 30 minutes for this task.

3 MATERIALS

The following is required for the examination:

- a computer equipped with drafting software

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 8 – Advanced Functions of Drafting Software Applications	Program code: 5750 Module code: 825 315
Candidate's name: _____	
School: _____	RESULT:
Permanent code: _____	PASS FAIL ☐ ☐
Date of examination: _____	
Examiner's signature: _____	

OBSERVATION			RESULT
	YES	NO	
1 MANAGEMENT OF A LIBRARY OF BLOCKS WITH ATTRIBUTES			
1.1 Correct use of commands for creating, modifying and exporting blocks with attributes:			
- symbols drawn correctly	☐	☐	
- appropriate dimension symbols	☐	☐	
- symbols drawn on the correct layer	☐	☐	0 or 10
Tolerance: one error			
1.2 Correct insertion, placement and orientation of a block and its attributes	☐	☐	0 or 5
2 MANAGEMENT OF A REFERENCE DRAWING			
2.1 Appropriate use of commands for external reference blocks	☐	☐	0 or 5
2.2 Inclusion of all required files	☐	☐	0 or 10
3 CREATION OF A LAYOUT			
3.1 Mastery of the layout (paper space) environment:			
- exact number of views created	☐	☐	
- correct selection of the different perspectives requested	☐	☐	
- accurate scale	☐	☐	0 or 10

OBSERVATION			RESULT
	YES	NO	
3.2 Insertion of a border in the appropriate environment	☐	☐	0 or 5
3.3 Mastery of commands for dimensioning:			
- dimensioning style corresponding to building drafting standards	☐	☐	
- positioning of dimensions according to the building	☐	☐	
- consistent dimensions throughout the different views	☐	☐	0 or 15
Tolerance: two errors			
3.4 Mastery of commands for managing layers:			
- appropriate layers according to the drawing	☐	☐	
- correct closing and opening according to the different perspectives	☐	☐	
- correct nomenclature regarding the different layers	☐	☐	0 or 10
3.5 Mastery of commands for establishing the scale ratio	☐	☐	0 or 15
3.6 Appropriate management of printing parameters	☐	☐	0 or 15
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)					Duration: 60 hours		
Statement of the Competency: <i>To produce reinforced concrete drawings</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE REINFORCED CONCRETE DRAWINGS</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
<i>A. PLAN THE WORK</i>							
2	A.1 Interpret the initial data.	Review of Module 6 Type of plan (commercial or residential) System of measurement (imperial or international) <i>National Building Code</i> Technical documents Catalogue					
2	A.2 Interpret calculations and notes.	Grade Length of sealing Length of surface covering Protective distance of the reinforcement Details Abbreviations Tables Legends					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)							Duration: 60 hours		
Statement of the Competency: <i>To produce reinforced concrete drawings</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	A.3	List the drawings to be produced.	Review of Module 6 According to project complexity Number of storeys Sections, details Plan view			Complete list of drawings to be produced			
2	A.4	Establish a work schedule.	Review of Module 6 Project complexity Estimate of time			Realistic estimate of time needed to do the work			
2	A.5	Recognize the importance of organizing the work.	Sufficient materials for performing the tasks Orderly, functional workstation Filing of work documents Planning of future work Educational Aim 4						
3	A	Plan the work.				1 Reading of working drawings 1.1 Accurate interpretation of drawings, calculations and notes	10	10	PT
B. DRAW, DIMENSION AND ANNOTATE FOOTINGS AND FOUNDATION WALLS									
Duration: 10%									
2	B.1	Determine the location of axes.	Centered or aligned with columns, pilasters and foundation walls Symbols (bubbles, numbers and letters)						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)							Duration: 60 hours				
Statement of the Competency: <i>To produce reinforced concrete drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St		
2	B.2	Position the footings and foundation walls in accordance with structural data.	Wall footings Footings of columns, pilasters and pillars Foundation walls								
2	B.3	Dimension the footings and foundation walls.	Axes Foundations Footings of walls, columns, pilasters and pillars Table of flanges			Accurate drawing of the reinforcement					
3	B	Draw, dimension and annotate footings and foundation walls.				2 Location and dimension of footings and walls 2.1 Accurate location of footings and walls 2.2 Accurate dimensions of footings and walls 2.3 Accurate location of axes	20				
								10	PT		
								5	PT		
								5	PT		
C. DRAW, DIMENSION AND ANNOTATE BEAMS AND COLUMNS										Duration: 10%	
2	C.1	Determine the location of axes.	Centered or aligned with columns, pilasters and foundation walls			Observance of axes					
2	C.2	Position the beams and columns.	Beams Columns Pilasters Pillars			Accurate drawing of the reinforcement					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

2005-01-31

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)								Duration: 60 hours			
Statement of the Competency: <i>To produce reinforced concrete drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	C.3	Dimension the beams and columns.	In accordance with the axes Makes Table of beams Table of columns								
3	C	Draw, dimension and annotate beams and columns.				3	Location and dimension of beams and columns	15			
						3.1	Accurate location of beams and columns		10	PT	
						3.2	Accurate dimensions of beams and columns		5	PT	
D. DRAW, DIMENSION AND ANNOTATE FLOOR SLABS AND ROOF SLABS										Duration: 10%	
2	D.1	Determine the location of axes.	Centered or aligned with columns, pilasters and foundation walls Symbols (bubbles, numbers and letters)								
2	D.2	Determine the location and dimension of the reinforcement.	In the floor slab In the roof slab In accordance with established standards								
3	D	Draw, dimension and annotate floor slabs and roof slabs.				4	Drawings, dimensions and notes concerning floor slabs or roof slabs	15			
						4.1	Accurate drawing of the reinforcement		10	PT	
						4.2	Accurate location of axes		5	PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)							Duration: 60 hours					
Statement of the Competency: <i>To produce reinforced concrete drawings</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
E. DRAW, DIMENSION AND ANNOTATE THE DETAILS										Duration: 12%		
2	E.1	Determine the location of axes.	Centered or aligned with columns, pilasters and foundation walls In accordance with plans									
2	E.2	Determine the location and dimension of the reinforcement.	Footings Foundation walls Columns, pilasters, pillars Slabs Beams			Appropriate selection of details						
3	E	Draw, dimension and annotate the details.				5 Drawings, dimensions and notes of details 5.1 Accurate drawing of the reinforcement 5.2 Accurate location of axes	15		PT PT			
F. DESIGN THE REINFORCEMENT PANELS										Duration: 5%		
2	F.1	Prepare a list of tables.	Table of studs Table of beams Table of flanges									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)							Duration: 60 hours			
Statement of the Competency: <i>To produce reinforced concrete drawings</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	F.2	List the data concerning the reinforcement of each component: flange, column, beam, foundation wall and slab.	Details to be included on the list: - type of reinforcement (make) - dimensions - grade - quantity - model number - location - stirrups - pins - ligatures			Appropriate use of reference documents				
3	F	Design the reinforcement panels.				6	Reinforcement panels	10		
						6.1	Complete, accurate data of reinforcement panels		5	PT
						6.2	Consistency throughout drawings		5	PT
G. WRITE THE GENERAL NOTES RELATED TO THE COMPOSITION OF CONCRETE										
Duration: 2%										
2	G.1	Write the general notes.	Notes relating to: - resistance of concrete (Mpa or psi) - percentage of occluded air - minimum bearing capacity of the soil (Kpa or psi) - concrete covering on the reinforcement - placement of metal trellis in the slabs - the procedure to be followed on the construction site - standards (CSA)			Appropriate use of reference documents				
3	G	Write the general notes related to the composition of concrete.				7	General notes	5		
						7.1	Complete, accurate notes		5	PT

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

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825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)							Duration: 60 hours					
Statement of the Competency: <i>To produce reinforced concrete drawings</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
H. HAVE THE WORK APPROVED										Duration: 10%		
2	H.1	Check the conformity of their work.	Links with initial data Consistency throughout drawings Educational Aim 5									
2	H.2	Present their work.	Logical steps in the presentation Approval process and elements essential to the presentation Corrections, if necessary Openness to criticism			Observance of approval procedure Clear presentation of the project						
2	H.3	Make the corrections.	In accordance with requirements Within the requested timeframe									
3	H	Have the work approved.										
I. PRINT THE DRAWINGS										Duration: 1%		
2	I.1	Determine the printing scale.	In accordance with the page format used									
2	I.2	Use a photocopier for plans.	Method of operation									
3	I	Print the drawings.				8 Printing of drawings 8.1 Well-balanced layout 8.2 Selection of suitable scale	10	5 5				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

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825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)					Duration: 60 hours		
Statement of the Competency: <i>To produce reinforced concrete drawings</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE REINFORCED CONCRETE DRAWINGS</i> <i>Duration: 10%</i>							
3	Produce reinforced concrete drawings.			Appropriate use of computer system and software Observance of applicable standards and codes Observance of drafting conventions Conformity of drawings with initial plans Observance of time limit			
2	Work on their own.	Search for solutions to problems encountered Application of solutions found Educational Aim 1					
2	Work effectively.	Importance of deadlines Discernment with respect to the quality of their work					
<i>PRODUCE REINFORCED CONCRETE DRAWINGS</i> <i>Duration: 5%</i>							
(including evaluation for the purpose of certification)							
4	PRODUCE REINFORCED CONCRETE DRAWINGS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES
RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

9

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)						Duration: 60 hours		
Statement of the Competency: <i>To produce reinforced concrete drawings</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE REINFORCED CONCRETE DRAWINGS</i>								
5	PRODUCE REINFORCED CONCRETE DRAWINGS.	Addition of construction details: - foundation - column - pilaster - flange, etc.						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 324 – REINFORCED CONCRETE DRAWINGS (Module 9)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce reinforced concrete drawings. The suggested duration of this practical examination is four hours.

2 EXAMINATION PROCEDURE

Task 1 consists in interpreting a reinforced concrete drawing using a questionnaire.

Note: Candidates have approximately 30 minutes for this task.

Task 2 consists in using a computer to produce a working drawing of a small reinforced concrete commercial building on the basis of sketches and technical documents. The candidates must:

- draw and dimension the footings and foundation walls
- draw and dimension the beams and columns
- draw and dimension a floor slab or a roof slab
- draw and dimension a detail
- design a table of studs and a table of flanges using the information provided
- write the general notes related to the composition of concrete on the basis of the information provided

Note: Candidates will have approximately 3 hours 30 minutes for this task.

They must do the page layout as requested and print their work.

3 MATERIALS

The following are required for the examination:

- a computer equipped with various software
- peripherals
- a calculator
- electronic files
- reinforced concrete drawings
- specifications
- various current codes and standards
- technical documents

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 9 – Reinforced Concrete Drawings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 324 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 READING OF WORKING DRAWINGS			
1.1 Accurate interpretation of drawings, calculations and notes	☐	☐	0 or 10
2 LOCATION AND DIMENSION OF FOOTINGS AND WALLS			
2.1 Accurate location of footings and walls Tolerance: one error	☐	☐	0 or 10
2.2 Accurate dimensions of footings and walls	☐	☐	0 or 5
2.3 Accurate location of axes	☐	☐	0 or 5
3 LOCATION AND DIMENSION OF BEAMS AND COLUMNS			
3.1 Accurate location of beams and columns Tolerance: one error	☐	☐	0 or 10
3.2 Accurate dimensions of beams and columns	☐	☐	0 or 5

OBSERVATION			RESULT	
		YES	NO	
4	DRAWINGS, DIMENSIONS AND NOTES CONCERNING FLOOR SLABS OR ROOF SLABS			
4.1	Accurate drawing of the reinforcement:			
	- accurate placement of the reinforcement	☐	☐	0 or 10
	- accurate symbols used for reinforcement	☐	☐	
4.2	Accurate location of axes	☐	☐	0 or 5
5	DRAWINGS, DIMENSIONS AND NOTES OF DETAILS			
5.1	Accurate drawing of the reinforcement	☐	☐	0 or 10
	Tolerance: one error			
5.2	Accurate location of axes	☐	☐	0 or 5
6	REINFORCEMENT PANELS			
6.1	Complete, accurate data of reinforcement panels	☐	☐	0 or 5
	Tolerance: one error			
6.2	Consistency throughout drawings	☐	☐	0 or 5
7	GENERAL NOTES			
7.1	Complete, accurate notes	☐	☐	0 or 5
8	PRINTING OF DRAWINGS			
8.1	Well-balanced layout	☐	☐	0 or 5
8.2	Selection of suitable scale	☐	☐	0 or 5
			Total:	/ 100
Minimum performance standard: 80 marks				

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 332 – CONSTRUCTION SITE DATA (Module 10)						Duration: 30 hours		
Statement of the Competency: <i>To record construction site data</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
RECORD CONSTRUCTION SITE DATA								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
A. PLAN THE WORK								
2	A.1 Verify the working conditions.	Work team Building under construction, renovation or expansion Exterior or interior Access to site						
2	A.2 Plan for the equipment required.	Existing plans, sketch, old records Measuring instruments Protective gear Drawing materials						
3	A Plan the work.			1 Planning of work 1.1 Appropriate selection of basic plans, drawing materials, measuring instruments and protective gear	5	5	PT	
B. PRODUCE SKETCHES								
2	B.1 Estimate the site visually.	Guidelines Physical references Basic concepts						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 332 – CONSTRUCTION SITE DATA (Module 10)							Duration: 30 hours			
Statement of the Competency: <i>To record construction site data</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	B.2	Represent the main components of a site.	Location of the structure Exterior walls Stairwell and elevator Sanitary facilities Proportional, accurate representation							
2	B.3	Represent the secondary components.	Interior partitions Openings Kitchen, secondary bathrooms Ceilings Furniture and fixtures							
2	B.4	Represent the mechanical and electrical components.	Ventilation: - ventilators - grilles - diffusers - air ducts, etc. Plumbing: - toilets - sinks - waste and vent stacks - main branch lines - water pipe fittings - water service line - sewers, etc. Electricity: - service entrance - service box, etc.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 332 – CONSTRUCTION SITE DATA (Module 10)					Duration: 30 hours		
Statement of the Competency: <i>To record construction site data</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
3	B Produce sketches.			2 Basic sketch 2.1 Observance of proportions 2.2 Accurate linework	20	10 10	PT PT
C. TAKE MEASUREMENTS, NOTES AND PHOTOGRAPHS							
Duration: 25%							
2	C.1 Establish the order of priority.	Step 1: main components Step 2: secondary components Step 3: equipment: - verification of measurements - accurate measurements					
2	C.2 Use measuring instruments.	Measuring tape Laser measuring instrument (if necessary) Consistency with existing plans (international or imperial system)		Appropriate use of measuring instruments			
2	C.3 Take notes.	Selection of required dimensions and notes Legible dimensions and notes					
2	C.4 Select the views.	General and detail views Codification of views Identification of photographs					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 332 – CONSTRUCTION SITE DATA (Module 10)							Duration: 30 hours			
Statement of the Competency: <i>To record construction site data</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
3	C	Take measurements, notes and photographs.			3 Measurements, notes and photographs		25			
					3.1 Accurate measurements					
					3.2 Appropriate selection of views					
					3.3 Accurate notes					
					3.4 Legible notes					
<i>D. LIST THE BUILDING EQUIPMENT</i>										
2	D.1	List the ventilation equipment.	Central ventilation system Grilles Diffusers Air ducts, etc. Description of equipment			Accurate entry of data into the computer				
2	D.2	List the plumbing fixtures.	Toilet Washbasin Sink Shower Bath Waste and vent stack Main branch line Water pipe fittings Sewers, etc. Description of fixtures							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 332 – CONSTRUCTION SITE DATA (Module 10)							Duration: 30 hours				
Statement of the Competency: <i>To record construction site data</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	D.3	List the electrical equipment.	Service entrance Service box Electric heating Specific equipment, etc. Description of equipment								
3	D	List the building equipment.	Accurate data and complete list Links between the list and the sketches and existing plans			4	List of equipment on the site (building mechanics and fixed furnishings)	20			
						4.1	Accurate data		10	PT	
						4.2	Complete list		10	PT	
E. CARRY OUT THE LAYOUT										Duration: 20%	
2	E.1	Produce the drawings in the order of priority.	Structure Exterior walls Stairwell Sanitary facilities Interior partitions Openings, etc.			Suitable scale for printing					
2	E.2	Verify any errors or subsequent adjustments.	Accurate calculations Clear notes								
3	E	Carry out the layout.				5	Layout	20			
						5.1	Accurate drawing		10	PT	
						5.2	Accurate data entry		10	PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 332 – CONSTRUCTION SITE DATA (Module 10)							Duration: 30 hours		
Statement of the Competency: <i>To record construction site data</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
RECORD CONSTRUCTION SITE DATA <i>Duration: 5%</i>									
(including evaluation for the purpose of certification)									
4	RECORD CONSTRUCTION SITE DATA.				Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
RECORD CONSTRUCTION SITE DATA									
5	RECORD CONSTRUCTION SITE DATA.	Data on a room that includes more architectural components and equipment, for example: - more windows - more furniture - more structural components - ceiling with reliefs - light fixtures, etc.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 332 – CONSTRUCTION SITE DATA (Module 10)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to record construction site data on a room containing structural and mechanical components. The suggested duration of the examination is two hours. Several candidates may be evaluated at the same time, depending on the availability of materials and sites.

2 EXAMINATION PROCEDURE

Task 1 consists in:

- selecting the materials that the candidates will use to record the data. Candidates will pair up and make appropriate, complete choices in accordance with the task to be performed. They have approximately 5 minutes for this task.

Task 2 consists in:

- making a sketch freehand
- taking measurements, notes and photographs (at least two general notes and one detail)
- writing the measurements on the sketch
- preparing a list of equipment

Candidates will pair up to take measurements, but the other activities will be done individually.

They have approximately 70 minutes for this task.

Task 3 consists in individually producing the layout of the room using the sketch, photographs and the list of equipment prepared in Task 2.

Candidates have approximately 45 minutes for this task.

3 MATERIALS

The following are required for the examination:

- graph paper
- a paper stand
- a measuring tape
- a camera
- a stepladder, if necessary
- a computer equipped with drafting software

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 10 – Construction Site Data Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 332 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 PLANNING OF WORK			
1.1 Appropriate selection of basic plans, drawing materials, measuring instruments and protective gear	☐	☐	0 or 5
2 BASIC SKETCH			
2.1 Observance of proportions:			
- accurate spatial transposition of the room	☐	☐	
- accurate transposition of the structure	☐	☐	
- accurate transposition of the ceiling	☐	☐	
- accurate transposition of other components to be included	☐	☐	0 or 10
Tolerance: two errors			
2.2 Accurate linework:			
- clean linework	☐	☐	
- accurate symbols	☐	☐	
- accurate references for each drawing	☐	☐	0 or 10
Tolerance: two errors			

OBSERVATION			RESULT
	YES	NO	
3 MEASUREMENTS, NOTES AND PHOTOGRAPHS			
3.1 Accurate measurements:			
- Complete, accurate measurements	☐	☐	0 or 10
- precise angles	☐	☐	
- accurate levels	☐	☐	
Tolerance: two errors			
3.2 Appropriate selection of views:			
- complete, appropriate selection of views	☐	☐	0 or 5
3.3 Accurate notes	☐	☐	0 or 5
3.4 Legible notes	☐	☐	0 or 5
4 LIST OF EQUIPMENT ON THE SITE (BUILDING MECHANICS AND FIXED FURNISHINGS)			
4.1 Accurate data	☐	☐	0 or 10
4.2 Complete list	☐	☐	0 or 10
Tolerance: one error			
5 LAYOUT			
5.1 Accurate drawing:			
- appropriate line width	☐	☐	0 or 10
- correct representation of materials	☐	☐	
- accurate symbols	☐	☐	
5.2 Accurate data entry:			
- clear notes	☐	☐	0 or 10
- accurate dimensions	☐	☐	
- complete list of equipment	☐	☐	

OBSERVATION			RESULT
	YES	NO	
6 SAFETY			
6.1 Observance of health and safety rules on the construction site:			
- protective gear worn	☐	☐	0 or 5
- observance of the rules applicable to different sites	☐	☐	
7 BEHAVIOUR ON THE CONSTRUCTION SITE			
7.1 Appropriate behaviour on the construction site:			
- respect, politeness and courtesy	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)					Duration: 90 hours			
Statement of the Competency: <i>To research information related to plumbing</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
RESEARCH INFORMATION RELATED TO PLUMBING								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
A. SELECT THE SOURCES OF INFORMATION								
Duration: 5%								
2	A.1 Formulate the purpose of the research.	Comprehension of requirements Verification and clarification of initial data						
2	A.2 Select the technical documentation.	Reference materials Course notes <i>National Plumbing Code</i> Technical data sheets Manufacturers’ catalogues Internet		Appropriate selection of technical documentation				
2	A.3 Select a plan for the background drawing.	Architectural and structural plans						
3	A Select the sources of information.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)							Duration: 90 hours		
Statement of the Competency: <i>To research information related to plumbing</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
B. GATHER THE INFORMATION									
<i>Duration: 25%</i>									
2	B.1	Locate the plumbing-related information in the documentation retained.	Drainage system Ventilation system Water supply and distribution system: - cold water system - hot water system - water service line			Appropriate location of the information			
2	B.2	Distinguish the role of the different parts of the system.	Sewage system: - connecting branch lines - vertical pipes - horizontal pipes - septic tank Drainage system: - connecting branch lines - vertical pipes - horizontal pipes - French drain - vault Ventilation system: - connections - vertical pipes - horizontal pipes - roof vent Water distribution system: - water service line - water heater						
2	B.3	Distinguish how the fixtures and accessories work.	Wash basin Toilet Bath Clothes washer						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)					Duration: 90 hours		
Statement of the Competency: <i>To research information related to plumbing</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
		Dishwasher Kitchen sink Cleanout Shower Floor drain Roof drain Water heater Laundry tub Siphon Backwater valve, etc.					
2	B.4 Distinguish between fixture, accessory and pipe connections.	Methods of connecting fixtures: referral to guidelines for B.3 Methods of connecting accessories: - cleanout - vault - floor drain - roof drain - backwater valve, etc. Methods of connecting pipes: - vertical pipes - horizontal pipes					
2	B.5 Recognize the symbols used in plumbing.	Referral to guidelines in B.3 Piping: - sewage - drainage - ventilation - cold water - hot water					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)							Duration: 90 hours			
Statement of the Competency: <i>To research information related to plumbing</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
2	B.6	Select the materials used in plumbing.	National Plumbing Code Manufacturers' catalogues Terminology Architectural and structural plans							
3	B	Gather the information.				1 Information gathering Accurate interpretation of the information 1.1 Appropriate selection of fixtures and accessories 1.2 Accurate information 1.3 Complete list of the information	15			
								5	PT	
								5	PT	
								5	PT	
C. PROCESS THE INFORMATION										Duration: 20%
2	C.1	Calculate the dimensions of different systems.	Sewage system Drainage system Ventilation system Water supply system							
2	C.2	List the fixtures and accessories.	For a residential project							
3	C	Process the information.				2 Calculations related to plumbing 2.1 Accurate calculations of the pipe sizes for the sewage and drainage systems	30			
								10	PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)							Duration: 90 hours		
Statement of the Competency: <i>To research information related to plumbing</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
				2.2 Accurate calculations of the pipe sizes for the domestic water supply system		10	PT		
				2.3 Accurate calculations of the pipe sizes for the ventilation system		10	PT		
D. APPLY THE TECHNICAL INFORMATION									Duration: 40%
2	D.1 Sketch a plumbing system.	Inclusion of: - sewage system - drainage system - ventilation system - water supply and distribution system							
2	D.2 Draw the details of the pipe fittings and fixture connections.	Diagram of fittings and connections for accessories such as: - vault - roof drain - floor drain - toilet drain - backwater valve							
2	D.3 Annotate and dimension the sketch and details.	Symbolic representation and dimensions of: - pipes - fixtures - accessories							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)							Duration: 90 hours			
Statement of the Competency: <i>To research information related to plumbing</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
3	D	Apply the technical information.			3	Schematic diagram of the plumbing system		55		
					3.1	Schematic diagram of plumbing system				
					3.2	Complete, accurate data				
					3.3	Complete, accurate technical specifications				
RESEARCH INFORMATION RELATED TO PLUMBING										
Duration: 5%										
3	Research information related to plumbing.				3.4	Compliance with instructions			5	PT
					3.5	Use of correct terminology				
2	Demonstrate autonomy and initiative.		Importance of adopting a proactive attitude when researching information Educational Aim 1							
2	Demonstrate openness to change.		Importance of being open in order to adapt to frequent changes in plumbing products Educational Aim 3							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)							Duration: 90 hours		
Statement of the Competency: <i>To research information related to plumbing</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
RESEARCH INFORMATION RELATED TO PLUMBING									
<i>Duration: 5%</i>									
(including evaluation for the purpose of certification)									
4	RESEARCH INFORMATION RELATED TO PLUMBING.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies					
RESEARCH INFORMATION RELATED TO PLUMBING									
5	RESEARCH INFORMATION RELATED TO PLUMBING.	Commercial project: - calculation of pipe sizes - selection of plumbing fixtures and accessories - sketch of plumbing system and details of the connections with notes							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 346 – INFORMATION RELATED TO PLUMBING (Module 11)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to research information related to plumbing. The suggested duration for this practical examination is four hours.

2 EXAMINATION PROCEDURE

Task 1 consists in gathering plumbing-related information from a plan and specifications for a small building, and listing the fixtures and accessories required for a given situation.

Candidates have approximately 30 minutes for this task.

Task 2 consists in calculating the dimensions of different plumbing systems such as:

- the sewage system
- the drainage system
- the ventilation system
- the domestic water supply system

Candidates have approximately 2 hours for this task.

Task 3 consists in producing or completing a sketch containing the pipe fittings and accessory connections.

Candidates have approximately 1 hour 30 minutes for this task.

3 MATERIALS

The following are required for the examination:

- a computer equipped with a browser and an Internet connection
- drafting instruments
- a calculator
- architectural plans and descriptive specifications
- current codes and standards
- manufacturers' catalogues

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 11 – Information Related to Plumbing Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 346 RESULT: PASS ☐ FAIL ☐
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OBSERVATION		RESULT
	YES NO	
1	INFORMATION GATHERING	
1.1	Appropriate selection of fixtures and accessories	0 or 5
1.2	Accurate information	☐ ☐ 0 or 5
1.3	Complete list of the information	☐ ☐ 0 or 5
2	CALCULATIONS RELATED TO PLUMBING	
2.1	Accurate calculations of the pipe sizes for the sewage and drainage systems Tolerance: two errors	0 or 10
2.2	Accurate calculations of the pipe sizes for the domestic water supply system Tolerance: two errors	☐ ☐ 0 or 10
2.3	Accurate calculations of the pipe sizes for the ventilation system Tolerance: two errors	☐ ☐ 0 or 10

OBSERVATION			RESULT
	YES	NO	
3 SKETCH OF THE PLUMBING SYSTEM			
3.1 Approximate sketch of plumbing system:			
- drawing in conformity with the plan views	☐	☐	
- inclusion of sewage, drainage, domestic water supply and ventilation systems	☐	☐	
- conformity of symbols with plumbing plan	☐	☐	0 or 15
3.2 Complete, accurate data:			
- fittings and accessories placed in conformity with current codes and standards	☐	☐	
- pipes, fixtures and accessories placed in accordance with constraints and specialties	☐	☐	0 or 15
3.3 Complete, accurate technical specifications:			
- inclusion of symbols illustrating methods of connection	☐	☐	
- inclusion of dimensions and notes	☐	☐	0 or 15
Tolerance: two errors			
3.4 Compliance with instructions	☐	☐	0 or 5
3.5 Use of correct terminology:			
- inclusion of all the descriptive elements required and accuracy of terms	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 356 – PLUMBING PLANS (Module 12)					Duration: 90 hours				
Statement of the Competency: <i>To produce plumbing plans</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
<i>PRODUCE PLUMBING PLANS</i>									
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies							
<i>A. PLAN THE WORK</i>									<i>Duration: 5%</i>
2	A.1 Interpret the reference documents required for the plumbing plans.	Plans for other specialties: - architecture - structure Sketches Specifications <i>National Building Code</i> Addenda Revisions Companies’ technical specifications		Accurate interpretation of the initial data					
2	A.2 Interpret calculations and sketches.	Reference documents and file Symbols representing the construction components and materials		Accurate interpretation of calculations and sketches					
2	A.3 List the plans to be produced.	Ways of preparing a list		Complete list of plans to be produced Realistic estimate of time needed to do the work					
3	A Plan the work.								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 356 – PLUMBING PLANS (Module 12)							Duration: 90 hours					
Statement of the Competency: <i>To produce plumbing plans</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
B. PREPARE THE BACKGROUND DRAWING										Duration: 10%		
2	B.1	Select the architectural components to be retained.	Structural and architectural components required for the plumbing plans Symbols in conformity with the conventions related to background drawings									
2	B.2	Recognize the components that interfere with the installation of the plumbing systems.	Retention of essential components in order to understand where the plumbing may or may not be installed: - doubled and spaced joists - load-bearing partitions - footing									
2	B.3	Recognize the symbols on a plan.	Use of symbols and colours in conformity with background drawings Symbols representing the components of a plumbing system: - drainage - supply - vents									
3	B	Prepare the background drawing.				1 Background drawing 1.1 Conformity of the background drawing with the architectural and structural plans 1.2 Appropriate selection of components of the plan to be retained	15	5 5	PT PT			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 356 – PLUMBING PLANS (Module 12)						Duration: 90 hours			
Statement of the Competency: <i>To produce plumbing plans</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
				1.3 Conformity of symbols with the conventions related to the background drawings		5	PT		
C. DRAW A PRELIMINARY PLUMBING SYSTEM									Duration: 15%
2	C.1 Draw the components of the plumbing system.	System drawings proportional to the background drawings for the - supply system - drainage system - ventilation system <i>National Plumbing Code</i>		Accurate drawing					
2	C.2 Use conventions related to schematic diagrams.	Schematic diagram of the: - drainage system - supply system - ventilation system Use of corresponding symbols		Observance of conventions related to schematic diagrams Observance of the sequence of connection					
2	C.3 Note the technical specifications related to the piping and plumbing fixtures.	Identification of components Research of technical specifications with companies							
2	C.4 Verify the consistency of the drawing with the ventilation, electrical, structural and architectural plans.	Sufficient understanding of the reference plans in order to avoid conflicts between the different specialities		Consistency with ventilation, electrical, structural and architectural plans					
3	C Draw a preliminary plumbing system.			2 Preliminary drawing 2.1 Complete, accurate technical specifications related to the piping and the plumbing fixtures	10	10	PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 356 – PLUMBING PLANS (Module 12)						Duration: 90 hours			
Statement of the Competency: <i>To produce plumbing plans</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
D. CALCULATE THE DIMENSIONS OF THE SYSTEMS									Duration: 15%
2	D.1 Calculate the dimensions of the plumbing systems.	Appropriate formulas Rain precipitation factor Use of appropriate tables in the <i>National Plumbing Code</i> for the different systems: - drainage - supply - ventilation - water							
2	D.2 Verify the consistency of the calculations with those in the Code.	Verification of the results obtained with the tables and the minimum requirements set out in the Code							
3	D Calculate the dimensions of the systems.			3 System dimensions 3.1 Use of the appropriate mathematical formulas 3.2 Accurate calculations and precise diameters	30	10 20	PT PT		
E. COMPILE A TABLE LISTING THE NECESSARY MATERIALS									Duration: 10%
2	E.1 Prepare the list of materials.	Methodology to establish a complete list including: - company name - model number - colour - dimensions - capacities - materials							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 356 – PLUMBING PLANS (Module 12)						Duration: 90 hours			
Statement of the Competency: <i>To produce plumbing plans</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
3	E.1	Compile a table listing the necessary materials.				4 List of materials 4.1 Preparation of a complete list of materials	10	10	PT
F. HAVE THE PRELIMINARY PLANS AND FIXTURES APPROVED									Duration: 5%
2	F.1	Verify the conformity of their work.	Appropriate drawings and calculations before proceeding any further Educational Aim 5			Observance of approval procedure			
2	F.2	Present their work.	Means to ensure good comprehension of the project: - section - enlargement - different types of lines or symbols			Clear presentation of the project			
3	F	Have the preliminary plans and fixtures approved.							
G. PRODUCE THE WORKING DRAWINGS									Duration: 25%
2	G.1	Draw the plumbing systems.	Plan Elevations Isometric view						
2	G.2	Dimension and annotate the plans.							
2	G.3	Draw, dimension and annotate the details.	Selection of details according to: - their complexity - constraints regarding their location			Appropriate selection of details			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 356 – PLUMBING PLANS (Module 12)							Duration: 90 hours		
Statement of the Competency: <i>To produce plumbing plans</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
3	G	Produce the working drawings.				5 Plumbing plan 5.1 Complete drawings 5.2 Accurate layout of the components of the plumbing systems 5.3 Accurate symbols, dimensions and notes 5.4 Conformity of drawings with the initial data	30	10 10 5 5	PT PT PT PT
H. PRINT THE DRAWINGS									
Duration: 5%									
2	H.1	Balance the layout for a plumbing plan.	In accordance with the plan and details to be presented						
2	H.2	Determine the printing scale.	In accordance with the paper format used In accordance with the components to be presented on the plan			Selection of suitable scale			
3	H	Print the drawings.				6 Printing of drawings 6.1 Well-balanced layout	5	5	PT
PRODUCE PLUMBING PLANS									
Duration: 5%									
3	Produce plumbing plans.					Appropriate use of system Observance of standards and applicable codes Appropriate use of reference materials Appropriate use of international and imperial systems of measurements			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 356 – PLUMBING PLANS (Module 12)						Duration: 90 hours		
Statement of the Competency: <i>To produce plumbing plans</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
				Consistency throughout the different plumbing plans Customer satisfaction Observance of drafting conventions Observance of time limit				
<i>PRODUCE PLUMBING PLANS</i>								<i>Duration: 5%</i>
(including evaluation for the purpose of certification)								
4	PRODUCE PLUMBING PLANS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
<i>PRODUCE PLUMBING PLANS</i>								
5	PRODUCE PLUMBING PLANS.	More complex projects: - addition of parts of buildings - addition of plumbing components						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 356 – PLUMBING PLANS (Module 12)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce plumbing plans. The suggested duration of this practical examination is six hours.

2 EXAMINATION PROCEDURE

This task consists in using a computer to prepare background plans; and to draw, dimension and annotate an isometric drawing of a plumbing system for a flat-roofed, two-storey building that includes, for example, men's and women's washrooms, a kitchenette, a janitor's room, and one or more refrigerated drinking fountains.

The work must also include a plumbing detail drawing and a complete list of system components. Architectural and structural plans as well as specifications will be provided for this purpose. The candidates must do the layout as requested and print their work.

3 MATERIALS

The following are required for the examination:

- a computer equipped with various software
- peripherals
- a calculator
- architectural and structural plans and specifications
- current codes and standards
- manufacturers' catalogues
- technical documents

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 12 – Plumbing Plans Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 356 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 BACKGROUND DRAWING			
1.1 Conformity of the background drawing with the architectural and structural plans	☐	☐	0 or 5
1.2 Appropriate selection of components of the plan to be retained:			
- inclusion of exterior walls, interior partitions, doors and windows	☐	☐	
- inclusion of structural axes	☐	☐	
- inclusion of counters and cabinets	☐	☐	
- inclusion of plumbing fixtures and accessories	☐	☐	0 or 5
Tolerance: one error			
1.3 Conformity of symbols with the conventions related to the background drawings	☐	☐	0 or 5
2 PRELIMINARY DRAWING			
2.1 Complete, accurate technical specifications related to the piping and the plumbing fixtures	☐	☐	0 or 10
3 SYSTEM DIMENSIONS			
3.1 Use of the appropriate mathematical formulas	☐	☐	0 or 10

OBSERVATION			RESULT
	YES	NO	
3.2 Accurate calculations and precise diameters:	☐	☐	0 or 20
- sewage system	☐	☐	
- drainage system	☐	☐	
- ventilation system	☐	☐	
Tolerance: one error per system			
4 LIST OF MATERIALS			
4.1 Preparation of list of materials:			0 or 10
- name of components	☐	☐	
- manufacturer's name	☐	☐	
- model number	☐	☐	
- component dimensions	☐	☐	
- quantities	☐	☐	
Tolerance: one error			
5 PLUMBING PLAN			
5.1 Complete drawings:			0 or 10
- inclusion of plumbing accessories	☐	☐	
- highlighting of plumbing system	☐	☐	
- notes and dimensions of system components	☐	☐	
- consistency of the plan view and the isometric view	☐	☐	
5.2 Accurate layout of the components of the plumbing systems:			0 or 10
- placement of each plumbing system component according to current codes and standards	☐	☐	
Tolerance: two errors			
5.3 Accurate symbols, dimensions and notes:			0 or 5
- observance of the symbol legend	☐	☐	
- pipe sizes	☐	☐	
- notes and dimensions of plumbing fixtures and accessories in conformity with current codes and standards	☐	☐	

OBSERVATION			RESULT
	YES	NO	
5.4 Conformity of drawings with the initial data	☐	☐	0 or 5
6 PRINTING OF DRAWINGS			
6.1 Well-balanced layout:			
- observance of work scale	☐	☐	
- appropriate layout of drawings	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 362 – WALL SECTIONS AND DETAIL DRAWINGS (Module 13)						Duration: 30 hours			
Statement of the Competency: <i>To draw wall sections and detail drawings</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
<i>DRAW WALL SECTIONS AND DETAIL DRAWINGS</i>									
1	Situating this competency with respect to the training program.		Reason for the competency Course outline Links with other competencies						
<i>A. PLAN THE WORK</i>						<i>Duration: 5%</i>			
2	A.1	Determine the placement of the wall section in the building.	Criteria for selecting the placement: - in accordance with the supervisor's request - in accordance with the composition of the wall			Appropriate selection of the placement of the section or detail			
2	A.2	Compile the information.	Identification of the structure Characteristics of the different materials Levels and axis lines Assembly of materials			Accurate interpretation of the plans and other data			
3	A	Plan the work.							
<i>B. LOCATE THE PLACEMENT OF THE VARIOUS MATERIALS THAT ENTER INTO THE COMPOSITION OF A WALL OR DETAIL</i>						<i>Duration: 25%</i>			
2	B.1	Recognize the different materials that enter into the composition of an aboveground wall, an underground wall and a roof, as well as their functions.	Insulation materials Air/vapour barrier materials Sealants Intermediary materials Covering materials Finishing materials						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 362 – WALL SECTIONS AND DETAIL DRAWINGS (Module 13)							Duration: 30 hours		
Statement of the Competency: <i>To draw wall sections and detail drawings</i>									
COMPETENCY			LEARNING		EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
2	B.2	Locate the different materials of the wall section.	In accordance with the axes of the structure Sequence of materials in accordance with construction rules		Observance of the principles relating to: - insulation - condensation - heat loss - thermal bridge - ventilation				
2	B.3	Situate a door and window in a wall in accordance with the composition of the wall.	Continuity of air/vapour barrier Continuity of insulation Assembly of intermediary, covering and finishing materials						
2	B.4	Draw a parapet.	Structure of the parapet Waterproofness of parapet Insulation						
2	B.5	Draw a technical detail.	Plan view Section view In accordance with the same requirements as the wall section						
3	B	Locate the placement of the various materials that enter into the composition of a wall or detail.			1 Placement of different materials 1.1 Observance of the proper sequence for placing the different materials and of the nomenclature 1.2 Accurate placement of the construction components of the wall section in relation to the structure's axis lines	30	15 15	PT PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 362 – WALL SECTIONS AND DETAIL DRAWINGS (Module 13)							Duration: 30 hours				
Statement of the Competency: <i>To draw wall sections and detail drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St		
C. DRAW THE COMPONENTS OF THE WALL OR DETAIL										Duration: 20%	
2	C.1	Draw the different materials.	Underground wall Aboveground wall Floors Roof In accordance with drafting conventions			Observance of architectural data Appropriate use of international and imperial systems of measurement					
2	C.2	Assemble the materials.	Illustration of how materials are assembled: - underground wall and floors - underground wall and concrete slab - aboveground wall and floor - aboveground wall and roof			Observance of the structure of the building Accurate placement of different materials					
3	C	Draw the components of the wall or detail.				2 Drawing of components 2.1 Observance of axis lines 2.2 Observance of drafting conventions used to represent the materials 2.3 Observance of drafting conventions relating to the tracing and presentation	30	5 15 10	PT PT PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 362 – WALL SECTIONS AND DETAIL DRAWINGS (Module 13)							Duration: 30 hours					
Statement of the Competency: <i>To draw wall sections and detail drawings</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
D. DIMENSION AND ANNOTATE THE DRAWINGS										Duration: 20%		
2	D.1	Annotate the wall section or detail.	Note on the axis line Nomenclature related to the following components: - underground wall - aboveground wall - roof - underground floor - aboveground floors - parapet Special notes			Appropriate use of international and imperial systems of measurement						
2	D.2	Dimension the wall section or detail.	Floor level Roof level Structure level Parapet level Level of doors and windows Level of specific details Specific dimensions									
3	D	Dimension and annotate the drawings.				3 Dimensions and notes 3.1 Complete, accurate dimensions 3.2 Complete, accurate notes 3.3 Accurate data related to the thermal resistance	25					
								10	PT			
								10	PT			
								5	PT			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 362 – WALL SECTIONS AND DETAIL DRAWINGS (Module 13)						Duration: 30 hours		
Statement of the Competency: <i>To draw wall sections and detail drawings</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>DRAW WALL SECTIONS AND DETAIL DRAWINGS</i> <i>Duration: 15%</i>								
3	Draw wall sections and detail drawings.			Appropriate use of computer system and software Observance of the <i>National Building Code</i> Observance of drafting conventions Observance of time limit 4 Quality of the drawings 4.1 Conformity of drawings with the initial data 4.2 Accurate drawings Appropriate use of reference materials	15	10	PT	
<i>DRAW WALL SECTIONS AND DETAIL DRAWINGS</i> <i>Duration: 15%</i>								
(including evaluation for the purpose of certification)								
4	DRAW WALL SECTIONS AND DETAIL DRAWINGS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
<i>DRAW WALL SECTIONS AND DETAIL DRAWINGS</i>								
5	DRAW WALL SECTIONS AND DETAIL DRAWINGS.	Wall section with nonstandard details such as offsets or changes in materials						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 362 – WALL SECTIONS AND DETAIL DRAWINGS (Module 13)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to draw a wall section and detail drawing. The suggested duration for this practical examination is two hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given the following:

- architectural plans for a small steel building or a sketch of a wall section including the data required to draw the section
- a list of underground and aboveground wall components
- a list of roof components
- a list of components for the different floors

Task 1 consists in drawing part of a wall section in a steel building using:

- architectural plans or a sketch of a wall section
- a list of building envelope components in random order

Candidates have approximately 1 hour 30 minutes for this task.

Task 2 consists in dimensioning and annotating part of the wall section according to the components and their placement on the basis of:

- the drawing done by the candidate in Task 1
- the list of components
- plans or the sketch

Note: The work produced by the candidate in Task 1 will be used to evaluate the examination.

Candidates have approximately 30 minutes for this task.

3 MATERIALS

The following is required for the examination:

- a computer equipped with drafting software

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 13 – Wall Sections and Detail Drawings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 362 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 PLACEMENT OF DIFFERENT MATERIALS			
1.1 Observance of the proper sequence for placing the different materials and of nomenclature Tolerance: one error			0 or 15
1.2 Accurate placement of the construction components of the wall section in relation to the structure's axis lines	☐	☐	0 or 15
2 DRAWING OF COMPONENTS			
2.1 Observance of axis lines:			
- accurate placement of the axis line(s)	☐	☐	
- axis lines drawn in accordance with conventions	☐	☐	0 or 5
2.2 Observance of drafting conventions used to represent the materials:			
- symbol of materials represented in accordance with established conventions	☐	☐	
- suitable scale	☐	☐	0 or 15
Tolerance: one error			
2.3 Observance of drafting conventions relating to the tracing and presentation:			
- representative line weight in accordance with the different materials	☐	☐	
- well-balanced layout	☐	☐	0 or 10
Tolerance: two errors			

OBSERVATION			RESULT
	YES	NO	
3 DIMENSIONS AND NOTES			
3.1 Complete, accurate dimensions:			
- complete, accurate notes	☐	☐	0 or 10
- complete, accurate levels	☐	☐	
Tolerance: one error			
3.2 Complete, accurate notes:			
- accurate nomenclature related to underground wall	☐	☐	0 or 10
- accurate nomenclature related to aboveground wall	☐	☐	
- accurate nomenclature related to roof	☐	☐	
- accurate nomenclature related to floors	☐	☐	
- other complete and relevant notes	☐	☐	
Tolerance: two errors			
3.3 Accurate data related to the thermal resistance	☐	☐	0 or 5
4 QUALITY OF THE DRAWINGS			
4.1 Conformity of drawings with the initial data	☐	☐	0 or 10
4.2 Accurate drawings	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 372 – ESTIMATING QUANTITIES (Module 14)					Duration: 30 hours			
Statement of the Competency: <i>To estimate quantities of materials and equipment</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>ESTIMATE QUANTITIES OF MATERIALS AND EQUIPMENT</i>								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
<i>A. BECOME FAMILIAR WITH THE PLAN AND SPECIFICATIONS</i>								
2	A.1 Interpret a plan.	Plans Elevations Sections Details Dimensions Notes		Accurate interpretation of the plan				
2	A.2 Interpret the specifications.	Technical specifications for different materials, insulation, air barrier, vapour barrier, structural components, coverings, etc.		Accurate interpretation of the specifications				
2	A.3 Categorize the building materials.	Structural components Insulation materials Sealants Finishing materials Etc.						
2	A.4 Use the terminology specific to materials.	Concrete Masonry Anchoring Assembly device Waterproofness/sealants Insulation, etc.						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 372 – ESTIMATING QUANTITIES (Module 14)							Duration: 30 hours				
Statement of the Competency: <i>To estimate quantities of materials and equipment</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
3	A	Become familiar with the plan and specifications.				1	Plan and specifications	25			
						1.1	Complete, accurate list of components and materials		15	PT	
						1.2	Correct terminology		10	PT	
B. COMPILE A TABLE LISTING THE CATEGORIES OF MATERIALS, EQUIPMENT AND ACCESSORIES										Duration: 30%	
2	B.1	Present the information on materials in a table.	Sequence of specifications: - concrete - masonry - metals - wood and plastic - insulation and sealants - doors and windows - finishes - special products - equipment - furnishings and decoration - special installations - transportation system - mechanics - electricity Ways of presenting information in a table Review of Module 2: table								
3	B	Compile a table listing the categories of materials, equipment and accessories.				2	Table listing the categories of materials, equipment and accessories	10			
						2.1	Observance of appropriate classification procedure for the specifications		10	PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 372 – ESTIMATING QUANTITIES (Module 14)					Duration: 30 hours			
Statement of the Competency: <i>To estimate quantities of materials and equipment</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
				Complete list of materials, equipment and accessories Correct terminology				
C. DO THE CALCULATIONS								Duration: 35%
2	C.1 Select a method of calculation.	Unit method Surface area method Method based on type of construction Etc.						
2	C.2 Apply mathematical formulas.	Calculation of the number of components Calculation of the quantity of materials Calculation of surface area Calculation of volume						
2	C.3 Do conversions.	International to imperial system of measurement Imperial to international system of measurement						
3	C Do the calculations.			3 Calculations 3.1 Accurate calculation of linear quantities 3.2 Accurate calculation of surface areas 3.3 Accurate calculation of volumes	55	10 10 10	PT PT PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 372 – ESTIMATING QUANTITIES (Module 14)						Duration: 30 hours		
Statement of the Competency: <i>To estimate quantities of materials and equipment</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
					3.4 Accurate calculation of unit quantities (packets, sheets, etc.)		10	PT
					3.5 Accurate conversion of international units into imperial units and vice versa		15	PT
					Use of the appropriate calculation method			
ESTIMATE QUANTITIES OF MATERIALS AND EQUIPMENT								
Duration: 5%								
3	Estimate quantities of materials and equipment.				4 Computer system and spreadsheet	10		
					4.1 Appropriate use of computer system and spreadsheet		10	
					Appropriate use of reference materials			
ESTIMATE QUANTITIES OF MATERIALS AND EQUIPMENT								
Duration: 10%								
(including evaluation for the purpose of certification)								
4	ESTIMATE QUANTITIES OF MATERIALS AND EQUIPMENT.				Referral to all of the preceding criteria for formative evaluation			
					Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
ESTIMATE QUANTITIES OF MATERIALS AND EQUIPMENT								
5	ESTIMATE QUANTITIES OF MATERIALS AND EQUIPMENT	For a two-storey single-family dwelling						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 372 – ESTIMATING QUANTITIES (Module 14)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to determine the quantities of the materials required to construct a small building, for example, a garage for a residential dwelling. The suggested duration of this practical examination is two hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

Candidates will be given the following:

- a plan and specifications for a small building
- an empty table
- a classification list for specifications

Task 1 consists in developing a list of components and materials based on:

- a plan and specifications for a small building
- an empty table

Candidates have approximately 30 minutes for this task.

Note: The list should be complete and candidates are allowed only one error.

Task 2 consists in classifying materials according to the sequence of the specifications and using:

- the classification list for the specifications

Candidates have approximately 30 minutes for this task.

Note: The work done by the candidate in Task 1 will be used to evaluate this task.

Task 3 consists in using data from a plan and specifications to calculate:

- the number of components
- the quantity of materials
- surface area
- volume
- conversion

Candidates have approximately 1 hour for this task.

Note: The work done by the candidate for Tasks 1 and 2 will be used to evaluate this task.

3 MATERIALS

The following are required for the examination:

- a computer equipped with a spreadsheet
- a calculator

4 SPECIAL INSTRUCTIONS

The candidate may decide whether to do the calculations using a spreadsheet or a calculator.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 14 – Estimating Quantities Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 372 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 PLAN AND SPECIFICATIONS			
1.1 Complete, accurate list of components and materials Tolerance: one error	☐	☐	0 or 15
1.2 Correct terminology Tolerance: two errors	☐	☐	0 or 10
2 TABLE LISTING THE CATEGORIES OF MATERIALS, EQUIPMENT AND ACCESSORIES			
2.1 Observance of appropriate classification procedure for the specifications: Classification of components and materials according to the following categories:			
- landscaping	☐	☐	
- concrete	☐	☐	
- masonry	☐	☐	
- metals	☐	☐	
- wood and plastic	☐	☐	
- insulation and sealants	☐	☐	
- doors and windows	☐	☐	
- finishes	☐	☐	
- other	☐	☐	0 or 10

OBSERVATION			RESULT
	YES	NO	
3	CALCULATIONS		
3.1	Accurate calculation of linear quantities	☐ ☐	0 or 10
3.2	Accurate calculation of surface areas	☐ ☐	0 or 10
3.3	Accurate calculation of volumes	☐ ☐	0 or 10
3.4	Accurate calculation of unit quantities (packets, sheets, etc.)	☐ ☐	0 or 10
3.5	Accurate conversion of international units into imperial units and vice versa	☐ ☐	0 or 15
	Tolerance: one error		
4	COMPUTER SYSTEM AND SPREADSHEET		
4.1	Appropriate use of computer system and spreadsheet:		
	- observance of instructions related to the presentation of a spreadsheet	☐ ☐	
	- correct printing of table	☐ ☐	0 or 10
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)					Duration: 60 hours		
Statement of the Competency: <i>To produce steel structure assembly drawings</i>							
COMPETENCY		LEARNING			EVALUATION		
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE STEEL STRUCTURE ASSEMBLY DRAWINGS</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
<i>A. PLAN THE WORK</i> <i>Duration: 5%</i>							
2	A.1 Interpret the instructions.	Instructions from the engineer or head technician					
2	A.2 Compile the necessary information.	Technical data Working documents List of drawings to be produced Work time required		Accurate interpretation of the plans Accurate interpretation of calculations and notes provided by the engineering department Complete list of plans to be produced Realistic estimate of time needed to do the work			
3	A Plan the work.						
<i>B. DRAW, DIMENSION AND ANNOTATE THE LAYOUT DRAWINGS</i> <i>Duration: 15%</i>							
2	B.1 Draw the anchoring.	Drawings of studs Drawings of base plates Information concerning the anchor bolts		Accurate determination of the location of the axes			
2	B.2 Draw the details of the layout drawing.	Foundation wall section Thickness of levelling grout Location, description and dimensions of base plates					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)							Duration: 60 hours			
Statement of the Competency: <i>To produce steel structure assembly drawings</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
			Location, number and diameter of anchor bolts Mounting dimensions for anchor bolts in concrete Identification, description and location of anchor plates in the masonry							
2	B.3	Write the general notes.	Design standards Type of steel Types of structural bolts and anchor bolts Types of assembly Types of welding Types of paint							
3	B	Draw, dimension and annotate the layout drawings.				1	Drawing of layout	15		
						1.1	Complete, accurate representation of the structural components		10	PT
						1.2	Accurate location and orientation of the columns		5	PT
C. DRAW, DIMENSION AND ANNOTATE THE FLOOR AND ROOF PLANS										Duration: 20%
2	C.1	Trace, identify and dimension the axis lines.	Drafting conventions related to axis lines			Accurate determination of the location of the axes				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)							Duration: 60 hours				
Statement of the Competency: <i>To produce steel structure assembly drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	C.2	Draw the structural components.	Steel studs Steel beams Connecting girder and metal bridging Parts framing the openings								
2	C.3	Draw special assemblies.	Connections between beams and girders Connections between studs and beams Other								
3	C	Draw, dimension and annotate the floor and roof plans.				2	Drawing of a floor or roof plan	20			
						2.1	Complete, accurate representation of structural components		15	PT	
						2.2	Accurate location and orientation of the columns, beams and girders		5	PT	
D. DRAW, DIMENSION AND ANNOTATE ELEVATIONS										Duration: 20%	
2	D.1	Trace and identify references.	Identification of axes Identification of levels								
2	D.2	Project the elevations.	Position of foundation wall, floors and roof								
2	D.3	Partially draw and identify the studs and beams.	Location of studs and beams Drafting conventions								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)								Duration: 60 hours		
Statement of the Competency: <i>To produce steel structure assembly drawings</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
2	D.4	Position and identify the sills, ties, bracings and parts around openings.	Location of ties and bracings Location of metal parts around openings Drafting conventions							
3	D	Draw, dimension and annotate elevations.				3 Drawing of elevations 3.1 Complete, accurate representation of the structural components 3.2 Accurate determination of the location of the axes and levels 3.3 Accurate location and orientation of columns, beams, girders, bracings and sills	15	5 5 5	PT PT PT	
E. DRAW, DIMENSION AND ANNOTATE THE SECTIONS AND DETAILS										
Duration: 20%										
2	E.1	Draw specific sections of the building.	Choice of location Projection of sections Dimensions and notes of sections Identification of sections			Appropriate selection of the location of sections and details				
2	E.2	Draw the specific details of the building.	Choice of location Projection of details Dimensions and notes of details Identification of details							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)							Duration: 60 hours			
Statement of the Competency: <i>To produce steel structure assembly drawings</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
3	E	Draw, dimension and annotate the sections and details.				4 Drawing of sections and details 4.1 Consistency of layout detail with the other drawings of the assembly plan	10	10	PT	
F. HAVE THE WORK APPROVED										Duration: 5%
2	F.1	Show concern for verifying the conformity of their work.	Links with the initial data Consistency throughout the drawings Educational Aim 5							
2	F.2	Present their work.	Logical steps in the presentation Approval process and elements essential to the presentation Corrections, if necessary Openness to criticism			Observance of approval procedure Clear presentation of project				
2	F.3	Make corrections.	In accordance with requirements Within the requested timeframe							
3	F	Have the work approved.								
G. PRINT THE DRAWINGS										Duration: 2%
2	G.1	Manage the printing parameters.	Drawing scale Line weight Presentation of drawing							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)						Duration: 60 hours			
Statement of the Competency: <i>To produce steel structure assembly drawings</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
3	G Print the drawings.			5 Printing of drawings 5.1 Selection of suitable scale 5.2 Well-balanced layout	10	5 5	PT PT		
2	Show concern for planning and organizing their work efficiently.	Importance of good planning Importance of efficient organization Educational Aim 4							
PRODUCE STEEL STRUCTURE ASSEMBLY DRAWINGS									Duration: 3%
3	Produce steel structure assembly drawings.			6 Steel structure assembly drawings 6.1 Accurate drawings 6.2 Complete, accurate dimensions 6.3 Complete, accurate notes Appropriate use of computer system and software Appropriate use of reference materials Observance of applicable standards and codes Conformity of plans with the initial data Consistency throughout the drawings Observance of time limit	30	10 10 10	PT PT PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)					Duration: 60 hours		
Statement of the Competency: <i>To produce steel structure assembly drawings</i>							
COMPETENCY		LEARNING			EVALUATION		
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
	Work on their own.	Verification of their own work Search in working documents Initiative Educational Aim 1					
<i>PRODUCE STEEL STRUCTURE ASSEMBLY DRAWINGS</i>					<i>Duration: 10%</i>		
(including evaluation for the purpose of certification)							
4	PRODUCE STEEL STRUCTURE ASSEMBLY DRAWINGS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
<i>PRODUCE STEEL STRUCTURE ASSEMBLY DRAWINGS</i>							
5	PRODUCE STEEL STRUCTURE ASSEMBLY DRAWINGS.	More complex assembly details					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 384 – STEEL STRUCTURE ASSEMBLY DRAWINGS (Module 15)

INFORMATION ON THE EVALUATION

1 INSTRUCTIONS AND INFORMATION

The purpose of this examination is to evaluate the candidates' ability to produce steel structure assembly drawings. The suggested duration for this examination is six hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given information relating to a small simple steel structure.

This information will concern the axis lines and elevations, columns, beams, girders, struts, bracings as well as anchoring and foundation data.

Task 1 consists in producing the layout plan using:

- axis lines
- columns

This task is used to evaluate criteria 1.1 and 1.2.

Candidates have approximately 1 hour 30 minutes for this task.

Task 2 consists in producing a layout detail using:

- columns
- anchor plates
- anchor bolts
- grout
- foundation data

This task is used to evaluate criterion 4.1.

Candidates have approximately 1 hour 30 minutes for this task.

Task 3 consists in drawing a floor or roof plan using:

- axis lines
- columns
- beams
- girders
- struts

This task is used to evaluate criteria 2.1 and 2.2.

Candidates have approximately 1 hour 30 minutes for this task.

Task 4 consists in drawing one or two elevations using:

- axis lines
- elevations
- columns
- beams
- bracings
- sills and ties, as required

This task is used to evaluate criteria 3.1 to 3.3.

Candidates have approximately 1 hour 15 minutes for this task.

Task 5 consists in printing the drawings.

This task is used to evaluate criteria 5.1 and 5.2.

Candidates have approximately 15 minutes for this task.

3 MATERIALS

The following is required for the examination:

- a computer equipped with drafting software

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 15 – Steel Structure Assembly Drawings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 384 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 DRAWING OF LAYOUT			
1.1 Complete, accurate representation of the structural components:			
- identification of columns	☐	☐	0 or 10
- appropriate size of shapes	☐	☐	
- visibility of anchor bolts	☐	☐	
1.2 Accurate location and orientation of the columns:			
- location according to axis lines	☐	☐	0 or 5
- orientation according to technical data	☐	☐	
2 DRAWING OF A FLOOR OR ROOF PLAN			
2.1 Complete, accurate representation of structural components:			
- beams in conformity with data	☐	☐	
- level of beams in conformity with data	☐	☐	
- girders in conformity with data	☐	☐	
- tie girders in conformity with data	☐	☐	
- struts in conformity with data	☐	☐	

OBSERVATION			RESULT
	YES	NO	
- columns in conformity with data	☐	☐	
- openings in conformity with data	☐	☐	
- axis lines in conformity with data	☐	☐	0 or 15
2.2 Accurate location and orientation of the columns, beams and girders	☐	☐	0 or 5
3 DRAWING OF ELEVATIONS			
3.1 Complete, accurate representation of the structural components:			
- studs in conformity with data	☐	☐	
- beams in conformity with data	☐	☐	
- sills, ties and bracings in conformity with data	☐	☐	0 or 5
3.2 Accurate determination of the location of the axes and levels	☐	☐	0 or 5
3.3 Accurate location and orientation of columns, beams, girders, bracings and sills:			
- location according to axis lines	☐	☐	
- orientation of structure according to technical data	☐	☐	0 or 5
4 DRAWING OF SECTIONS AND DETAILS			
4.1 Consistency of layout detail with the other drawings of the assembly plan	☐	☐	0 or 10
5 PRINTING OF DRAWINGS			
5.1 Selection of suitable scale	☐	☐	0 or 5
5.2 Well-balanced layout	☐	☐	0 or 5

OBSERVATION			RESULT
	YES	NO	
6	STEEL STRUCTURE ASSEMBLY DRAWINGS		
6.1	Accurate drawings	☐ ☐	0 or 10
6.2	Complete, accurate dimensions Tolerance: one error	☐ ☐	0 or 10
6.3	Complete, accurate notes Tolerance: one error	☐ ☐	0 or 10
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)					Duration: 120 hours			
Statement of the Competency: <i>To produce structural steel shop drawings</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE STRUCTURAL STEEL SHOP DRAWINGS</i>								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
<i>A. PLAN THE WORK</i>								
2	A.1 Interpret the steel structure assembly drawings.	Plans Elevations Sections Details Etc.						
2	A.2 Compile the required information.	Technical data Working documents List of drawings to be produced Work time required		Accurate interpretation of the steel structure assembly drawings Accurate interpretation of calculations and notes provided by the engineering department Complete list of plans to be produced Realistic estimate of time needed to do the work				
3	A Plan the work.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

2005-01-31

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)							Duration: 120 hours				
Statement of the Competency: <i>To produce structural steel shop drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St		
B. DRAW, DIMENSION AND ANNOTATE THE BRACINGS										Duration: 10%	
2	B.1	Draw the structural component of the bracing.	Dimensioning Identification Positioning Angle Dimensions and notes Etc.			Accurate calculation of the lengths of the bracings					
2	B.2	Draw the holes.	Dimensioning Positioning Dimensions Notes specific to the hole								
2	B.3	Draw the gussets.	Dimensioning Positioning Angle Dimensions and notes Knot								
3	B	Draw, dimension and annotate the bracings.				1 Drawing of the bracings 1.1 Complete, accurate drawing of the structural components of the bracings 1.2 Complete, accurate drawing of the holes and gussets	15	10 5	PT PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)							Duration: 120 hours					
Statement of the Competency: <i>To produce structural steel shop drawings</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
C. DRAW, DIMENSION AND ANNOTATE THE BEAMS AND COLUMNS										Duration: 30%		
2	C.1	Draw the structural components.	Dimensioning of beams Dimensioning of columns			Accurate calculation of the length of the beams and columns Accurate dimensions of the structural components						
2	C.2	Identify the structural components.	Quantity Make of assembly Type of shape Depth Width of flanges Web thickness (mass per meter in length) Length of the beam									
2	C.3	Draw the holes.	Dimensioning Positioning Dimensions and notes Notes specific to the hole			Accurate location of the joists and notches						
2	C.4	Draw the notches.	Dimensioning variable, depending on whether a “beam to beam” or “beam to stud” type of assembly is used Positioning variable, depending on whether a “beam to beam” or “beam to stud” type of assembly is used Dimensions and notes			Accurate dimensions of the notches						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)						Duration: 120 hours		
Statement of the Competency: <i>To produce structural steel shop drawings</i>								
COMPETENCY			LEARNING		EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
3	C	Draw, dimension and annotate the beams and columns.			2 Drawing and annotation of beams and columns 2.1 Complete, accurate drawing and annotation of structural components 2.2 Complete, accurate drawing and annotation of holes 2.3 Complete, accurate drawing and annotation of notches	35		
							15	PT
							10	PT
							10	PT
D. DRAW, DIMENSION AND ANNOTATE THE FASTENERS								
Duration: 20%								
2	D.1	Draw the assembly of the structure on the basis of the corner post and plate.	“Beam to beam” assembly “Beam to stud” assembly Assembly of flange beam to a stud Assembly requiring other types of copes “Girder to stud” assembly “Girder to beam” assembly Etc.		Accurate dimensions of the fasteners			
2	D.2	Dimension and annotate the assembly of the structure.	Holes Notches Structural components in relation to one another Column base plate Grout					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)							Duration: 120 hours				
Statement of the Competency: <i>To produce structural steel shop drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	D.3	Draw and identify the welding symbols.	Reference line Notes Width of weld bead Length of weld bead Intermittent welding Staggered intermittent welding			Appropriate use of welding symbols					
3	D	Draw, dimension and annotate the fasteners.				3	Drawing and annotation of fasteners	20			
						3.1	Complete, accurate drawing of fasteners		10	PT	
						3.2	Complete, accurate dimensions and notes for the fasteners		10	PT	
E. DRAW, DIMENSION AND ANNOTATE THE ROUGH OPENING FRAMES ON THE ROOF, WALLS AND FLOORS										Duration: 10%	
2	E.1	Draw the structural components of the openings.	Dimensioning Identification Positioning Angle Dimensions and notes Etc.			Accurate dimensions of the openings					
3	E	Draw, dimension and annotate the rough opening frames on the roof, walls and floors.									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

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825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)							Duration: 120 hours		
Statement of the Competency: <i>To produce structural steel shop drawings</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
F. COMPILE A TABLE Duration: 5%									
2	F.1	Prepare a table of steel shapes.	Quantity and description of: HSS, WWF, V, C, L, etc. Girder Etc.			Complete data Accurate data			
2	F.2	Prepare a table of steel bolts.	Quantity and description of steel bolts						
3	F	Compile a table listing - quantities and dimensions pertaining to steel shapes - quantities and dimensions pertaining to steel bolts				4 Table of technical specifications 4.1 Complete, accurate data	10	10	PT
G. HAVE THE WORK APPROVED Duration: 3%									
2	G.1	Show concern for verifying the conformity of their work.	Consistency of the shop drawings with the steel structure assembly drawings Educational Aim 5			Observance of approval procedure			
2	G.2	Present the work.	Logical steps in the presentation Approval process and elements essential to the presentation Openness to criticism			Clear presentation of project			
2	G.3	Make corrections.	In accordance with requirements Within the requested timeframe						
3	G	Have the work approved.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

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825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)						Duration: 120 hours		
Statement of the Competency: <i>To produce structural steel shop drawings</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
H. PRINT THE DRAWINGS Duration: 2%								
2	H.1 Determine the printing parameters.	Drawing scale Line weight Presentation of drawings						
3	H Print the drawings.			5 Printing of drawings 5.1 Selection of suitable scale 5.2 Well-balanced layout	10	5 5	PT PT	
PRODUCE STRUCTURAL STEEL SHOP DRAWINGS Duration: 10%								
3	Produce structural steel shop drawings.			6 Quality of plan 6.1 Conformity of drawings with assembly drawings	10	10	PT	
2	Show concern for the consequences of their work.	Impact of drawings on the construction work Educational Aim 2						
PRODUCE STRUCTURAL STEEL SHOP DRAWINGS Duration: 5%								
(including evaluation for the purpose of certification)								
4	PRODUCE STRUCTURAL STEEL SHOP DRAWINGS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
PRODUCE STRUCTURAL STEEL SHOP DRAWINGS								
5	PRODUCE STRUCTURAL STEEL SHOP DRAWINGS.	Structures including more complex fastening details						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 398 – STRUCTURAL STEEL SHOP DRAWINGS (Module 16)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce structural steel shop drawings. The suggested duration for this practical examination is six hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given assembly drawings for a small steel structure or part of a steel structure. The assembly drawings include axis lines and elevations, columns, beams, girders, struts and bracings. The candidates will also be given data concerning the anchoring and fasteners.

Task 1 consists in drawing, dimensioning and annotating a bracing on the basis of:

- instructions
- technical data on structural components, holes and gussets

Candidates have approximately 1 hour for this task.

Task 2 consists in drawing the beams and columns on the basis of:

- instructions
- technical data on structural components, holes and notches
- technical data concerning the assembly of the structure and welds

Candidates have approximately 4 hours 15 minutes for this task.

Task 3 consists in preparing a table of technical specifications and the candidates have approximately 30 minutes for the task.

Task 4 consists in printing the drawings and candidates have approximately 15 minutes for the task.

3 MATERIALS

The following is required for the examination:

- a computer equipped with drafting software

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 16 – Structural Steel Shop Drawings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 398 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 DRAWING OF THE BRACINGS			
1.1 Complete, accurate drawing of the structural components of the bracings:			
- accurate and appropriate dimensions of the shapes	☐	☐	0 or 10
- annotations in conformity with conventions	☐	☐	
- precise angles	☐	☐	
1.2 Complete, accurate drawing of the holes and gussets:			
- accurate dimensions and locations of holes	☐	☐	0 or 5
- accurate dimensions and locations of gussets	☐	☐	
2 DRAWING AND ANNOTATION OF BEAMS AND COLUMNS			
2.1 Complete, accurate drawing and annotation of structural components:			
- accurate, appropriate dimensions of shapes	☐	☐	0 or 15
- conformity of dimensions	☐	☐	
- accurate notes	☐	☐	
- conformity of symbols	☐	☐	
- precise angles	☐	☐	

OBSERVATION			RESULT
	YES	NO	
2.2 Complete, accurate drawing and annotation of holes:			
- accurate dimensions	☐	☐	
- conformity of dimensions	☐	☐	
- complete notes	☐	☐	0 or 10
2.3 Complete, accurate drawing and annotation of notches:			
- accurate dimensions	☐	☐	
- conformity of dimensions	☐	☐	
- complete notes	☐	☐	0 or 10
3 DRAWING AND ANNOTATION OF FASTENERS			
3.1 Complete, accurate drawing of fasteners:			
- accurate dimensions	☐	☐	
- accurate location of structural components in relation to one another	☐	☐	
- accurate holes, corner post and plate	☐	☐	
- conformity of welds	☐	☐	0 or 10
3.2 Complete, accurate dimensions and notes for the fasteners	☐	☐	0 or 10
4 TABLE OF TECHNICAL SPECIFICATIONS			
4.1 Complete, accurate data regarding:			
- the quantity of components	☐	☐	
- the dimension of components	☐	☐	
- the make of components	☐	☐	
- the weight of components	☐	☐	
- the description of components	☐	☐	0 or 10
Tolerance: two errors			
5 PRINTING OF DRAWINGS			
5.1 Selection of suitable scale	☐	☐	0 or 5
5.2 Well-balanced layout	☐	☐	0 or 5

OBSERVATION			RESULT
	YES	NO	
6	QUALITY OF PLAN		
6.1	Conformity of drawings with assembly drawings	☐	☐
	Tolerance: one error		0 or 10
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)					Duration: 120 hours			
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE ARCHITECTURAL PLANS FOR A MULTI-FAMILY DWELLING</i>								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
<i>A. PLAN THE WORK</i>					<i>Duration: 5%</i>			
2	A.1 Compile the required information.	Appropriate documents: municipal by-laws Initial instructions <i>National Building Code</i> with respect to discharge and party walls Technical documents, etc. Initiative and autonomy in researching information Educational Aim 1		Accurate interpretation of the initial data Accurate interpretation of municipal by-laws				
2	A.2 Establish a work plan.	List of plans Scale of plans Deadline		Complete list of plans to be produced Realistic estimate of time needed to do the work				
3	A Plan the work.							
<i>B. DRAW THE STRUCTURE</i>					<i>Duration: 10%</i>			
2	B.1 Situate the structure.	Review of Module 6 In accordance with engineer’s data Concrete structure Steel structure Wood structure		Accurate interpretation of engineering calculations				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours				
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	B.2	Position the construction axes.	In accordance with drafting conventions								
3	B	Draw the structure.				1	Information on the structure	20			
						1.1	Observance of axes		5	PT	
						1.2	Appropriate dimensions of the structural components		10	PT	
						1.3	Accurate identification of the structure		5	PT	
C. DRAW, DIMENSION AND ANNOTATE THE PLANS: FOUNDATIONS, FLOORS, ROOF AND LAYOUT										Duration: 20%	
2	C.1	Dimension the foundations.	Review of Module 6 In accordance with the engineer’s data Footings Walls Concrete slab Type of soil Information from the Code			Accurate calculations					
2	C.2	Position the foundations.	In accordance with the engineer’s data Footings of underground and party walls Footings of columns and load-bearing walls Foundation walls Party wall								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	C.3	Indicate the structure of the different floors.	In accordance with the engineer’s data Column Stud Beam Joist Girder						
2	C.4	Position the drains.	In accordance with the engineer’s data Floor drain Agricultural drain						
2	C.5	Dimension and position the aboveground walls.	In accordance with the axes Composition of aboveground walls Composition of party walls Openings in the walls Observance of Code						
2	C.6	Dimension and draw the projection of the roofs	Roof with 2 or 4 slopes Cathedral roof Truss of a scissor roof Flat roof						
2	C.7	Draw the layout plan.	Interpretation of survey plans Interpretation of municipal by-laws Exterior features in accordance with customer’s needs			Observance of municipal by-laws			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours			
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>										
COMPETENCY			LEARNING		EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria		W _I	W _C	St	
3	C	Draw, dimension and annotate the plans: foundations, floors, roof and layout.			2	Drawing of a ground floor plan	40			
					2.1	Observance of axes		5	PT	
					2.2	Observance of the <i>National Building Code</i>		10	PT	
					2.3	Conformity of drawings with initial data		15	PT	
					2.4	Observance of drafting conventions	10	PT		
					3	Drawing of a layout plan	15			
					3.1	Observance of front, side and rear setbacks		5	PT	
					3.2	Observance of rules regarding exterior features such as pool, patio, driveway		5	PT	
					3.3	Observance of location of the water service line and electrical service entrance		5	PT	

D. DRAW, DIMENSION AND ANNOTATE A STAIR WITH SEVERAL FLIGHTS							Duration: 10%		
2	D.1	Calculate stairs of varying difficulty.	Review of Module 6 Stairs with two flights L-shaped stairs U-shaped stairs Curved stairs, etc.						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours				
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
3	D	Draw, dimension and annotate a stair with several flights.				4	Drawing of stairs	15			
						4.1	Accurate calculations		5	PT	
						4.2	Observance of standards used to produce drawings of stairs		5	PT	
						4.3	Accurate technical specifications		5	PT	
E. DRAW, DIMENSION AND ANNOTATE ELEVATIONS WITH BALCONIES, BAY WINDOWS, ETC.										Duration: 20%	
2	E.1	Determine the levels, axes and dimensions of the envelope.	Height of walls Dimensioning of aboveground, underground and party walls Roof components			Observance of axes					
2	E.2	Project the elevations in accordance with the plans.	Walls, projections, cantilevers, etc. Openings Chimney, balcony, fire escape, etc.			Accurate identification of the levels of the components of the façade					
2	E.3	Annotate the elevations.	Levels, dimensions and notes			Accurate location of the different components of the façades					
3	E	Draw, dimension and annotate elevations with balconies, bay windows, etc.									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours		
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
F. DRAW, DIMENSION AND ANNOTATE LONGITUDINAL OR TRANSVERSAL SECTIONS, WALL SECTIONS, PARTY WALLS AND COMPLEX DETAILS									
Duration: 20%									
2	F.1	Determine the levels and axes of a general section.	Review of Module 6 Height of walls, floors and roofs Accurate placement of axis lines			Appropriate selection of sections and details Observance of axes			
2	F.2	Determine the dimensions and components of aboveground and party walls.	In accordance with data Observance of Code, air barrier, vapour barrier, insulation, soundproofing, etc.						
2	F.3	Draw a complex detail.	Window jamb Window head Cantilever, etc.			Complete, accurate details			
3	F	Draw, dimension and annotate longitudinal or transversal sections, wall sections, party walls and complex details.							
G. COMPILE TABLES LISTING DOORS AND WINDOWS AND FINISHES									
Duration: 5%									
2	G.1	Prepare tables.	Review of Module 6 Table of doors and windows Table of finishes						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours			
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
2	G.2	Transcribe data in the tables.	In accordance with plans Number of doors and windows Dimensions Description Information on the finishes			Complete data Accurate technical specifications				
3	G	Compile tables.								
3	H	Have the work approved.	Review of Module 6			Observance of approval procedure Clear presentation				
3	I	Print the drawings.	Review of Module 6			Well-balanced layout Selection of suitable scale				
PRODUCE ARCHITECTURAL PLANS FOR A MULTI-FAMILY DWELLING										Duration: 5%
3	Produce architectural plans for a multi-family dwelling.					Appropriate use of computer system and software Appropriate use of reference materials Appropriate use of international and imperial systems of measurement Accurate drawings Complete, accurate dimensions and notes Customer satisfaction Observance of time limit				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

8

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)							Duration: 120 hours			
Statement of the Competency: <i>To produce architectural plans for a multi-family dwelling</i>										
COMPETENCY		LEARNING			EVALUATION					
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
					5	Consistency of drawings	10			
					5.1	Accurate transcription from one drawing to another		10	PT	
PRODUCE ARCHITECTURAL PLANS FOR A MULTI-FAMILY DWELLING										Duration: 5%
(including evaluation for the purpose of certification)										
4	PRODUCE ARCHITECTURAL PLANS FOR A MULTI-FAMILY DWELLING.				Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies					
PRODUCE ARCHITECTURAL PLANS FOR A MULTI-FAMILY DWELLING										
5	PRODUCE ARCHITECTURAL PLANS FOR A MULTI-FAMILY DWELLING.									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 408 – ARCHITECTURAL PLANS: MULTI-FAMILY DWELLINGS (Module 17)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce architectural plans for a multi-family dwelling. The suggested duration for this examination is eight hours. All the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The examination is done using a computer equipped with drafting software.

The candidates will be given the following:

- a sketch of a multi-family dwelling
- a foundation construction plan
- the required wall sections
- the floor levels required for calculating stairs
- the data required for drawings of the ground floor and stairs (e.g. dimensions of home appliances, counter).

Task 1 consists in drawing, dimensioning and annotating all or part of the ground floor plan with several landings on the basis of:

- sketches
- wall sections
- the required data

This task is used to evaluate criteria 2.1 to 2.4.

Candidates have approximately 3 hours 30 minutes for this task.

Task 2 consists in calculating, determining and indicating the floor structure on a plan on the basis of:

- tables on the structure (e.g. joists, girders, belts)
- architectural plans or sketches

This task is used to evaluate criteria 1.1 to 1.3.

Candidates have approximately 1 hour for this task.

Task 3 consists in calculating stairs and drawing a section of approximately five steps, including a balustrade, on the basis of:

- floor plans
- floor levels

This task is used to evaluate criteria 4.1 to 4.3.

Candidates have approximately 1 hour 30 minutes for this task.

Task 4 consists in drawing a layout plan for a multi-family dwelling on the basis of:

- municipal by-laws
- architectural plans or sketches

This task is used to evaluate criteria 3.1 to 3.3.

Candidates have approximately 2 hours for this task.

3 MATERIALS

The following are required for the examination:

- a computer equipped with drafting software
- the *National Building Code*
- course notes
- manufacturers' specifications concerning construction materials and equipment
- municipal by-laws

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 17 – Architectural Plans: Multi-Family Dwellings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 408 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 INFORMATION ON THE STRUCTURE			
1.1 Observance of axes:			
- conformity of axis lines with initial data	☐	☐	0 or 5
1.2 Appropriate dimensions of the structural components:			
- accurate number of columns	☐	☐	
- accurate dimensions of master beams	☐	☐	
- accurate dimensions of joists or girders	☐	☐	0 or 10
1.3 Accurate identification of the structure:			
- observance of drafting conventions	☐	☐	
- accurate, complete notes	☐	☐	0 or 5
2 DRAWING OF A GROUND FLOOR PLAN			
2.1 Observance of axes:			
- alignment of walls with axes	☐	☐	0 or 5
2.2 Observance of the <i>National Building Code</i> :			
- conformity of discharge areas	☐	☐	
- conformity of party wall	☐	☐	0 or 10

OBSERVATION			RESULT
	YES	NO	
2.3 Conformity of drawings with initial data:			
- dimensions of walls in accordance with data	☐	☐	
- dimensions of rooms in accordance with standards and data	☐	☐	
- openings in accordance with standards and data	☐	☐	0 or 15
Tolerance: two errors			
2.4 Observance of drafting conventions:			
- dimensions and notes in accordance with standards	☐	☐	0 or 10
Tolerance: two errors			
3 DRAWING OF A LAYOUT PLAN			
3.1 Observance of front, side and rear setbacks:			
- conformity of plan with municipal by-laws	☐	☐	
- consistency of building with initial plans	☐	☐	
- drawing in conformity with drafting standards	☐	☐	0 or 5
3.2 Observance of rules regarding exterior features such as pool, patio, driveway:			
- conformity of plan with municipal by-laws	☐	☐	
- installation in conformity with data	☐	☐	
- drawing in conformity with drafting standards	☐	☐	0 or 5
3.3 Observance of location of the water service line and electrical service entrance:			
- conformity of plan with municipal by-laws	☐	☐	
- accurate lines and symbols in effect	☐	☐	0 or 5
4 DRAWING OF STAIRS			
4.1 Accurate calculations:			
- accurate levels	☐	☐	
- accurate stair calculations	☐	☐	0 or 5

OBSERVATION			RESULT
4.2	Observance of standards used to produce drawings of stairs:		
	- stairs	☐	☐
	- balustrade	☐	☐
4.3	Accurate technical specifications:		
	- accurate notes pertaining to materials	☐	☐
	- accurate dimensions	☐	☐
5	CONSISTENCY OF DRAWINGS		
5.1	Accurate transcription from one drawing to another	☐	☐
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)					Duration: 45 hours			
Statement of the Competency: <i>To research information related to electricity</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
RESEARCH INFORMATION RELATED TO ELECTRICITY								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
A. SELECT THE SOURCES OF INFORMATION								
Duration: 5%								
2	A.1 Formulate the purpose of the research.	Comprehension of requirements Verification and clarification of initial data Review of Module 11						
2	A.2 Select the technical documentation.	Reference materials Course notes <i>National Building Code</i> Catalogues Technical data sheets Internet Review of Module 11						
2	A.3 Select a plan for the background drawing.	Review of Module 11						
3	A Select the sources of information.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)							Duration: 45 hours			
Statement of the Competency: <i>To research information related to electricity</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
B. GATHER THE INFORMATION										
Duration: 15%										
2	B.1	Locate information related to the electrical system of a building in the sources of information retained.	Lighting and control General outlets Special purpose outlets Independent heating system							
2	B.2	Distinguish the types of current.	Alternate current Direct current							
2	B.3	Recognize the factors influencing electric current.	Voltage Intensity Resistance							
2	B.4	Distinguish the types of electrical assemblies.	Serial circuits Parallel circuits Combined or serial/parallel circuits							
2	B.5	Locate the heat loss.	Walls Ceilings Floors Doors Windows							
2	B.6	Distinguish the types of branch circuits.	Types of branch circuits Components of a branch circuit							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)						Duration: 45 hours			
Statement of the Competency: <i>To research information related to electricity</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
3	B Gather the information.			1 Information gathering 1.1 Correct location of the information 1.2 Accurate interpretation of the information Accurate information Complete gathering of the required information	15	5 10	PT PT		
C. PROCESS THE INFORMATION									Duration: 40%
2	C.1 Calculate heat loss.	Surface areas Transmission coefficient (U, USI) Temperature difference System of measurement (international or imperial) Accurate formulas Room by room For the entire building							
2	C.2 Select the heating units.	Power Voltage Types of heating units							
2	C.3 Calculate the electrical loads.	Basic building load Heating load Loads of different electrical accessories (e.g. stove, water heater, dryer)							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)								Duration: 45 hours		
Statement of the Competency: <i>To research information related to electricity</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	C.4	Calculate the capacity of the branch circuit.	Total building load Voltage used							
2	C.5	Select the size of the conductors.	Current intensity Current voltage <i>National Building Code</i>							
3	C	Process the information.			2	Calculations related to electricity		50		
					2.1	Accurate heat loss calculations				
					2.2	Appropriate selection of heating units				
					2.3	Accurate calculations related to electrical loads				
					2.4	Accurate calculations related to the capacity of the branch circuit				
					2.5	Appropriate selection of conductors				
D. APPLY THE TECHNICAL INFORMATION										
Duration: 30%										
2	D.1	Sketch an electrical circuit.	Symbols Lighting and control General outlets Special purpose outlets Circuit diagrams							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)							Duration: 45 hours			
Statement of the Competency: <i>To research information related to electricity</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	D.2	Annotate the sketch of the electrical circuit by specifying the data and technical specifications.	Circuit number Capacity Voltage Size of conductors Size of electrical equipment							
2	D.3	Sketch a branch circuit.	Symbols Proportion of different components Branch head Tubular component of the mast Bracket Roof plate Clamp Reducing coupling Rigid conduit Base and meter LB trim Service box Bypass panel Conductors							
2	D.4	Annotate the branch circuit sketch by specifying the data and technical specifications.	Size of the tubular component of the mast Size of the rigid conduit Size of conductors							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)					Duration: 45 hours			
Statement of the Competency: <i>To research information related to electricity</i>								
COMPETENCY		LEARNING		EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
		Capacity of the service box Capacity of the bypass panel Capacity of the fuses or main circuit breaker Size of the staple						
3	D Apply the technical information.			3 Sketch of the electrical distribution system 3.1 Approximate sketch of the electrical circuit 3.2 Appropriate sketch of the branch circuits 3.3 Accurate notes relating to: - capacity - voltage - size Complete, accurate data	35	15 10 10	PT PT PT	
RESEARCH INFORMATION RELATED TO ELECTRICITY								Duration: 5%
3	Research information related to electricity.			Observance of the <i>Québec Electrical Code</i> Observance of the <i>Act respecting the conservation of energy in buildings</i> Observance of instructions Compliance with architectural and structural plans Use of correct terminology				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C,...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)					Duration: 45 hours		
Statement of the Competency: <i>To research information related to electricity</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
2	Demonstrate autonomy and initiative.	Importance of adopting a proactive attitude when researching information Educational Aim 1					
2	Demonstrate openness to change.	Importance of being open in order to adapt to frequent changes in electrical products Educational Aim 3					
RESEARCH INFORMATION RELATED TO ELECTRICITY							
<i>Duration: 5%</i>							
(including evaluation for the purpose of certification)							
4	RESEARCH INFORMATION RELATED TO ELECTRICITY.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
RESEARCH INFORMATION RELATED TO ELECTRICITY							
5	RESEARCH INFORMATION RELATED TO ELECTRICITY.	More complex residential or commercial project Example: Luxury residence with specific elements: - calculation of heating - selection of heating equipment - sketch of the circuit and branch circuit with notes					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 413 – INFORMATION RELATED TO ELECTRICITY (Module 18)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to research information related to electricity. The suggested duration for this practical examination is three hours. Several candidates may be evaluated at the same time, depending on the availability of materials.

2 EXAMINATION PROCEDURE

Task 1 consists in gathering information related to electricity from the sources made available to the candidates.

Candidates have approximately 30 minutes for this task.

Task 2 consists in using this information to do calculations related to the heat loss, electrical loads and electrical circuits of a building. The candidates must also select the heating units and conductor sizes.

Candidates have approximately 1 hour 15 minutes for this task.

Task 3 consists in applying the information, and producing or completing an electrical distribution system and a sketch of a building's electrical circuits containing details on the capacity, voltage and size of the electrical equipment.

Candidates have approximately 1 hour 15 minutes for this task.

3 MATERIALS

The following are required for the examination:

- a drafting table
- drafting instruments
- a calculator
- the *Québec Electrical Code*
- architectural and structural plans
- relevant reference materials
- manufacturers' catalogues

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 18 – Information Related to Electricity Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 413 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 INFORMATION GATHERING			
1.1 Correct location of the information	☐	☐	0 or 5
1.2 Accurate interpretation of the information	☐	☐	0 or 10
2 CALCULATIONS RELATED TO ELECTRICITY			
2.1 Accurate heat loss calculations Tolerance: one error	☐	☐	0 or 15
2.2 Appropriate selection of heating units	☐	☐	0 or 10
2.3 Accurate calculations related to electrical loads	☐	☐	0 or 10
2.4 Accurate calculations related to the capacity of the branch circuit	☐	☐	0 or 10
2.5 Appropriate selection of conductors	☐	☐	0 or 5
3 SKETCH OF THE ELECTRICAL DISTRIBUTION SYSTEM			
3.1 Appropriate sketch of the electrical circuit:			
- general outlets identified, positioned and in sufficient number (depending on the Code)	☐	☐	
- special purpose outlets identified and positioned	☐	☐	

OBSERVATION			RESULT
	YES	NO	
- heating unit/control identified and positioned	☐	☐	0 or 15
- lighting/switch in accordance with specifications	☐	☐	
- observance of symbols	☐	☐	
Tolerance: two errors			
3.2 Appropriate sketch of the branch circuits:			
- observance of symbols	☐	☐	0 or 10
- components identified and positioned correctly	☐	☐	
3.3 Accurate notes relating to:			
- capacity	☐	☐	0 or 10
- voltage	☐	☐	
- dimension	☐	☐	
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 423 – ELECTRICAL PLANS (Module 19)					Duration: 45 hours			
Statement of the Competency: <i>To produce electrical plans</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE ELECTRICAL PLANS</i>								
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies						
<i>A. PLAN THE WORK</i>								
2	A.1 Interpret the initial data.	Type of plan (commercial or residential) System of measurement (international or imperial) <i>National Building Code</i> Technical data sheets Catalogue Review of Module 12		Accurate interpretation of the initial data				
2	A.2 Interpret the calculations and notes.	Capacity Voltage Grade Size		Accurate interpretation of the calculations and sketches				
2	A.3 List the plans to be drawn.	According to the project’s complexity Number of floors Section Plan view Review of Module 12		Complete list of plans to be produced				
2	A.4 Plan their work in accordance with the deadlines provided.	Work schedule Project’s complexity		Realistic estimate of time needed to do the work				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours			
Statement of the Competency: <i>To produce electrical plans</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
3	A	Plan the work.								
B. PREPARE THE BACKGROUND DRAWING										Duration: 8%
2	B.1	Select the architectural components of the plan to be retained.	Structural and architectural components required for the electrical plans Review of Module 12							
2	B.2	Recognize the symbols on a plan.	Use of symbols and colours in accordance with the conventions related to background drawings Symbols representing the components of an electrical system			Conformity of symbols with the conventions of background drawings				
3	B	Prepare the background drawing.				1 Background drawing 1.1 Appropriate selection of the components of the plan to be retained 1.2 Conformity of symbols with the conventions related to background drawings Conformity of the background drawings with the architectural and structural plans	15	10 5	PT PT	
C. PRODUCE A PLAN										Duration: 35%
2	C.1	Produce a plan of lighting, outlets and services.	Symbol legend Placement of lighting Placement of general and special purpose outlets			Clear drawings Accurate drawings Complete drawings				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

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ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours				
Statement of the Competency: <i>To produce electrical plans</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
			Services in accordance with requirements Equipment dimensions <i>Québec Electrical Code</i> Links with other specialties								
2	C.2	Annotate the essential technical specifications.	Circuit number Size of conductors Identification of lighting/switch Amperage Voltage Power								
3	C	Produce a plan of lighting, outlets and services.				2	Distribution plan	40			
						2.1	Observance of the <i>Québec Electrical Code</i>		10	PT	
						2.2	Accurate symbols		15	PT	
						2.3	Conformity of drawings with the initial data		15	PT	
D. DRAW THE DETAILS, A MAST AND A SERVICE ENTRANCE DIAGRAM										Duration: 30%	
2	D.1	Draw the details.	Symbols Diagram of circuit outlets, lighting and services Sequence of electrical distribution Identification of rooms in the buildings								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours	
Statement of the Competency: <i>To produce electrical plans</i>								
COMPETENCY			LEARNING		EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
2	D.2	Annotate the technical specifications essential to the details.	Circuit number Size of conductors Identification of lighting/switch Amperage Voltage Power					
2	D.3	Draw a mast.	Symbols Sequence in which the components are placed: - branch head - tubular component of the mast - bracket - roof plate - clamp - reducing coupling - rigid conduit					
2	D.4	Annotate the technical specifications essential to the mast.	Size of the tubular component of the mast Size of the rigid conduit Size of conductors					
2	D.5	Draw a service entrance diagram.	Symbols Sequence in which the components are placed: - base and meter - LB trim - service box - bypass panel - conductors					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours				
Statement of the Competency: <i>To produce electrical plans</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St	
2	D.6	Annotate the technical specifications essential to the service entrance diagram.	Capacity of the service box Capacity of the bypass panel Capacity of the fuse or main circuit breaker Size of the staple								
3	D	Draw the details, a mast and a service entrance diagram.				3	Details and wiring diagram	30			
						3.1	Appropriate selection of details		10	PT	
						3.2	Accurate layout and annotation of the components of the electrical system		10	PT	
						3.3	Consistency throughout the different electrical drawings		10	PT	
E. COMPILE A TABLE LISTING THE NECESSARY MATERIALS										Duration: 5%	
2	E.1	Prepare a list of materials.	Information to be included: - name of components - manufacturer - model number - colour - dimensions - quantities - voltage								

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours		
Statement of the Competency: <i>To produce electrical plans</i>									
COMPETENCY			LEARNING		EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
3	E	Compile a table listing the necessary materials.			4 List of materials 4.1 Complete list of materials Accurate numbering Accurate transcription of the technical description of the materials	10	10	PT	
F. HAVE THE WORK APPROVED									Duration: 3%
2	F.1	Verify the conformity of their work.	Conformity with initial data Symbols and notes Placement of equipment Links with other specialties Table of materials Review of Module 5 Educational Aim 5		Observance of approval procedure				
2	F.2	Present their work.	Logical steps in the presentation Approval process Elements essential to the presentation Corrections, if necessary Openness to criticism		Clear presentation of project				
3	F	Have the work approved.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours				
Statement of the Competency: <i>To produce electrical plans</i>											
COMPETENCY		LEARNING			EVALUATION						
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
G. PRINT THE DRAWINGS										Duration: 2%	
2	G.1 Determine the printing scale.	In accordance with the page format used In accordance with the components to be presented in the plan			Selection of suitable scale						
2	G.2 Balance the layout.	In accordance with the plan and details to be presented									
3	G Print the drawings.				5 Printing of drawings 5.1 Well-balanced layout	5	5	PT			
PRODUCE ELECTRICAL PLANS										Duration: 7%	
3	Produce electrical plans.				Appropriate use of computer system and software Appropriate use of reference materials Appropriate use of international and imperial systems of measurement Consistency of the electrical plans with the architectural, structural and mechanical plans Customer satisfaction Observance of drafting conventions Observance of time limit						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

8

825 423 – ELECTRICAL PLANS (Module 19)							Duration: 45 hours		
Statement of the Competency: <i>To produce electrical plans</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE ELECTRICAL PLANS</i> <i>Duration: 8%</i>									
(including evaluation for the purpose of certification)									
4	PRODUCE ELECTRICAL PLANS.				Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
<i>PRODUCE ELECTRICAL PLANS</i>									
5	PRODUCE ELECTRICAL PLANS.	Residential or commercial project: - electrical distribution system for outlets, lighting and services - circuit diagram - wiring diagram - list of materials							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 423 – ELECTRICAL PLANS (Module 19)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce electrical plans. The suggested duration for this practical examination is three hours. Several candidates may be evaluated at the same time, depending on the availability of materials.

2 EXAMINATION PROCEDURE

The task consists in using a computer to prepare a background drawing and to draw and annotate an electrical plan for a building. The work must also contain a complete list of materials, a legend and a diagram of a mast and its components; a sketch or descriptive specifications will be provided for this purpose. The candidates must do the layout as requested and print their work.

3 MATERIALS

The following are required for the examination:

- a computer equipped with various software
- peripherals
- a calculator
- architectural and structural plans
- specifications
- the *Québec Electrical Code*
- manufacturers' catalogues
- technical documents

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 19 – Electrical Plans Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 423 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 BACKGROUND DRAWING			
1.1 Appropriate selection of the components of the plan to be retained:			
- inclusion of exterior walls, interior partitions, doors and windows	☐	☐	
- inclusion of structural axes	☐	☐	
- inclusion of plumbing fixtures	☐	☐	
- inclusion of counters and cabinets	☐	☐	0 or 10
1.2 Conformity of symbols with the conventions related to background drawings	☐	☐	0 or 5
2 DISTRIBUTION PLAN			
2.1 Observance of the <i>Québec Electrical Code</i>	☐	☐	0 or 10
2.2 Accurate symbols	☐	☐	0 or 15
Tolerance: one error			
2.3 Conformity of drawings with initial data	☐	☐	0 or 15
Tolerance: one error			

OBSERVATION			RESULT
	YES	NO	
3 DETAILS AND WIRING DIAGRAM			
3.1 Appropriate selection of details (circuit diagram):			
- correct symbols	☐	☐	
- inclusion of all components	☐	☐	0 or 10
3.2 Accurate layout and annotation of the components of the electrical system	☐	☐	0 or 10
3.3 Consistency throughout the different electrical drawings:			
- distribution plan	☐	☐	
- wiring diagram	☐	☐	
- circuit diagram	☐	☐	0 or 10
4 LIST OF MATERIALS			
4.1 Complete list of materials:			
- name of elements	☐	☐	
- manufacturer	☐	☐	
- model number	☐	☐	
- colour	☐	☐	
- quantities	☐	☐	
- voltage	☐	☐	0 or 10
Tolerance: one error			
5 PRINTING OF DRAWINGS			
5.1 Well-balanced layout:			
- observance of work scale	☐	☐	
- appropriate layout of drawings	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 437 – PRESENTATION DRAWINGS (Module 20)					Duration: 105 hours		
Statement of the Competency: <i>To produce presentation drawings</i>							
COMPETENCY		LEARNING			EVALUATION		
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE PRESENTATION DRAWINGS</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
<i>A. PLAN THE WORK</i>					<i>Duration: 5%</i>		
2	A.1 Interpret the instructions.	Goal of project Final presentation Selection of mediums Work schedule		Accurate interpretation of the initial data Appropriate selection of work mediums Realistic estimate of time needed to do the work			
2	A.2 Determine which views should be used.	In accordance with instructions In accordance with the drawings to be produced		Appropriate selection of views			
2	A.3 Select the drawings required to develop the presentation.	Elevations Plans Sections					
3	A Plan the work.						
<i>B. PRODUCE A PERSPECTIVE BACKGROUND DRAWING</i>					<i>Duration: 20%</i>		
2	B.1 Use the 3D drafting commands.	Drafting commands Editing commands Info commands Visualization commands		Proper use of 3D drafting commands Proper use of 3D drafting editing commands Proper use of 3D drafting info commands			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 437 – PRESENTATION DRAWINGS (Module 20)							Duration: 105 hours			
Statement of the Competency: <i>To produce presentation drawings</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	B.2	Draw the main objects.	Walls Roofs Floors Ceilings							
2	B.3	Model the objects.	Doors Windows Offsets Mezzanine							
3	B	Produce a perspective background drawing.				1	Production of a background drawing	40		
						1.1	Correct proportions of all elements in the drawing		20	PT
						1.2	Inclusion of all elements represented in the drawing		20	PT
C. DRAW THE ARCHITECTURAL DETAILS										Duration: 10%
2	C.1	Separate the layers in order to apply the materials.	In accordance with the project In accordance with the different materials (one layer per material)							
2	C.2	Develop the details.	Furniture Mouldings Reliefs Fixtures							
3	C	Draw the architectural details.				2	Drawing of the architectural details	20		
						2.1	Accurate details		5	PT
						2.2	Attractive details		5	PT
						2.3	Correct proportions		10	PT

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 437 – PRESENTATION DRAWINGS (Module 20)							Duration: 105 hours				
Statement of the Competency: <i>To produce presentation drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St		
D. INCORPORATE THE SURROUNDINGS (PEOPLE, CARS, TREES, ETC.)										Duration: 5%	
2	D.1	Create or add the furnishings.	Kitchen furnishings			Originality of decor					
			Living room furnishings, etc.			Pleasing presentation					
2	D.2	Add the decorative items.	Pictures								
			Telephone								
			Lamps, etc.								
3	D	Incorporate the surroundings (people, cars, trees, etc.)				3 Incorporation of furnishings and decorative items	5				
						3.1 Correct proportions		5	PT		
E. REPRESENT THE LIGHTING OF THE BUILDING AND ITS SURROUNDINGS										Duration: 5%	
2	E.1	Use the different lighting commands.	Directional			Proper use of lighting commands					
			Spotlight								
			Positional								
			Ambient lighting								
2	E.2	Select the light sources.	In accordance with instructions			Appropriate selection of light sources					
			Interior project								
			Exterior project								
3	E	Represent the lighting of the building and its surroundings.				4 Lighting	10				
						4.1 Appropriate selection of light intensity		5	PT		
						4.2 Appropriate location of the lighting		5	PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

2005-01-31

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 437 – PRESENTATION DRAWINGS (Module 20)							Duration: 105 hours					
Statement of the Competency: <i>To produce presentation drawings</i>												
COMPETENCY		LEARNING			EVALUATION							
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St		
G. ADD COLOUR PROCEDURE										Duration: 30%		
2	G.1	Select or create materials.	Materials library Editing of materials Search for images			Attractive drawing						
2	G.2	Apply materials to an object.	By colours By layers By objects			Proper technique used to colour by hand or computer						
2	G.3	Adjust the scale of materials.	Determination of proportions by distribution Determination of proportions by trimming Determination of fixed-scale proportions Determination of proportions adjusted to the object									
3	G	Add colour procedure.				5	Colour	10				
						5.1	Observance of materials and textures		5	PT		
						5.2	Appropriate ambiance for the drawing		5	PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 437 – PRESENTATION DRAWINGS (Module 20)							Duration: 105 hours				
Statement of the Competency: <i>To produce presentation drawings</i>											
COMPETENCY			LEARNING			EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St		
H. CARRY OUT THE ASSEMBLY OF THE DRAWING										Duration: 5%	
2	H.1	Create an image.	Production of a file Conversion of a file Framing of the image			Proper use of illustration materials					
2	H.2	Do the layout.	Plan Elevation Perspective Image			Correct proportion between title and drawing Attractive presentation Clean presentation					
3	H	Carry out the assembly of the drawing.				6 Assembly of drawing 6.1 Appropriate selection of perspective	5	5	PT		
F. PRINT THE DRAWING										Duration: 5%	
2	F.1	Use different printing software.	Selection of software Print format Landscape or portrait			Well-balanced layout Appropriate selection of perspective					
2	F.2	Use a colour printer.	Quality of the photo Operation of printer								
3	F	Print the drawing.				7 Printing of drawing 7.1 Appropriate modification of printing variables	5	5	PT		
PRODUCE PRESENTATION DRAWINGS										Duration: 5%	
3	Produce presentation drawings.					8 Work schedule 8.1 Observance of time limit	5	5	PT		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 437 – PRESENTATION DRAWINGS (Module 20)						Duration: 105 hours		
Statement of the Competency: <i>To produce presentation drawings</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
					Appropriate use of computer system and software Attractive presentation Compliance of the presentation drawings with the plans			
PRODUCE PRESENTATION DRAWINGS						Duration: 10%		
(including evaluation for the purpose of certification)								
4	PRODUCE PRESENTATION DRAWINGS.				Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
PRODUCE PRESENTATION DRAWINGS								
5	PRODUCE PRESENTATION DRAWINGS.	Projects involving more details						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 437– PRESENTATION DRAWINGS (Module 20)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce presentation drawings. The suggested duration for this practical examination is six hours. All of the candidates may be evaluated at the same time.

2 EXAMINATION PROCEDURE

The candidates will be given the following:

- the plan for a piece of furniture or a small building such as a storage shed
- technical data sheets
- the list of materials
- the type of lighting
- symbols for accessories
- other data depending on the examination

Task 1 consists in producing a background drawing and drawing the architectural details for a piece of furniture or a small building on the basis of:

- the plan
- technical data sheets
- the location

Candidates have approximately 4 hours for this task.

Task 2 consists in rendering the piece of furniture or small building (incorporating the decor, lighting and colours) on the basis of:

- the list of materials
- the type of lighting
- the block of accessories

Candidates have approximately 1 hour 45 minutes for this task.

Task 3 consists in assembling and printing the drawings according to the:

- perspective
- layout

Candidates have approximately 15 minutes for this task.

3 MATERIALS

The following is required for the examination:

- a computer equipped with 3D drafting software

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 20 – Presentation Drawings Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 437 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 PRODUCTION OF A BACKGROUND DRAWING			
1.1 Correct proportions of all elements in the drawing:			
- height in conformity with plan	☐	☐	
- width in conformity with plan	☐	☐	
- depth in conformity with plan	☐	☐	0 or 20
Tolerance: two errors			
1.2 Inclusion of all elements represented in the drawing	☐	☐	0 or 20
Tolerance: one error			
2 DRAWING OF THE ARCHITECTURAL DETAILS			
2.1 Accurate details:			
- components added and removed with precision	☐	☐	
- precise angles	☐	☐	
- precise rotation of objects	☐	☐	0 or 5
2.2 Attractive details	☐	☐	0 or 5
2.3 Correct proportions	☐	☐	0 or 10
3 INCORPORATION OF FURNISHINGS AND DECORATIVE ITEMS			
3.1 Correct proportions	☐	☐	0 or 5

OBSERVATION			RESULT
	YES	NO	
4 LIGHTING			
4.1 Appropriate selection of light intensity:			
- lighting in conformity with data	☐	☐	0 or 5
- appropriate selection of types of lights	☐	☐	
4.2 Appropriate location of the lighting:			
- accurate placement	☐	☐	0 or 5
- suitable projection angle	☐	☐	
5 COLOUR			
5.1 Observance of materials and textures:			
- materials appropriate for each object	☐	☐	0 or 5
- appropriate selection of scale for materials	☐	☐	
5.2 Appropriate ambiance for the drawing	☐	☐	0 or 5
6 ASSEMBLY OF DRAWING			
6.1 Appropriate selection of perspective:			
- observance of distance in relation to the view requested	☐	☐	0 or 5
- appropriate selection of perspective	☐	☐	
7 PRINTING OF DRAWING			
7.1 Appropriate modification of printing variables	☐	☐	0 or 5
8 WORK SCHEDULE			
8.1 Observance of time limit	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 211 – JOB SEARCH TECHNIQUES (Module 21)				Duration: 15 hours	
Statement of the Competency: <i>To use job search techniques</i>					
COMPETENCY		LEARNING		EVALUATION	
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I W _C
PHASE 1: PREPARING DOCUMENTS FOR THE JOB SEARCH Duration: 50%					
1.1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies			
1.2	Become familiar with various sources of information that can be used before and while preparing documents for the job search	Use of conventional and computerized methods In the field of residential and commercial drafting			
1.3	Write a résumé and a cover letter.	Purpose of a résumé, various types of résumés, their characteristics, and factors involved in deciding which type to use Importance of adapting a résumé to the position being applied for Content of a résumé Quality criteria Documents to be enclosed with the résumé Rules for writing a résumé Purpose of a cover letter Rules for writing a cover letter		1 Prepare documents for the job search. 1.1 Write a résumé in accordance with presentation rules. 1.2 Include relevant information in the résumé. 1.3 Write a cover letter in accordance with presentation rules.	60

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 211 – JOB SEARCH TECHNIQUES (Module 21)					Duration: 15 hours	
Statement of the Competency: <i>To use job search techniques</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
		Documents to be included in the portfolio Rules for assembling a portfolio				
PHASE 2: PREPARING AND FOLLOWING-UP A JOB SEARCH PLAN						
Duration: 40%						
2.1	Prepare a list of potential employers.	In the field of residential and commercial drafting Companies requiring the services of a residential and commercial draftsman In accordance with their interests and values Other criteria: size of company, location		2 Prepare a list of potential employers. 2.1 List three types of establishments that could meet their requirements.	10	10
2.2	Prepare for a selection interview.	Type of preparation required Information on the employer and company Questions to ask Comments to make Attitudes to adopt Importance of being well prepared				
2.3	Plan the steps involved in the job search plan.	Sources to consult Steps to take: telephone calls, letters, document preparation, meetings, preparation for an interview, planning follow-ups		3 Prepare a job search plan. 3.1 Include relevant information in their plan on the steps involved in their job search, the sources to be consulted, the documents to be prepared and the procedures to be followed.	15	15

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES
RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 211 – JOB SEARCH TECHNIQUES (Module 21)					Duration: 15 hours	
Statement of the Competency: <i>To use job search techniques</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
2.4	Keep a journal on the various steps of the job search and the procedure followed.	Recording in their plan the steps carried out, as well as their reactions, impressions or comments throughout the job search				
PHASE 3: EVALUATING JOB SEARCH TECHNIQUES						
Duration: 10%						
3.1	Analyze their procedure.	Analysis of their journal: - strengths - aspects to be improved - means to improve these aspects				
3.2	Assess their work and their job search.	Presentation of their procedure and the results of their analysis		4 Assess their job search techniques. 4.1 Present an assessment of their job search to the teacher.	15	15

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 211 – JOB SEARCH TECHNIQUES (Module 21)

INFORMATION ON THE EVALUATION

Evaluation of the candidates' participation is based on the learning activities, that is, writing a résumé and cover letter, assembling a portfolio and preparing a job search plan.

PHASE 1: PREPARING DOCUMENTS FOR THE JOB SEARCH

1 PREPARE DOCUMENTS FOR THE JOB SEARCH

Candidates must write a résumé and cover letter on their own, in accordance with the usual writing rules and taking special care with the presentation.

The learning situation may be based on real or hypothetical job offers for residential and commercial draftspersons. Candidates will be provided with information such as the type of company, the job requirements and the qualifications sought.

Candidates must also assemble a portfolio containing architectural, structural, building mechanics, electrical and presentation drawings adapted to a hypothetical employer. The candidates decide which type of employer this should be.

PHASE 2: PREPARING AND FOLLOWING-UP A JOB SEARCH PLAN

2 PREPARE A LIST OF POTENTIAL EMPLOYERS

Candidates must prepare a list of employers likely to hire residential and commercial draftspersons. They must list at least three employers that correspond to their areas of professional and personal interests. For each employer, the candidates must indicate the company's field of activity, the competencies it is looking for in a draftsperson, and how these competencies relate to the candidate's interests.

3 PREPARE A JOB SEARCH PLAN

Candidates must prepare a job search plan on their own:

- for the position of a residential and commercial draftsperson, and containing information on the sources to be consulted, the documents to be prepared and the procedure to be followed.

PHASE 3: EVALUATING JOB SEARCH TECHNIQUES

4 ASSESS THEIR JOB SEARCH TECHNIQUES

Following a brief experimentation, the candidates must discuss their job search procedure with their teacher by identifying several strengths and several aspects that need to be improved.

Materials

- phone listings for companies working in residential and commercial drafting
- newspapers
- a computer equipped with various software and an Internet connection
- videos on a variety of subjects (e.g. looking for a job, writing a résumé, preparing for a selection interview)
- video recording equipment, camera

PARTICIPATION EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 21 – Job Search Techniques Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 211 RESULT: PASS ☐ FAIL ☐
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PARTICIPATION COMPONENTS	RESULT YES NO
PHASE 1: PREPARING DOCUMENTS FOR THE JOB SEARCH 1 PREPARE DOCUMENTS FOR THE JOB SEARCH 1.1 Write a résumé in accordance with presentation rules. 1.2 Include relevant information in the résumé. 1.3 Write a cover letter in accordance with presentation rules. 1.4 Prepare a portfolio of drawings in accordance with established rules.	 ☐☐ ☐☐ ☐☐ ☐☐
PHASE 2: PREPARING AND FOLLOWING-UP A JOB SEARCH PLAN 2 PREPARE A LIST OF POTENTIAL EMPLOYERS 2.1 List three types of establishments that could meet their requirements. 3 PREPARE A JOB SEARCH PLAN 3.1 Include relevant information in their plan on the steps involved in their job search, the sources to be consulted, the documents to be prepared and the procedure to be followed.	 ☐☐ ☐☐

PARTICIPATION COMPONENTS	RESULT YES NO
PHASE 3: EVALUATING JOB SEARCH TECHNIQUES 4 ASSESS THEIR JOB SEARCH TECHNIQUES 4.1 Present an assessment of their job search to the teacher: - steps carried out - two strengths - two aspects to improve	☐ ☐
Pass/fail conditions: 6 YESes out of a possible 7, and a YES for components 1.1, 1.2 and 1.4	

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)					Duration: 90 hours			
Statement of the Competency: <i>To research information related to ventilation</i>								
COMPETENCY			LEARNING		EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
RESEARCH INFORMATION RELATED TO VENTILATION								
1	Situating this competency with respect to the training program.		Reason for the competency Course outline Links with other competencies					
A. SELECT THE SOURCES OF INFORMATION								
Duration: 5%								
2	A.1	Formulate the purpose of the research.	Review of Module 11 Comprehension of requirements Verification and clarification of initial data					
2	A.2	Select the technical documentation.	Review of Module 11 Reference materials Course notes <i>National Building Code</i> Catalogues Technical data sheets Internet CD ROM					
2	A.3	Select a view plan for the background drawing.	Review of Module 11 Architectural and structural plans					
3	A	Select the sources of information.						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)							Duration: 90 hours		
Statement of the Competency: <i>To research information related to ventilation</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
B. GATHER INFORMATION <i>Duration: 25%</i>									
2	B.1	Locate in the documents retained the factors that influence comfort.	Factors influencing comfort: - temperature - air movement - relative humidity Ways of impacting comfort: - conduction - convection - radiation						
2	B.2	Distinguish the types of ventilation systems.	Supply system (passive, mechanical) Return system (passive, mechanical) Exhaust system (passive, mechanical)						
3	B	Gather information.			1 Information gathering 1.1 Correct location of the information 1.2 Accurate interpretation of the information Accurate information Complete list of information	25	10 15	PT PT	
C. PROCESS THE INFORMATION <i>Duration: 40%</i>									
2	C.1	Calculate heat loss in a building.	Review of Module 18 Temperature difference Conduction Air space						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)					Duration: 90 hours		
Statement of the Competency: <i>To research information related to ventilation</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
		Air film (interior, exterior) Thermal resistance Correction factor Transmission coefficient Infiltration System of measurement (international, imperial) Appropriate formulas Room by room For the entire building					
2	C.2 Calculate the air flow.	Appropriate formulas (international, imperial systems of measurement) Room by room For the entire building					
2	C.3 Calculate the air changes per hour.	Air flow Appropriate formulas (international, imperial systems of measurement) For a given room					
2	C.4 Select the heating and ventilation ducts, equipment and accessories.	Catalogue Appropriate technical data sheets Total air flow Location <i>National Building Code</i> Duct calculator					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)							Duration: 90 hours			
Statement of the Competency: <i>To research information related to ventilation</i>										
COMPETENCY			LEARNING		EVALUATION					
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria		W _I	W _C	St	
2	C.5	Prepare a complete list of the heating and ventilation equipment and accessories.	Information to be included: - name of components - manufacturer - model number - dimensions - quantities							
3	C	Process the information.			2	Calculations related to heating and ventilation	45			
					2.1	Accurate calculations of heat loss		15	PT	
					2.2	Accurate calculations of air change rates		15	PT	
					2.3	Appropriate selection of ducts, equipment and accessories		15	PT	
						Complete list of equipment and accessories				
D. APPLY THE TECHNICAL INFORMATION										Duration: 15%
2	D.1	Produce a simple line sketch of a ventilation system.	Air supply Air return Air exhaust							
2	D.2	Annotate the sketch by specifying the data and technical specifications.	Dimensions of terminal components Dimensions of ducts							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)							Duration: 90 hours			
Statement of the Competency: <i>To research information related to ventilation</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
3	D	Apply the technical information.				3	Heating and ventilation sketch	30		
						3.1	Appropriate sketch of the heating and ventilation system		15	PT
						3.2	Accurate notation of data and technical specifications		15	PT
RESEARCH INFORMATION RELATED TO VENTILATION										Duration: 10%
3	Research information related to ventilation.					Observance of current standards Observance of instructions Compliance with architectural and structural plans Use of correct terminology				
RESEARCH INFORMATION RELATED TO VENTILATION										Duration: 5%
(including evaluation for the purpose of certification)										
2	Demonstrate autonomy and initiative.		Importance of adopting a proactive attitude when researching information Educational Aim 1							
2	Demonstrate openness to change.		Importance of being open in order to adapt to frequent changes in the field of heating and ventilation Educational Aim 3							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)						Duration: 90 hours		
Statement of the Competency: <i>To research information related to ventilation</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
4	RESEARCH INFORMATION RELATED TO VENTILATION.				Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
RESEARCH INFORMATION RELATED TO VENTILATION								
5	RESEARCH INFORMATION RELATED TO VENTILATION.	Residential, commercial or industrial project: - calculation of heating/ventilation - selection of terminal components - duct dimensions - simple line sketch						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 446 – INFORMATION RELATED TO VENTILATION (Module 22)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to research information related to ventilation. The suggested duration for this practical examination is six hours. Several candidates may be evaluated at the same time, depending on the availability of materials.

2 EXAMINATION PROCEDURES

Task 1 consists in gathering information related to heating and ventilation using sources made available to the candidates.

Candidates have approximately 30 minutes for this task.

Task 2 consists in using this information to do calculations related to heating and ventilation and to the air change rate for a given situation. Candidates must also select the ventilation ducts, equipment and accessories.

Candidates have approximately 3 hours for this task.

Task 3 consists in producing or completing a simple line sketch that contains duct and accessory dimensions.

Candidates have approximately 2 hours 30 minutes for this task.

3 MATERIALS

The following are required for the examination:

- a drafting table
- drafting instruments
- a calculator
- a duct calculator
- architectural and structural plans
- relevant reference materials
- manufacturer's catalogues
- current codes and standards

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 22 – Information Related to Ventilation Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 446 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 INFORMATION GATHERING			
1.1 Correct location of the information:			0 or 10
- calculation formulas	☐	☐	
- technical data sheets	☐	☐	
1.2 Accurate interpretation of the information:			
- selection of calculation formulas adapted to requirements	☐	☐	0 or 15
2 CALCULATIONS RELATED TO HEATING AND VENTILATION			
2.1 Accurate calculations of heat loss	☐	☐	0 or 15
Tolerance: one error			
2.2 Accurate calculations of air change rates	☐	☐	0 or 15
Tolerance: one error			
2.3 Appropriate selection of ducts, equipment and accessories	☐	☐	0 or 15
Tolerance: one error			
3 HEATING AND VENTILATION SKETCH			
3.1 Appropriate sketch of the heating and ventilation system:			
- accurate placement of ducts and accessories	☐	☐	0 or 15

OBSERVATION			RESULT
	YES	NO	
3.2 Accurate notation of data and technical specifications:			
- inclusion of dimensions and air flows of ducts	☐	☐	
- inclusion of dimensions and air flows of accessories	☐	☐	0 or 15
Tolerance: one error			
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 457 – VENTILATION PLANS (Module 23)					Duration: 105 hours		
Statement of the Competency: <i>To produce ventilation plans</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
<i>PRODUCE VENTILATION PLANS</i>							
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies					
<i>A. PLAN THE WORK</i>							
2	A.1 Interpret the initial data.	Review of Module 12 Type of plan (commercial, residential or industrial) System of measurement (imperial or international) <i>National Building Code</i> Technical data sheets Catalogue		Accurate interpretation of the initial data			
2	A.2 Interpret calculations and sketches.	Duct calculator Simple line sketch		Accurate interpretation of calculations and sketches			
2	A.3 List the plans to be produced.	Review of Module 12 According to the project’s complexity Number of floors Section Plan view		Complete list of plans to be produced			

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 457 – VENTILATION PLANS (Module 23)						Duration: 105 hours			
Statement of the Competency: <i>To produce ventilation plans</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	A.4	Plan their work according to the deadline provided.	Review of Module 19 Work schedule Project complexity			Realistic estimate of time needed to do the work			
3	A	Plan the work.							
B. PREPARE THE BACKGROUND DRAWING									Duration: 5%
2	B.1	Select the architectural components to be retained.	Review of Module 12 Structural and architectural components required for the ventilation plans Symbols in accordance with the conventions related to background drawings						
3	B.2	Recognize the symbols on a plan.	Symbols representing a ventilation system			Conformity of symbols with the conventions related to background drawings			
3	B	Prepare the background drawing.				1 Background drawing 1.1 Appropriate selection of components of the plan to be retained 1.2 Conformity of symbols with the conventions related to background drawings Conformity of background drawing with architectural and structural plans	15	10 5	PT PT

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 457 – VENTILATION PLANS (Module 23)						Duration: 105 hours		
Statement of the Competency: <i>To produce ventilation plans</i>								
COMPETENCY			LEARNING		EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
D. CALCULATE THE DIMENSIONS OF THE SYSTEMS Duration: 5%								
2	D.1	Find the dimensions of the ducts.	Air flow Velocity or static pressure Duct calculator System sketch					
2	D.2	Find the dimensions of the heating and ventilation terminal accessories.	Air flow Velocity or static pressure Catalogue Appropriate technical data sheets					
2	D.3	Select a ventilator.	Calculation of the air changes on the basis of: - a given air flow - the <i>National Building Code</i> - appropriate formulas - a catalogue - technical data sheets					
3	D	Calculate the dimensions of the systems.			Use of the appropriate mathematical formulas Accurate calculations			
C. PRODUCE A PRELIMINARY VENTILATION SYSTEM PLAN Duration: 30%								
2	C.1	Produce a double line drawing of the heating and ventilation system components.	Based on simple line sketches and symbol legends Links with other specialities Coupling sequence					
2	C.2	Use the symbols specific to ventilation.	Conventional and special symbols					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 457 – VENTILATION PLANS (Module 23)							Duration: 105 hours			
Statement of the Competency: <i>To produce ventilation plans</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St	
3	C.3	Distinguish the respective uses of the ventilation system components.	Supply Return Exhaust							
2	C.4	Note the essential technical specifications.	Main equipment							
3	C	Produce a preliminary ventilation system plan.				Accurate drawing Observance of conventions related to schematic diagrams Observance of coupling sequence Complete list of specifications related to ventilation systems and equipment Consistency with plumbing, electrical, structural and architectural plans				
E. COMPILE A TABLE LISTING THE NECESSARY MATERIALS										Duration: 10%
2	E.1	List the materials.	Information to be included: - name of components - manufacturer - model number - component dimensions - quantities							
3	E	Compile a table listing the necessary materials.				2 Table of materials 2.1 Complete list of materials	10	10	PT	

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 457 – VENTILATION PLANS (Module 23)							Duration: 105 hours					
Statement of the Competency: <i>To produce ventilation plans</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
F. HAVE THE PRELIMINARY DRAWINGS AND EQUIPMENT APPROVED										Duration: 5%		
2	F.1	Verify the conformity of their work.	Links with sketch Symbols Types of couplings Links with other specialties Table of materials Educational Aim 5			Observance of approval procedure						
2	F.2	Present their work.	Logical steps in the presentation Approval process Components essential to the presentation Corrections, if necessary Openness to criticism			Clear presentation of project						
3	F	Have the preliminary drawings and equipment approved.										
G. PRODUCE THE WORKING DRAWINGS										Duration: 30%		
2	G.1	Annotate the plans for the complete heating and ventilation system.	Preliminary plan Symbols Types of couplings Links with other specialties									
2	G.2	Draw an elevation, and dimension and annotate a section illustrating the main components of the heating and ventilation system.	Plan view Symbols Types of couplings									

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 457 – VENTILATION PLANS (Module 23)							Duration: 105 hours			
Statement of the Competency: <i>To produce ventilation plans</i>										
COMPETENCY			LEARNING			EVALUATION				
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria		W _I	W _C	St
2	G.3	Draw, dimension and annotate a coupling detail of the main component of the heating and ventilation system.	Plan view Section view Symbols Types of couplings							
3	G	Produce the working drawings.	Saving of work			3 Ventilation plan		70		
						3.1 Correct symbols, dimensions and notes				
						3.2 Accurate layout of the components of the ventilation system				
						3.3 Observance of drafting conventions				
						3.4 Observance of current codes and standards				
						3.5 Consistency of drawings with the initial data				
						3.6 Consistency with plumbing, electrical, structural and architectural plans				
						Complete drawings Appropriate selection of details				

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 457 – VENTILATION PLANS (Module 23)							Duration: 105 hours					
Statement of the Competency: <i>To produce ventilation plans</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
H. PRINT THE DRAWINGS										Duration: 3%		
2	H.1	Determine the printing scale.	In accordance with the page format used In accordance with the components to be presented on the plan			Selection of suitable scale						
2	H.2	Balance the layout for a ventilation plan.	In accordance with the plan and details to be presented									
3	H	Print the drawings.				4 Printing of drawings 4.1 Well-balanced layout	5	5	PT			
PRODUCE VENTILATION PLANS										Duration: 5%		
3	Produce ventilation plans.					Appropriate use of computer system and software Appropriate use of reference materials Appropriate use of international and imperial systems of measurement Consistency throughout the different ventilation plans Customer satisfaction Observance of time limit						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

8

825 457 – VENTILATION PLANS (Module 23)						Duration: 105 hours		
Statement of the Competency: <i>To produce ventilation plans</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
<i>PRODUCE VENTILATION PLANS</i> <i>Duration: 5%</i>								
(including evaluation for the purpose of certification)								
4	PRODUCE VENTILATION PLANS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies				
<i>PRODUCE VENTILATION PLANS</i>								
5	PRODUCE VENTILATION PLANS.	Commercial, industrial or luxury residential project						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 457 – VENTILATION PLANS (Module 23)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce ventilation plans. The suggested duration is six hours.

2 EXAMINATION PROCEDURE

The task consists in using a computer to prepare background drawings, and to draw, dimension and annotate a double line ventilation plan for a building. The work must contain a coupling detail for the main component and a complete table of the system components. For this purpose, a simple line sketch of the ventilation system will be provided. The candidates must do the layout as requested and print their work.

3 MATERIALS

The following are required for the examination:

- a computer equipped with various software applications
- peripherals
- a calculator
- architectural and structural plans
- specifications
- various current codes and standards
- manufacturers' catalogues
- technical documents

4 SPECIAL INSTRUCTIONS

Candidates may use their course notes, as needed.

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 23 – Ventilation Plans Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 457 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 BACKGROUND DRAWING			
1.1 Appropriate selection of components of the plan to be retained:			
- inclusion of exterior walls, interior partitions, doors and windows	☐	☐	0 or 10
- inclusion of structural axes	☐	☐	
- inclusion of plumbing fixtures	☐	☐	
- inclusion of counters and cabinets	☐	☐	
1.2 Conformity of symbols with the conventions related to background drawings			0 or 5
2 TABLE OF MATERIALS			
2.1 Complete list of materials:			
- name of components	☐	☐	0 or 10
- manufacturer	☐	☐	
- model number	☐	☐	
- component dimensions	☐	☐	
- quantities	☐	☐	
Tolerance: one error			

OBSERVATION			RESULT
	YES	NO	
3 VENTILATION PLAN			
3.1 Correct symbols, dimensions and notes:			
- observance of symbol legend	☐	☐	
- appropriate duct dimensions	☐	☐	
- correct dimensions and notes for terminal components	☐	☐	
- correct dimensions and notes for the main component	☐	☐	0 or 15
Tolerance: one error			
3.2 Accurate layout of the components of the ventilation system:			
- observance of the placement of each component of the ventilation system	☐	☐	0 or 15
Tolerance: one error			
3.3 Observance of drafting conventions:			
- highlighting of ventilation system	☐	☐	0 or 10
3.4 Observance of current codes and standards	☐	☐	0 or 10
3.5 Consistency of drawings with the initial data	☐	☐	0 or 10
3.6 Consistency with plumbing, electrical, structural and architectural plans	☐	☐	0 or 10
4 PRINTING OF DRAWINGS			
4.1 Well-balanced layout:			
- observance of work scale	☐	☐	
- appropriate layout of drawings	☐	☐	0 or 5
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 468 – COMMERCIAL BUILDING PLANS (Module 24)							Duration: 120 hours		
Statement of the Competency: <i>To produce commercial building plans</i>									
COMPETENCY		LEARNING			EVALUATION				
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St		
PRODUCE COMMERCIAL BUILDING PLANS									
1	Situate this competency with respect to the training program.	Reason for the competency Course outline Links with other competencies							
A. PLAN THE WORK									
2	A.1 Interpret the preliminary drawings.	Building axis Surface area Levels		Correct interpretation of preliminary drawings					
2	A.2 Interpret the initial data.	Composition of walls Technical specifications for various materials Technical specifications for various products (e.g. stairs, elevator, commercial kitchen)		Accurate interpretation of initial data					
2	A.3 Establish a work plan.	List of drawings Drawing scales Deadline		Complete list of plans to be produced					
3	A Plan the work.			1 Planning of work 1.1 Realistic estimate of time needed to do the work	5	5	PT		
B. DRAW THE STRUCTURE									
2	B.1 Interpret the data provided by the engineering department.	Structural axes Beams, columns, girders, bracings, etc.		Accurate interpretation of the structural plan					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 468 – COMMERCIAL BUILDING PLANS (Module 24)							Duration: 120 hours		
Statement of the Competency: <i>To produce commercial building plans</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	B.2	Select the structure required for the plan.	Axes and levels Dimensions and orientation			Appropriate selection of the structure required for the architectural drawings			
3	B	Draw the structure.	Review of Module 15			Observance of axes Observance of dimensions and orientation of the structure			
C. DRAW, DIMENSION AND ANNOTATE FLOOR PLANS, ROOF PLANS, REFLECTED CEILING PLANS, SITE PLANS AND LAYOUT PLANS									
Duration: 20%									
2	C.1	Transpose the dimensions from the preliminary drawings.	Dimensions of rooms and traffic areas Location of walls and partitions Projection of roofs Projection of ceilings Arrangement of various interior features Arrangement of exterior features			Observance of dimensions related to the rooms and traffic areas Accurate location of walls and partitions			
2	C.2	Transpose the data specific to the plans.	Stairs Elevator Features in accordance with the project Etc.			Observance of data provided by the architect			
3	C	Draw, dimension and annotate floor plans, roof plans, reflected ceiling plans, site plans and layout plans.							

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

2005-11-14

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 468 – COMMERCIAL BUILDING PLANS (Module 24)							Duration: 120 hours					
Statement of the Competency: <i>To produce commercial building plans</i>												
COMPETENCY			LEARNING			EVALUATION						
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
D. DRAW, DIMENSION AND ANNOTATE THE ELEVATIONS										Duration: 15%		
2	D.1	Transpose the dimensions of the preliminary elevations.	Location of axes and levels Location of components of the façade (e.g. doors, windows, cantilever)			Accurate location of the axes Accurate location of the levels						
2	D.2	Transpose the specific data related to the components of the façade.	Door and window dimensions Slope and projection of roofs Accurate offsets, cantilevers, etc. Dimensions and location of finishing components			Accurate location of the components of the façades						
3	D	Draw, dimension and annotate the elevations.	Review of Module 17									
E. DRAW, DIMENSION AND ANNOTATE THE STAIRS										Duration: 10%		
2	E.1	Transpose the data provided by the architect and engineer.	Architect’s preliminary plan Manufacturers’ specifications Dimensions of the structure			Observance of data provided by the architect Appropriate selection of views and details						
2	E.2	Apply <i>National Building Code</i> standards.	Riser-to-tread ratio Number of flights Balustrade Handrail			Observance of standards related to stairs						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

4

825 468 – COMMERCIAL BUILDING PLANS (Module 24)							Duration: 120 hours		
Statement of the Competency: <i>To produce commercial building plans</i>									
COMPETENCY			LEARNING			EVALUATION			
Ph*	Learning Focuses		Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St
2	E.3	Do calculations related to stairs.	Total height Total length Headroom Number of steps and risers						
3	E	Draw, dimension and annotate the stairs.	Review of Module 17						
F. DRAW, DIMENSION AND ANNOTATE THE SECTIONS AND DETAILS									
Duration: 20%									
2	F.1	Select the location of sections and details.	In order to provide all of the necessary information In order to provide all of the views required for a good understanding of the project			Appropriate selection of longitudinal and transversal sections Appropriate selection of wall sections Appropriate selection of details			
2	F.2	Show concern for the quality of the drawing.	Drafting conventions Details Dimensions and notes			Observance of drafting conventions related to the representation of materials Complete, accurate details			
3	F	Draw, dimension and annotate the sections and details.	Review of Module 13			2 Longitudinal or transversal section 2.1 Observance of axes and levels 2.2 Conformity of structure with plans 2.3 Conformity of walls, partitions, floors and stairs with data in the plans	35	10 10 15	PT PT PT

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
 A,B,C,...: elements of the competency (specifications of the first-level operational objective)
 W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

5

825 468 – COMMERCIAL BUILDING PLANS (Module 24)					Duration: 120 hours			
Statement of the Competency: <i>To produce commercial building plans</i>								
COMPETENCY		LEARNING			EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St	
				3 Detail of window head and jamb 3.1 Observance of axes and placement of materials 3.2 Accurate positioning of the window 3.3 Conformity of the materials assembly related to the opening with the <i>National Building Code</i> 4 Detail of wall in plan view 4.1 Observance of axis lines 4.2 Appropriate arrangement of wall components 4.3 Conformity of the materials assembly with the <i>National Building Code</i>	35 25	 <		

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)

A,B,C...: elements of the competency (specifications of the first-level operational objective)

W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

2005-11-14

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

6

825 468 – COMMERCIAL BUILDING PLANS (Module 24)							Duration: 120 hours				
Statement of the Competency: <i>To produce commercial building plans</i>											
COMPETENCY		LEARNING			EVALUATION						
Ph*	Learning Focuses	Guidelines	Activities (References)		Evaluation Indicators and Criteria	W _I	W _C	St			
H. PRINT THE DRAWINGS										Duration: 2%	
2	H.1 Do a well-balanced layout.	In accordance with the establishment’s requirements In accordance with drafting conventions Sequence of pages			Well-balanced layout						
2	H.2 Select the scale.	In accordance with drafting conventions Legible drawings			Selection of suitable scale						
3	H Print the drawings.										
PRODUCE COMMERCIAL BUILDING PLANS										Duration: 5%	
3	Produce commercial building plans.				Appropriate use of computer system and software Observance of the <i>National Building Code</i> Appropriate use of reference materials Appropriate use of international and imperial systems of measurement Consistency throughout the drawings Observance of drafting conventions Accurate drawings						

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

7

825 468 – COMMERCIAL BUILDING PLANS (Module 24)					Duration: 120 hours		
Statement of the Competency: <i>To produce commercial building plans</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
				Complete, accurate dimensions and notes Observance of time limit Conformity of plans with initial data			
<i>PRODUCE COMMERCIAL BUILDING PLANS</i>							
<i>Duration: 5%</i> (including evaluation for the purpose of certification)							
2	Work on their own.	Habit of doing research Proactive attitude Educational Aim 1					
2	Verify their own work.	Importance of verifying their work before submitting it Verification method Educational Aim 5					
2	Show concern for the consequences of their work.	Impact of the quality of their drawings on: - the work of their colleagues - the construction of the building Educational Aim 2					
2	Understand the importance of meeting deadlines.	Costs Establishment’s reputation Stress Educational Aim 3					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C,...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

8

825 468 – COMMERCIAL BUILDING PLANS (Module 24)					Duration: 120 hours		
Statement of the Competency: <i>To produce commercial building plans</i>							
COMPETENCY		LEARNING		EVALUATION			
Ph*	Learning Focuses	Guidelines	Activities (References)	Evaluation Indicators and Criteria	W _I	W _C	St
4	PRODUCE COMMERCIAL BUILDING PLANS.			Referral to all of the preceding criteria for formative evaluation Referral to the preceding weighted criteria for evaluation for the purpose of certification of studies			
<i>PRODUCE COMMERCIAL BUILDING PLANS</i>							
5	PRODUCE COMMERCIAL BUILDING PLANS.	Increase in the number of elevations Two floors instead of only one More detailed background drawings					

* Ph: acquisition phase (1-exploration; 2-basic learning; 3-practice; 4-transfer; 5-enrichment)
A,B,C...: elements of the competency (specifications of the first-level operational objective)
W_I: relative weighting of indicators; W_C: relative weighting of criteria; St: evaluation strategies (PS: process; PT: product; T: theory)

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 468 – COMMERCIAL BUILDING PLANS (Module 24)

INFORMATION ON THE EVALUATION

1 INFORMATION AND INSTRUCTIONS

The purpose of this examination is to evaluate the candidates' ability to produce commercial building plans. The suggested duration for this practical examination is eight hours.

2 EXAMINATION PROCEDURE

Candidates will be advised of the procedure and total time allotted to them for the examination.

They will be given the following:

- an unfinished architectural plan for a commercial building of simple steel or concrete construction, such as a warehouse
- a structural plan for the building

Task 1 consists in having a candidate determine how much time he or she will spend on Tasks 2, 3 and 4 of the examination. Candidates must submit their results in writing.

Candidates have approximately 15 minutes for this task.

Task 2 consists in drawing, dimensioning and annotating a longitudinal or transversal section on the basis of:

- architectural plans
- data specific to the building

Candidates have approximately 3 hours 45 minutes for this task.

Task 3 consists in drawing, dimensioning and annotating a detail of a window head and jamb on the basis of:

- a description of the building envelope
- data required for the insertion of a window in a wall

Candidates have approximately 2 hours 30 minutes for this task.

Task 4 consists in drawing, dimensioning and annotating a construction detail in plan view on the basis of:

- architectural plans
- a description of the walls

Candidates have approximately 1 hour 30 minutes for this task.

3 MATERIALS

The following are required for the examination:

- a computer equipped with drafting software
- the *National Building Code*
- manufacturers' specifications for construction materials and equipment
- technical documents

EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 24 – Commercial Building Plans Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 468 RESULT: PASS ☐ FAIL ☐
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OBSERVATION			RESULT
	YES	NO	
1 PLANNING OF WORK			
1.1 Realistic estimate of time needed to do the work	☐	☐	0 or 5
2 LONGITUDINAL OR TRANSVERSAL SECTION			
2.1 Observance of axes and levels:			
- accurate location of building axes	☐	☐	
- accurate location of building levels	☐	☐	
- conformity of symbols	☐	☐	0 or 10
2.2 Conformity of structure with plans:			
- location and dimensions of columns in conformity with engineering plan	☐	☐	
- location and dimensions of beams and girders in conformity with engineering plan	☐	☐	
- location and dimensions of other components in conformity with engineering plan	☐	☐	0 or 10
Tolerance: two errors			
2.3 Conformity of walls, partitions, floors and stairs with data in the plans:			
- accurate location and width of walls	☐	☐	
- observance of data related to the different floors	☐	☐	
- conformity of stairs	☐	☐	0 or 15
Tolerance: two errors			

OBSERVATION			RESULT
	YES	NO	
3	DETAIL OF WINDOW HEAD AND JAMB		
3.1	Observance of axes and placement of materials:		
	- accurate placement of axes	☐	☐
	- conformity of sequence of materials	☐	☐
	- observance of drafting conventions	☐	☐
			0 or 10
3.2	Accurate positioning of the window:		
	- conformity of the location of the window in relation to the materials and structural components	☐	☐
	- observance of drafting conventions	☐	☐
			0 or 10
3.3	Conformity of the materials assembly related to the opening with the <i>National Building Code</i> :		
	- continuity of air/vapour barrier	☐	☐
	- continuity of insulation materials	☐	☐
	- sealing of building	☐	☐
	- appropriate finishing	☐	☐
	- other materials in conformity with rules of assembly	☐	☐
	Tolerance: one error		0 or 15
4	DETAIL OF WALL IN PLAN VIEW		
4.1	Observance of axis lines	☐	☐
			0 or 5
4.2	Appropriate arrangement of wall components:		
	- conformity of the sequence of materials	☐	☐
	- observance of drafting conventions	☐	☐
			0 or 10
4.3	Conformity of the materials assembly with the <i>National Building Code</i>		☐
	Tolerance: one error		☐
			0 or 10
Total:			/ 100
Minimum performance standard: 80 marks			

Comments: _____

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

1

825 258 – ENTERING THE WORK FORCE (Module 25)					Duration: 120 hours	
Statement of the Competency: <i>To enter the work force</i>						
COMPETENCY		LEARNING			EVALUATION	
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
PHASE 1: LOOKING FOR A PRACTICUM POSITION <i>Duration: 10%</i>						
1.1	Situate the competency with respect to the training process.	Reasons for the competency Course outline Links with other competencies				
1.2	Become familiar with information and terms and conditions of the practicum.	Conditions of the practicum: - duration - support and supervision - practicum report				
1.3	Set personal criteria for selecting potential host companies.	Selection of a specialty: structure, building mechanics, etc.: - size of company - location				
1.4	Identify companies that are likely to host trainees.	Sources of information (e.g. newspapers, personal contacts) List of potential companies				
1.5	Apply for a practicum position.	Review of Module 21: Job Search Techniques Attitudes required to find a practicum position (e.g. availability, enthusiasm) Description of preferences, expectations and areas of interest Concerns regarding the practicum Ways of preparing to obtain an interview Preparation of their résumé and portfolio Contacting of companies		1 Look for a practicum position. 1.1 List, in order of priority, three potential host companies that meet their selection criteria. 1.2 Meet with a company representative to apply for a position as a trainee.	35	 15 20

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

2

825 258 – ENTERING THE WORK FORCE (Module 25)					Duration: 120 hours	
Statement of the Competency: <i>To enter the work force</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
PHASE 2: OBSERVING AND PRACTISING THE TRADE IN THE WORKPLACE <i>Duration: 85%</i>						
2.1	Observe the work environment.	Working hours, tasks, philosophy, expectations with regard to trainees Interpersonal relationships Equipment Technological advances				
2.2	Participate in and carry out various tasks.	Participation in various technical tasks (partial or complete): data, drafting, research, standardization, printing of plans		2 Observe the company’s policies. 2.1 Observe the company’s policies concerning the activities they are authorized to carry out as trainees, work schedules and rules of professional ethics.	40	40
2.3	Produce a brief report describing their observations of the work environment and of tasks carried out in the establishment.	First impressions Points observed in relation to the work environment Points observed in relation to carrying out tasks				
PHASE 3: COMPARING INITIAL PERCEPTIONS WITH THEIR EXPERIENCES IN THE WORKPLACE <i>Duration: 5%</i>						
3.1	Identify aspects of the trade that are similar to and that differ from their training.	Related to work context Related to tasks observed and carried out				

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

ANALYSIS AND PLANNING TABLES
RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

3

825 258 – ENTERING THE WORK FORCE (Module 25)					Duration: 120 hours	
Statement of the Competency: <i>To enter the work force</i>						
COMPETENCY		LEARNING		EVALUATION		
Learning Focuses		Guidelines	Activities (References)	Participation Indicators and Criteria	W _I	W _C
3.2	Discuss the accuracy of their perception of the trade before and after the practicum.	Work environment Professional practices Discussion of specific aspects observed during their practicum Discussion of their strengths and weaknesses		3 Express their views on the practicum. 3.1 Discuss with the teacher their assessment of their practicum. 3.2 Discuss with their colleagues their experience in the workplace.	25	 15 10
3.3	Discuss how their experiences will affect their careers.	Links between the practicum experience and their preferences, areas of interest, aptitudes and expectations				

* W_I: relative weighting of indicators – W_C: relative weighting of criteria

RESIDENTIAL AND COMMERCIAL DRAFTING (5750)

825 258 – ENTERING THE WORK FORCE (Module 25)

INFORMATION ON THE EVALUATION

The candidate must enter the work force. Evaluation of the candidates' participation is based on observations made at different times during the practicum by the teacher and by the practicum supervisor at the company. The evaluation is also based on the candidates' work (observation forms, questionnaires, telephone calls, and meetings with the teacher).

PHASE 1: LOOKING FOR A PRACTICUM POSITION

1 LOOK FOR A PRACTICUM POSITION

Looking for a practicum position consists in listing the potential host companies in accordance with criteria predetermined by the candidate and in trying to do what they can to be accepted when applying for a position. The candidates must meet with at least one representative of a company likely to take on a trainee.

PHASE 2: OBSERVING AND PRACTISING THE TRADE IN THE WORKPLACE

2 OBSERVE THE COMPANY'S POLICIES

The teacher must take the following into consideration:

- the practicum supervisor's evaluation of the candidate's participation
- the candidate's behaviour in performing assigned tasks
- observance of the company's policies
- observance of rules of professional ethics

PHASE 3: COMPARING INITIAL PERCEPTIONS WITH THEIR EXPERIENCES IN THE WORKPLACE

3 EXPRESS THEIR VIEWS ON THE PRACTICUM

When evaluating the practicum, the teacher should encourage the candidates to express their views on the practicum experience. The teacher should take into account the practicum supervisor's evaluation during these discussions. Assessment of the practicum should allow the candidates to confirm their career choice.

Candidates must also participate in a group discussion on their experiences in their workplace. They must share some of their observations, impressions or conclusions following the practicum.

PARTICIPATION EVALUATION FORM

RESIDENTIAL AND COMMERCIAL DRAFTING 25 – Entering the Work Force Candidate's name: _____ School: _____ Permanent code: _____ Date of examination: _____ Examiner's signature: _____	Program code: 5750 Module code: 825 258 RESULT: <table style="width: 100%;"> <tr> <td style="text-align: center;">PASS</td> <td style="text-align: center;">FAIL</td> </tr> <tr> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table>	PASS	FAIL	☐	☐
PASS	FAIL				
☐	☐				

PARTICIPATION COMPONENTS	RESULT YES NO
PHASE 1: LOOKING FOR A PRACTICUM POSITION 1 LOOK FOR A PRACTICUM POSITION 1.1 List, in order of priority, three potential host companies that meet their selection criteria. 1.2 Meet with a company representative to apply for a position as a trainee.	 ☐ ☐ ☐ ☐
PHASE 2: OBSERVING AND PRACTISING THE TRADE IN THE WORKPLACE 2 OBSERVE THE COMPANY'S POLICIES 2.1 Observe the company's policies concerning the activities they are authorized to carry out as trainees, work schedules and rules of professional ethics.	 ☐ ☐

PARTICIPATION COMPONENTS		RESULT YES NO	
PHASE 3: COMPARING INITIAL PERCEPTIONS WITH THEIR EXPERIENCES IN THE WORKPLACE			
3	EXPRESS THEIR VIEWS ON THE PRACTICUM		
3.1	Discuss with the teacher their assessment of their practicum: - information on the company - specific aspects observed during the practicum - their strengths and weaknesses - how their experience will affect their career choice	☐	☐
3.2	Discuss with their colleagues their experience in the workplace.	☐	☐
Pass/fail conditions: 4 YESes out of a possible 5, and a YES for components 2.1 and 3.1			

Comments: _____

