Technical Training Program

140.B0

Biomedical Laboratory Technology

2004 Version

Training Sector

19

Health Services

Reach for your Dreams

Québec

Technical Training Program

140.B0

Biomedical Laboratory Technology

2004 Version

Training Sector

19 Health Services

Formation professionnelle et technique
et formation continue

Direction générale des programmes
et du développement

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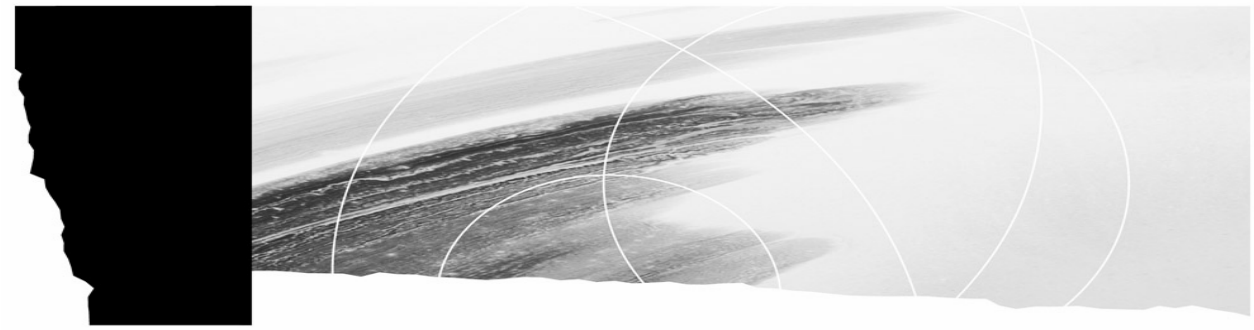


140.B0	**Biomedical Laboratory Technology**

Year of approval: 2004

Certification:	Diploma of College Studies
Number of credits:	91 2/3 credits
Total duration:	2 850 hours of instruction

General education components:	615[1]	hours of instruction
Program-specific component:	2 235[2]	hours of instruction

Maximum duration allocated to practical training: 735 hours of instruction

Conditions for Admission:

To be admitted to the program, students must meet the general conditions for admission set out in section 2 of the *College Education Regulations*, as well as the following requirements, if applicable:

- Mathematics 526
- Physics 534
- Chemistry 534

1 The duration of the complementary general education component has been reduced by 45 hours in order to cover pharmacology concepts in the program-specific component.

2 The addition of elements and standards associated with learning activities in pharmacology makes it necessary to increase the duration of the program-specific component by 45 hours, or 2 credits.

Introduction to the Program

The *Biomedical Laboratory Technology* program is in keeping with the aims and orientations of technical education that guide the Ministère de l'Éducation. Designed in accordance with the framework for developing technical programs, this program is based on competencies, formulated in terms of objectives and standards.

The *Biomedical Laboratory Technology* program includes a general education component common to all programs (16 2/3 credits), a general education component adapted to this program (6 credits), a complementary general education component (2 credits) and a program-specific component of 67 credits.

The program-specific component was also designed according to the framework for developing technical programs. This approach requires the participation of people working in the field and in education, and takes into account training needs, the job analysis and the general goals of technical education. The objectives and standards serve as the basis for the definition and the evaluation of learning activities, for which the colleges are responsible.

By successfully completing this program of study, students acquire not only the entry-level competencies required by the workplace to practise a trade or occupation, but also a range of knowledge, skills and attitudes that will ensure the students' versatility.

General Education Component Common to All Programs (16 2/3 credits)

0004 To analyze and produce various forms of discourse.

0005 To apply a critical approach to literary genres.

0006 To apply a critical approach to a literary theme.

00B2 To apply a logical analytical process to how knowledge is organized and used.

000G To apply a critical thought process to world-views.

0017 Appliquer les notions de base de la communication en français courant.

or

000A Communiquer en français avec une certaine aisance.

or

000B Communiquer avec aisance en français.

or

000C Traiter d'un sujet culturel et littéraire.

0064 To establish the role that being physically active plays amongst the lifestyle behaviours which promote health.

0065 To improve one's effectiveness when practising a physical activity.

0066 To demonstrate one's responsibility for being physically active in a manner which promotes health.

General Education Component Adapted to This Program (6 credits)

000L To communicate in the forms of discourse appropriate to one or more fields of study.

000U To apply a critical thought process to ethical issues relevant to the field of study.

0018 Appliquer des notions fondamentales de la communication en français, liées à un champ d'études.

or

000Q Communiquer en français dans un champ d'études particulier.

or

000R Communiquer avec aisance en français dans un champ d'études particulier.

or

000S Disserter en français sur un sujet lié au champ d'études.

Complementary General Education Component (2 credits)

000V To estimate the contribution of the social sciences to an understanding of contemporary issues.

000W To analyze one of the major problems of our time using one or more social scientific approaches.

000X To explain the general nature of science and technology and some of the major contemporary scientific or technological issues.

000Y To resolve a simple problem by applying the basic scientific method.

000Z To communicate with limited skill in a modern language.

0010 To communicate on familiar topics in a modern language.

0067 To communicate with relative ease in a modern language.

0011 To recognize the role of mathematics or informatics in contemporary society.

0012 To use various mathematical or computer concepts, procedures and tools for common tasks.

0013 To consider various forms of art produced by aesthetic practices.

0014 To produce a work of art.

Program-Specific Component **(67 credits)**

01ST To analyze the occupation.
01E0 To maintain standards of quality.
01SU To prepare solutions.
01SV To identify organic molecules.
01SW To apply clinical biochemistry techniques.
01SX To detect microorganisms.
01E7 To characterize anatomical and physiological information.
01E8 To apply immunological techniques.
01EA To identify microorganisms.
002R To interact with a client.
002S To procure specimens.
01EW To prepare biological samples.
01EX To use analytical instruments.
01EY To interpret the results of a biomedical analysis in terms of human pathophysiology.
01EZ To prepare tissues for anatomical examination.
01F0 To perform analyses in hemostasis.
01SY To apply molecular biology techniques.
01F2 To perform analyses in hematology.
01F3 To perform analyses in clinical biochemistry.
01F4 To perform analyses in medical microbiology.
01F5 To perform analyses in transfusion science.
002Q To prepare blood products.
01F7 To solve problems related to transfusions.
002T To perform analyses outside a laboratory.

Glossary

Program

A program is an integrated set of learning activities leading to the achievement of educational objectives based on set standards (*College Education Regulations,* section 1).

Competency

In the program-specific component of a technical program: a competency is the ability to act successfully and evolve in order to adequately perform work-related tasks and activities based on an organized body of knowledge, skills in a variety of fields, perceptions, attitudes, etc. (*Élaboration des programmes d'études techniques*, *Cadre-général – Cadre technique 2002*, p. 15).

Objective

An objective encompasses the competency, skills or knowledge to be acquired or mastered (*College Education Regulations,* section 1). It describes the competency to be acquired and includes the statement of the competency as well as the elements needed to understand it.

Statement of the Competency

In the program-specific component of a technical program, a statement of the competency is derived from the job analysis, the general goals of technical education and, in certain cases, other determinants. In the general education components, the statement of the competency is the result of an analysis of general education needs.

Elements of the Competency

In the program-specific component of a technical program, the elements of the competency include only what is necessary in order to understand the competency. They specify the major steps involved in carrying out a task or the main aspects of the competency.

In the general education components, the elements of the objective, formulated in terms of a competency, specify the main aspects of the competency. They include only what is necessary in order to understand and attain the competency.

Standard

A standard is the level of performance at which an objective is considered to be achieved (*College Education Regulations,* section 1).

Achievement Context

In the program-specific component of a technical program, the achievement context corresponds to the situation in which the competency is exercised at entry level on the job market. The achievement context does not specify the context for learning or evaluation.

Performance Criteria

In the program-specific component of a technical program, the performance criteria define requirements by which to judge the attainment of each element of the competency and, consequently, of the competency itself. The performance criteria are based on the requirements at entry level on the job market. The performance criteria are not the evaluation instrument but, rather, they serve as a reference for the development of the evaluation instrument. Each element of the competency requires at least one performance criterion.

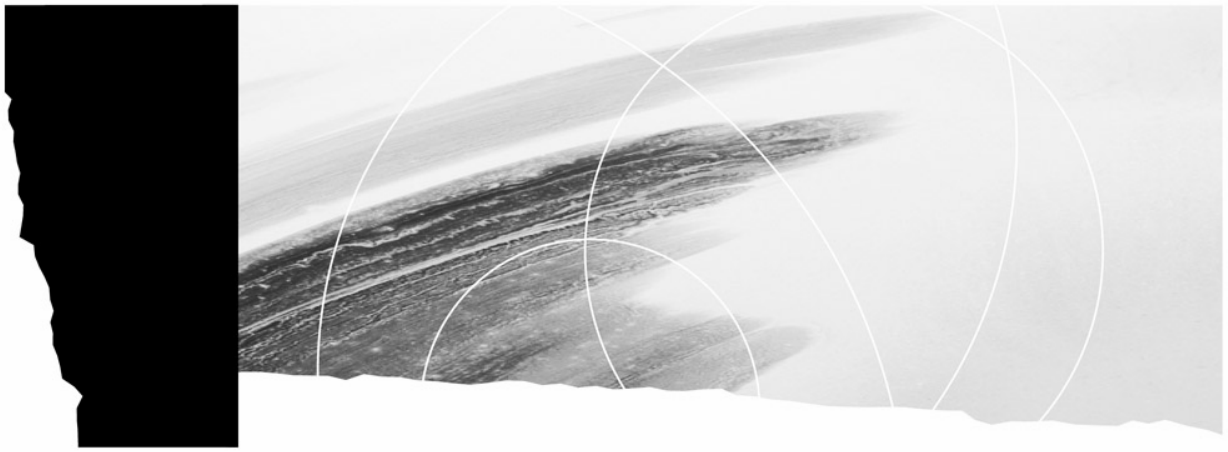
In the general education components, the performance criteria define the requirements for recognition of the attainment of the standard.

All the criteria must be respected for the objective to be recognized as having been attained.

Learning Activities

In the program-specific component of a technical program, the learning activities are classes (or labs, workshops, seminars, practicums or other educational activities) designed to ensure the attainment of the targeted objectives and standards. Colleges are entirely responsible for defining the learning activities and organizing the way in which programs are offered.

In the general education components, the elements of the learning activities that may be determined in whole or in part by the Minister are the field of study, the discipline(s), the weightings, the total hours of instruction, the number of credits and any details deemed essential.



Part I

Goals of the General Education Components

Educational Aims of the General Education Components

Objectives and Standards of the General Education Components

Goals of the General Education Components

In Québec, college is the next stage after the compulsory years of schooling in elementary and secondary school, during which students acquire basic knowledge and skills. It represents a major crossroads in that it places greater emphasis on the cultural content of education and leads directly to the job market or to university. The college system meets current needs with respect to technical and pre-university education. It allows students to further their education without narrowing their options, since they may switch from one type of program to the other. Finally, it provides students with a well-rounded, balanced education.

General education is an integral part of every program and comprises three components: a component common to all programs, a component adapted to the particular program and a complementary component. The aim of general education is threefold: to provide students with a common cultural core, to help them learn and develop generic skills, and to foster desirable qualities and attitudes. Its purpose is to educate students as individuals, to prepare them for their role as responsible members of society and to enable them to share in the common cultural heritage.

Common Cultural Core

The common cultural core is intended to help students:

- master the language of instruction as a tool for communication and reflection
- master the basic rules of rational thought, discourse and argumentation
- communicate in another language, primarily French or English
- be open to the world and to cultural diversity
- appreciate the riches of our cultural heritage through awareness of the accomplishments of human civilization
- relate to major currents in the history of human thought
- think independently and critically
- develop personal and social ethics
- acquire the knowledge essential for their physical and intellectual well-being
- become aware of the need to develop habits conducive to good health

Generic Skills

General education allows students to acquire and develop the following generic skills:

- conceptualization, analysis and synthesis
- coherent reasoning
- critical judgment
- articulate expression
- the ability to apply what they have learned to the analysis of situations
- the ability to apply what they have learned to decision making
- work methods
- the ability to reflect on what they have learned

Desirable Qualities and Attitudes

The common cultural core and generic skills help students acquire and develop the following qualities and attitudes:

- autonomy
- a critical sense
- awareness of their responsibilities toward themselves and others
- open-mindedness

- creativity
- openness to the world

These goals apply to the three general education components:

- General education component common to all programs, which is allotted 16 2/3 credits distributed as follows:

  – language of instruction and literature: 7 1/3 credits
  – humanities or *philosophie*: 4 1/3 credits
  – physical education: 3 credits
  – second language: 2 credits

- General education component adapted to programs, which introduces tasks or learning situations that are relevant to the program-specific component of a program. The breakdown of credits, for a total of 6, is as follows:

  – language of instruction and literature: 2 credits
  – humanities or *philosophie*: 2 credits
  – second language: 2 credits

- Complementary general education component, which provides students with learning activities chosen to balance their training and complement the program-specific component. Students may choose courses for a total of 4 credits in the following areas:

  – social sciences
  – science and technology
  – modern languages
  – mathematics and computer literacy
  – art and aesthetics

The knowledge and skills acquired in the general education components should be emphasized and, whenever possible, applied in the program-specific component, and vice-versa. Thus, general education and the program-specific component of a program enhance each other as they contribute to the students' overall education.

Each college-level institution must provide general education through learning activities that are consistent with its educational project, in keeping with the aims, subject areas and ministerial guidelines provided.

The objectives and standards in the general education components were developed according to the provisions of the *College Education Regulations* (R.S.Q., c. C-29, s. 18).

Educational Aims of the General Education Components

The educational aims describe how each field of study in the common, adapted and complementary components of general education contributes to achieving the goals of general education. For the common and adapted components, the educational aims include a general statement of the role of each field of study; the principles underlying this role; the expected outcomes that define, in terms of cultural knowledge, generic skills, and qualities and attitudes, the contribution of each field to the achievement of the goals of general education; and an explanation of the sequence of objectives and standards.

General Education Common to All Programs and General Education Adapted to Programs

English, Language of Instruction and Literature

General Education Common to All Programs

The three sets of objectives and standards in English, Language of Instruction and Literature, pursue two general goals: mastery of the language of instruction and exploration of the riches of the literary heritage. Achievement of these goals is intended to bring the students to a college level of proficiency in the areas of reading, writing, listening and speaking. Building on the skills developed by students on completion of secondary school, the English program places a marked emphasis on written production and reading comprehension while at the same time consolidating listening and speaking skills.

The mastery of language skills will be achieved through regular and ongoing observance of the rules of correct writing and speaking and the production of texts, supported by reading and the study of literature. Students will also be encouraged to develop an appreciation of literature by becoming acquainted with a number of significant literary works representative of various genres and periods and expressing a variety of literary themes. Both the aesthetic and cultural value of these texts and their formal aspects will be the objects of study.

All students entering college will begin their English studies with an introductory set of objectives and standards. This set has two possible formats. While both provide a range of reading, writing and literary activities, one includes additional reinforcement of reading and writing skills.

General Education Adapted to Programs

The set of objectives and standards for English, Language of Instruction and Literature, is placed in the context of general education and is a complement to the general education common to all programs. Students will develop the skills required in order to communicate in the forms of discourse appropriate to their field of study.

Expected Outcomes

Students, who have achieved the general education objectives in English, Language of Instruction and Literature, will be able to:

- demonstrate a college level of proficiency in the areas of reading, writing, listening and speaking
- develop their own ideas into arguments and theses, organize them and edit their work
- understand basic vocabulary and terminology used when discussing literature
- analyze literary works
  –

Humanities

Humanities, as part of the core curriculum, is intended to promote personal and social development and to give students a foundation that will help them understand their roles in contemporary society as members of the labour force, citizens and individuals. The three sets of objectives and standards in Humanities propose common frameworks for understanding the experiences, ideas and values of human beings and their diversity. They are aimed at developing critical thinking, reinforcing the ancillary skills involved in careful reading, organized writing, and well-developed oral presentations, and, where appropriate, improving media and computer literacy. Once students have mastered the three-stage process of analysis, synthesis and evaluation, they will be able to reflect in an informed manner and to communicate what they have learned in an organized and coherent fashion.

Principles

1) Humanities constitutes a thematic, multidisciplinary, at times transdisciplinary, exploration of the human experience, including its accomplishments, failures, abilities, creations, ideas and values.
2) Humanities helps students to recognize, define and classify information and provides them with common frameworks for diverse methods of analyzing, synthesizing and evaluating conceptions of society, knowledge and values.
3) Humanities aims to prepare students for common civic responsibilities and the exercise of rights.
4) Humanities pursues the general goal of developing critical thought, valuing it and recognizing its limitations.

Expected Outcomes

Students who have achieved the general education objectives in Humanities will be able to:

- describe, explain and organize main elements, ideas, values and implications of a world-view in a coherent fashion
- compare world-views
- recognize the basic elements in a specific example of the organization, transmission and use of knowledge
- define the dimensions, limits, and uses of knowledge in appropriate historical contexts
- identify, organize and synthesize the salient elements of a particular example of knowledge
- situate important ethical and social issues in their appropriate historical and intellectual contexts
- explain, analyze and debate ethical issues in a personal and professional context

Sequence of Objectives and Standards

The first two sets of objectives and standards in Humanities, which are part of the general education component common to all programs, develop similar skills in a recursive fashion.

In the first set the emphasis is on how knowledge is defined, acquired, classified, transmitted and applied. Students examine both messages and media to identify the strengths and limitations of each. Students learn to situate knowledge in a social, historical and personal context, a skill they will need in order to become lifelong learners.

The second set focuses on how individuals, groups, societies or nations organize ideas, perceptions and values into explanatory patterns. Students explore major ideas and value systems by which diverse individuals, groups, societies or nations seek to explain the world and their place in it.

The third set, which is part of the general education component adapted to programs, is aimed at deepening and reinforcing the critical thinking skills developed in the first two sets. It is, therefore, sequenced so that students can build on the critical skills, knowledge and insights developed in the first two sets. By situating these issues in their appropriate world-view and knowledge contexts, students

develop a critical and autonomous approach to ethical values in general and to the values involved in their own fields of interest in particular. This final set also provides students with an opportunity to consolidate personal and social values.

Français, langue seconde

L'enseignement du français, langue seconde, contribue à la formation fondamentale de la personne, en même temps qu'il a pour objet de lui permettre de communiquer efficacement avec ses concitoyens et concitoyennes.

Principes

1) La maîtrise du français, langue seconde, est essentielle pour quiconque veut participer pleinement à la vie de la société québécoise, dont le français est la langue officielle. En conséquence, la formation générale en français, langue seconde, a pour finalité de rendre les étudiants et les étudiantes aptes à utiliser de façon efficace les moyens dont dispose la langue pour communiquer en société. À cette fin, ils devront acquérir des connaissances en vue de les déployer dans les formes de discours qu'il leur faudra pratiquer.
2) À leur arrivée au collégial, les étudiants et les étudiantes ont déjà acquis des compétences dans les quatre habiletés langagières, à savoir : parler, lire, écouter et écrire, mais sont, de façon générale, plus compétents en matière d'expression orale. En conséquence, la formation porte sur le développement des quatre habiletés langagières tout en mettant l'accent sur la lecture et l'écriture.
3) En tant que partie intégrante de la formation générale, le français, langue seconde, contribue au développement de la pensée critique et de l'expression structurée.

Résultats attendus

Tout étudiant ou toute étudiante qui a atteint les objectifs de formation générale en français, langue seconde, pourra, selon son niveau de compétence, montrer :

- que, sur le plan des connaissances, il ou elle :
  - sait faire une présentation orale structurée;
  - connaît les différentes formes du discours;
  - connaît les différentes techniques de lecture et d'écriture;

- que, sur le plan des habiletés, il ou elle :
  - est capable de questionner, d'analyser, de juger, et d'argumenter en français;
  - est apte à entretenir des rapports sociaux et à partager la vie culturelle du Québec;
  - est apte à établir, à poursuivre et à pratiquer des rapports professionnels en français;

- que, sur le plan des qualités et des attitudes à développer, il ou elle :
  - fait preuve d'ouverture par rapport aux différents aspects de la culture québécoise;
  - a conscience des différences et des similitudes entre sa culture d'origine et la culture québécoise francophone;
  - a la préparation voulue pour s'insérer dans la vie sociale et économique.

Séquence des objectifs et des standards

Pour répondre aux divers besoins d'apprentissage des étudiants et des étudiantes du collégial, les ensembles en français, langue seconde, sont répartis selon quatre niveaux. Chacun de ces niveaux permet d'amener les étudiants et les étudiantes à interpréter et à produire des textes de plus ou moins grande complexité.

La formation générale en français, langue seconde, comporte deux ensembles prévus en séquence. Le premier, qui fait partie de la formation générale commune à tous les programmes, a pour objet de

consolider les connaissances linguistiques déjà acquises et de les développer pour amener les étudiants et les étudiantes à communiquer de façon plus précise sur le plan tant du vocabulaire et de la syntaxe que de l'organisation textuelle.

Le second ensemble, qui fait partie de la formation générale propre aux programmes, s'appuie sur les acquis développés dans le premier ensemble en les enrichissant d'éléments de compétence liés aux champs d'études de l'étudiant ou de l'étudiante. On cherche à développer la précision de l'expression dans des situations de communication particulières qui relèvent du champ d'études de l'étudiant ou de l'étudiante.

Physical Education

Physical Education is aimed at promoting the development of the whole person and encouraging students to acquire responsible behaviours with respect to their health and quality of life.

Principles

1) Physical Education introduces students to different ways of being physically active with a view to making them aware that they are responsible for their health. Students learn concepts and acquire knowledge drawn from research, and methodically apply them to physical activities that will lead them to adopt healthy lifestyle practices.
2) Physical Education enables students to improve their efficiency in an activity and, in doing so, serves to increase their motivation and perseverance to remain physically active, and makes them aware of the contributing factors. To this end, students use a learning process designed to enhance their aptitudes (i.e. their skills and attitudes) for a given physical activity.
3) Physical Education helps students take responsibility for their own health through the maintenance and improvement of their physical fitness and through the sensible practice of physical activity. Students learn to combine being physically active in an effective manner with other factors that promote health.
4) Physical Education makes students aware of the importance of sharing the knowledge and behaviours they have acquired. The pleasure and sense of well-being students get out of Physical Education classes motivate them to encourage others to be physically active and to adopt healthy practices.

Expected Outcomes

Students who have achieved the general education objectives in Physical Education will be able to demonstrate:

- their knowledge of:
  - the relationship between physical activity, lifestyle and health based on the findings of scientific research
  - the scientific principles for improving or maintaining physical fitness
  - ways to assess their abilities and needs with respect to activities that can improve their health
  - the rules, techniques and conditions involved in different types of physical activity
  - a method for setting goals
  - the factors that help make physical activity part of their lifestyle

- the skills that will enable them to:
  - choose physical activities on the basis of their motivation, abilities and needs
  - establish relationships between lifestyle and health
  - apply the rules, techniques and conditions involved in different types of physical activity
  - set goals that are realistic, measurable, challenging, and situated within a specific time frame

  - improve their mastery of the basic techniques, tactics and strategies associated with sports, outdoor and expression-oriented activities
  - use their creative and communication skills, particularly in group activities
  - evaluate their skills, attitudes and progress with respect to different forms of physical activity
  - maintain or increase their level of physical activity and fitness on their own
  - manage a personal physical activity program and assume responsibility in the organization of physical activities

- the attitudes and qualities that will enable them to:
  - understand the importance of taking responsibility for their health
  - be aware of the need to evaluate and respect their abilities and the conditions for carrying out an activity, before undertaking the activity
  - recognize the importance of self-confidence, self-control, respect for others and cooperation, through knowledge they have acquired and through participation in physical activity
  - respect the environment in which the activities are held
  - appreciate the aesthetic and play value of physical activity
  - promote a balanced and active lifestyle as a social value

Sequence of Objectives and Standards

The three sets of objectives and standards in Physical Education are designed in a learning sequence. The first two are prerequisites for the third.

The first set focuses on the relationship between health and physical activity as related to a healthy lifestyle. Students are required to try one or more activities and to relate them to their abilities, needs, motivation, lifestyle and knowledge of health prevention. This enables them to make an appropriate and justified choice of activities.

The second set looks at the improvement of effectiveness through the use of a goal-oriented approach in a sports, outdoor or expression-oriented activity. After making an initial assessment of their abilities and attitudes, students are called upon to evaluate them with respect to a physical activity, to set goals and to interpret their progress.

The third set is aimed at helping students integrate physical activity into their lifestyle, more particularly through more effective management of factors that facilitate such integration. During the hours of instruction, students apply the knowledge they have acquired in the first two sets of objectives. This is done through the safe and effective practice of physical activity and through the development, realization and evaluation of a personal physical activity program, which students follow and validate under their teacher's supervision. The hours allotted for individual work enable students to complete their personal programs.

Complementary General Education

Social Sciences

The two sets of objectives and standards aim to familiarize students with the social sciences and their particular approach to the human condition.

The first set supports learning activities that allow students to look at one or more of the social sciences in relation to major contemporary issues: subjects studied in the social sciences; contribution of the social sciences to an understanding of contemporary issues; issues facing the social sciences in the future.

The second set supports learning activities in the social sciences that allow students to rigorously analyze one of the major problems of our time, using one or more social scientific approaches.

Science and Technology

In Science and Technology, the educational aim is to present science and technology as a specific approach to reality in order to familiarize students with this field of knowledge. This general intention can take several forms, such as helping students gain experience with the scientific method or study the evolution, challenges and consequences of scientific and technological discoveries.

The first set of objectives and standards emphasizes the general nature and scope of science and technology. The second set emphasizes using the scientific method.

Modern Languages

The three sets of objectives and standards in Modern Languages introduce students to the basic language structures and vocabulary of a third language while making them aware of the culture of the people who speak the language.

Because some modern languages use different structures and writing systems, the three sets of objectives and standards have been designed accordingly. The degree of competency acquisition will therefore vary according to how distant the language is from our own language or system of thought. Furthermore, awareness of the culture of the people using a modern language does not figure as an element of competency, since learning a modern language necessarily implies developing such awareness.

Mathematics and Literacy Computer Science

In Mathematics and Literacy Computer Science, the two sets of objectives and standards are based on the aim of developing mathematical and computer culture.

The educational aim of the first set is to lead students to consider the place, role and evolution of this knowledge and these tools in our society and to describe their different uses. It consists of general education about the language of mathematics or computers, and does not include specialized training.

The second set targets the understanding and use of the language of mathematics or computers for everyday purposes. This intention refers mainly to the concepts, tools and general uses of mathematical or computer language in daily life.

Since the objectives and standards for the field of mathematics literacy and computer science are quite general, they can be used to define various learning activities that foster the development of competencies in mathematics or computer science, or in a combination of these two areas.

Art and Aesthetics

The educational aim of Art and Aesthetics is to help students to acquire general cultural knowledge by exploring various forms of art in one or more artistic fields. This basic education is intended to develop an artistic sensibility through exposure to works of art or experimentation in an artistic medium. Furthermore, it aims to teach the basic elements of the language of art and to enable students to make connections between those elements.

Through the first set of objectives and standards, students are introduced to works of art from contemporary culture and from other periods. This allows them to develop an appreciation for the dynamics of the imagination in art and to learn methods of analyzing artistic production.

Though the second set, students engage in creative or interpretive activities in a given artistic medium. As well, students are introduced to artistic works in that medium so that they may learn to recognize its primary forms of expression.

Language of Instruction and Literature	Code: 0004

Objective *Standard*

Statement of the Competency

To analyze and produce various forms of discourse.

Elements of the Competency	**Performance Criteria**
1. To identify the characteristics and functions of the components of discourse.	• Accurate explanation of the denotation of words • Adequate recognition of the appropriate connotation of words • Accurate definition of the characteristics and function of each component
2. To determine the organization of facts and arguments of a given discourse.	• Clear and accurate recognition of the main idea and structure • Clear presentation of the strategies employed to develop an argument or thesis
3. To prepare ideas and strategies for a projected discourse.	• Appropriate identification of topics and ideas • Adequate gathering of pertinent information • Clear formulation of a thesis • Coherent ordering of supporting material
4. To formulate a discourse.	• Appropriate choice of tone and diction • Correct development of sentences • Clear and coherent development of paragraphs • Formulation of a 750-word discourse
5. To edit the discourse.	• Thorough revision of form and content

Learning Activities

Discipline:	English
Weighting:	2-2-4 or 1-3-4
Credits:	2 2/3

Language of Instruction and Literature — Code: 0005

Objective	***Standard***

Statement of the Competency

To apply a critical approach to literary genres.

Elements of the Competency	**Performance Criteria**
1. To distinguish genres of literary discourse.	• Clear recognition of the formal characteristics of a literary genre
2. To recognize the use of literary conventions within a specific genre.	• Accurate recognition of the figurative communication of meaning • Adequate explanation of the effects of significant literary and rhetorical devices
3. To situate a discourse within its historical and literary period.	• Appropriate recognition of the relationship of a text to its period
4. To explicate a discourse representative of a literary genre.	• Selective use of appropriate terminology • Effective presentation of a 1000-word integrated response to a text

Learning Activities

Discipline:	English
Weighting:	2-2-3
Credits:	2 1/3

Language of Instruction and Literature	Code: 0006

Objective	***Standard***

Statement of the Competency

To apply a critical approach to a literary theme.

Elements of the Competency	**Performance Criteria**
1. To recognize the treatment of a theme within a literary text.	• Clear recognition of elements within the text which define and reinforce a theme and its development • Adequate demonstration of the effects of significant literary and rhetorical devices
2. To situate a literary text within its cultural context.	• Appropriate recognition of a text as an expression of cultural context • Adequate demonstration of the effects of significant literary and rhetorical devices
3. To detect the value system inherent in a literary text.	• Appropriate identification of expression (explicit/implicit) of a value system in a text
4. To explicate a text from a thematic perspective.	• Selective use of appropriate terminology • Effective presentation of a 1000-word integrated response to a text

Learning Activities

Discipline:	English
Weighting:	2-2-3
Credits:	2 1/3

Humanities	Code: 00B2

Objective *Standard*

Statement of the Competency

To apply a logical analytical process to how knowledge is organized and used.

Elements of the Competency	Performance Criteria
1. To recognize the basic elements of a field of knowledge.	• Appropriate description of the basic elements • Appropriate use of terminology relevant to fields of knowledge
2. To define the modes of organization and utilization of a field of knowledge.	• Adequate definition of the dimensions, limits and uses of fields of knowledge
3. To situate a field of knowledge within its historical context.	• Accurate identification of the main components in the historical development of fields of knowledge • Accurate description of the effects of historical development and societal milieu on the limitations and uses of a field of knowledge
4. To organize the main components into coherent patterns.	• Coherent organization of the main components
5. To produce a synthesis of the main components.	• Appropriate analysis of the components • Coherent synthesis of the main components • Appropriate expression, including a significant individual written component, of an analysis of the context, importance and implications of the organization and uses of knowledge

Learning Activities

Discipline:	Humanities
Weighting:	3-1-3
Credits:	2 1/3

Humanities	Code: 000G

Objective *Standard*

Statement of the Competency

To apply a critical thought process to world-views.

Elements of the Competency	Performance Criteria
1. To describe world-views.	• Accurate description of a society or group with a distinctive world-view • Appropriate use of terminology relevant to these societies or groups
2. To explain the major ideas, values and implications of a world-view.	• Adequate explanation of the salient components of a world-view
3. To organize the ideas, values and experiences of a world-view into coherent patterns.	• Coherent organization of ideas about a world-view • Appropriate expression, including a significant individual written component, of an analysis of the context, importance and implications of world-views
4. To compare world-views.	• Comparative analysis of these world-views • Appropriate inclusion of central elements, relationships and organizational principles of the societies or groups in the analysis

Learning Activities

Discipline:	Humanities
Weighting:	3-0-3
Credits:	2

Langue seconde (niveau I) Code: 0017

Objective	***Standard***

Statement of the Competency

Appliquer les notions de base de la communication en français courant.

Elements of the Competency	**Performance Criteria**
1. Dégager le sens d'un message oral simple.	• Repérage précis des difficultés de compréhension du message. • Utilisation pertinente des techniques d'écoute choisies. • Distinction précise du sens général et des idées essentielles du message. • Description précise du sens général et des idées essentielles du message.
2. Émettre un message oral simple.	• Repérage précis des difficultés d'expression. • Utilisation pertinente des techniques d'expression orales choisies. • Emploi pertinent du vocabulaire courant. • Expression intelligible du propos.
3. Dégager le sens d'un texte.	• Repérage précis des difficultés de compréhension du texte. • Utilisation pertinente des techniques de lecture choisies. • Distinction claire des principaux éléments du texte. • Description précise du sens général et des idées essentielles d'un texte de 500 mots.
4. Rédiger un texte simple.	• Repérage précis des difficultés d'écriture. • Utilisation pertinente des techniques d'écriture choisies. • Emploi pertinent du vocabulaire courant. • Formulation claire et cohérente d'un texte de 100 mots.

Learning Activities

Discipline: Français, langue seconde
Weighting: 2-1-3
Credits: 2

Langue seconde (niveau II) Code: 000A

Objective	***Standard***

Statement of the Competency

Communiquer en français avec une certaine aisance.

Elements of the Competency	**Performance Criteria**
1. Interpréter un texte oral simple de trois minutes en français courant.	• Distinction claire des principaux éléments du texte oral. • Explication précise du sens des mots dans le texte. • Repérage précis des idées et des sujets traités dans le texte.
2. Produire un texte oral planifié de cinq minutes en français courant.	• Emploi pertinent du vocabulaire courant. • Respect du niveau de langue, du code grammatical et des règles de la prononciation. • Formulation claire et cohérente du propos.
3. Interpréter un texte écrit en français courant.	• Distinction claire des principaux éléments du texte. • Explication précise du sens des mots dans le texte. • Repérage précis des idées principales et de la structure d'un texte de 700 à 1000 mots.
4. Rédiger un texte simple en français courant.	• Respect du code grammatical et orthographique. • Utilisation judicieuse des principaux éléments du corpus. • Formulation claire et cohérente des phrases. • Articulation cohérente des paragraphes. • Rédaction d'un texte de 200 mots.

Learning Activities

Discipline: Français, langue seconde
Weighting: 2-1-3
Credits: 2

Langue seconde (niveau III)	Code: 000B

Objective *Standard*

Statement of the Competency

Communiquer avec aisance en français.

Elements of the Competency	**Performance Criteria**
1. Produire un texte oral planifié de cinq minutes de complexité moyenne.	• Emploi pertinent du vocabulaire courant. • Adaptation à l'interlocuteur ou à l'interlocutrice • Respect du niveau de langue, du code grammatical et des règles de la prononciation. • Formulation claire et cohérente du propos. • Agencement pertinent des idées.
2. Commenter un texte écrit de complexité moyenne.	• Distinction claire des principaux éléments d'un texte comprenant entre 2 500 et 3 000 mots. • Explication précise du sens des mots dans le texte. • Distinction précise des idées principales et secondaires, des faits et des opinions. • Formulation d'éléments implicites.
3. Rédiger un texte de complexité moyenne.	• Respect du code grammatical et orthographique. • Adaptation au lecteur ou à la lectrice. • Utilisation judicieuse des principaux éléments du corpus. • Formulation claire et cohérente des phrases, dont au moins trois sont complexes. • Articulation cohérente des paragraphes. • Rédaction d'un texte de 350 mots.

Learning Activities

Discipline: Français, langue seconde
Weighting: 2-1-3
Credits: 2

Langue seconde (niveau IV) Code: 000C

Objective ***Standard***

Statement of the Competency

Traiter d'un sujet culturel et littéraire.

Elements of the Competency	Performance Criteria
1. Analyser un texte culturel ou littéraire.	• Formulation personnelle des éléments principaux du texte. • Inventaire des thèmes principaux. • Relevé d'indices qui permettent de situer le texte dans son contexte socioculturel et historique. • Repérage des valeurs véhiculées. • Repérage juste de la structure du texte. • Articulation claire d'un point de vue personnel.
2 Rédiger un texte sur un sujet culturel ou littéraire.	• Respect du sujet. • Respect du code grammatical et orthographique. • Adaptation au lecteur ou à la lectrice. • Utilisation judicieuse des principaux éléments du corpus. • Formulation claire et cohérente d'un texte de 500 mots. • Articulation claire d'un point de vue personnel.

Learning Activities

Discipline: Français, langue seconde
Weighting: 3-0-3
Credits: 2

Physical Education	Code: 0064

Objective — *Standard*

Statement of the Competency

To establish the role that being physically active plays amongst the lifestyle behaviours which promote health.

Elements of the Competency	Performance Criteria
1. To establish a relationship between their lifestyle and their health.	• Appropriate use of documentation • Appropriate connections between their lifestyle and their health
2. To be physically active in a manner that promotes health.	• Observance of the rules involved in physical activities, including safety rules • Respect for their abilities when engaging in physical activities
3. To recognize their needs, abilities and motivational factors with respect to regular physical activity.	• Appropriate use of quantitative and qualitative physical data • Statement of their main physical needs and abilities • Statement of their main motivational factors with respect to regular physical activity
4. To propose physical activities that promote health.	• Appropriate and justified choice of physical activities according to their needs, abilities, and motivational factors

Learning Activities

Discipline:	Physical Education
Weighting:	1-1-1
Credits:	1

Physical Education	Code: 0065

Objective	***Standard***

Statement of the Competency

To improve one's effectiveness when practising a physical activity.

Element of the Competency	**Performance Criteria**
1. To use a process designed to improve their effectiveness during a physical activity.	• Initial assessment of their skills and attitudes in relation to a physical activity • Statement of their expectations and needs with respect to their ability to carry out the activity • Appropriate formulation of personal objectives • Statement of the means selected to achieve their objectives • Observance of the rules involved in the physical activity, including safety rules • Periodic evaluation of their skills and attitudes in relation to the activity • Meaningful interpretation of the progress achieved and the difficulties experienced during the activity • Appropriate, periodic adjustments of their objectives or the means used to achieve them • Appreciable improvement of the motor skills required by the activity

Learning Activities

Discipline:	Physical Education
Weighting:	0-2-1
Credits:	1

Physical Education	Code: 0066

Objective	***Standard***

Statement of the Competency

To demonstrate one's responsibility for being physically active in a manner which promotes health.

Elements of the Competency	**Performance Criteria**
1. To make physical activity part of a healthy lifestyle.	• Practise of a physical activity while maintaining a balance between effectiveness and the factors promoting health
2. To manage a personal physical activity program.	• Statement of their priorities according to their needs, skills, and motivational factors in relation to regular physical activity • Proper formulation of the objectives for their personal programs • Appropriate choice of activity or activities for their personal programs • Appropriate planning of the conditions in which the activity or activities in their personal programs are carried out • Appropriate choice of criteria for measuring the attainment of their personal programs • Periodic assessment of the time invested and the activities carried out during the program • Meaningful interpretation of the progress achieved and difficulties experienced during the activities • Appropriate, periodic adjustment of their objectives or the means used to attain them

Learning Activities

Discipline:	Physical Education
Weighting:	1-1-1
Credits:	1

Language of Instruction and Literature	Code: 000L

Objective	***Standard***

Statement of the Competency

To communicate in the forms of discourse appropriate to one or more fields of study.

Elements of the Competency	**Performance Criteria**
1. To identify the forms of discourse appropriate to given fields of study.	• Accurate recognition of specialized vocabulary and conventions • Accurate recognition of the characteristics of the form of discourse
2. To recognize the discursive frameworks appropriate to given fields of study.	• Clear and accurate recognition of the main ideas and structure • Appropriate distinction between fact and argument
3. To formulate a discourse.	• Appropriate choice of tone and diction • Correctly developed sentences • Clearly and coherently developed paragraphs • Appropriate use of program-related communication strategies • Formulation of a 1000-word discourse • Thorough revision of form and content

Learning Activities

Discipline:	English
Hours of instruction:	60
Credits:	2

Humanities	Code: 000U

Objective	***Standard***

Statement of the Competency

To apply a critical thought process to ethical issues relevant to the field of study.

Elements of the Competency	**Performance Criteria**
1. To situate significant ethical issues in appropriate world-views and fields of knowledge.	• Accurate recognition of the basic elements of ethical issues • Appropriate use of relevant terminology • Adequate identification of the main linkages with world-views and fields of knowledge
2. To explain the major ideas, values, and social implications of ethical issues.	• Adequate description of the salient components of the issues
3. To organize the ethical questions and their implications into coherent patterns.	• Coherent organization of the ethical questions and their implications • Appropriate expression, including a significant individual written component, of an analysis of the context, importance and implications of the issues
4. To debate the ethical issues.	• Adequate development of substantiated argumentation including context and diverse points of view • Clear articulation of an individual point of view

Learning Activities

Discipline:	Humanities
Hours of instruction:	45
Credits:	2

Langue seconde (niveau I)	Code: 0018

Objective	***Standard***

Statement of the Competency

Appliquer des notions fondamentales de la communication en français, liées à un champ d'études.

Elements of the Competency	**Performance Criteria**
1. Dégager le sens d'un message oral simple lié à un champ d'études.	• Repérage précis des difficultés de compréhension du message. • Distinction juste des caractéristiques du message. • Repérage juste du vocabulaire spécialisé. • Utilisation pertinente des techniques d'écoute choisies. • Distinction claire des principaux éléments du message. • Description précise du sens général et des idées essentielles du message.
2. Dégager le sens et les caractéristiques d'un texte lié à un champ d'études.	• Repérage précis des difficultés de compréhension du texte. • Distinction juste des caractéristiques du texte. • Repérage précis du vocabulaire spécialisé. • Utilisation pertinente des techniques de lectures choisies. • Distinction claire des principaux éléments du texte. • Description précise du sens général et des idées essentielles du texte.
3. Émettre un message oral simple lié à un champ d'études.	• Repérage précis des difficultés d'expression orale. • Utilisation pertinente des techniques d'expression orale choisies. • Utilisation pertinente du vocabulaire courant et spécialisé. • Expression intelligible du propos.

Langue seconde (niveau I)	Code: 0018
4. Rédiger un court texte lié à un champ d'études.	• Repérage précis des difficultés d'écrire. • Utilisation pertinente des techniques d'écriture choisies. • Utilisation pertinente du vocabulaire courant et spécialisé. • Formulation claire et cohérente du texte.

Learning Activities

Discipline:	Français, langue seconde
Hours of instruction:	45
Credits:	2

Langue seconde (niveau II) Code: 000Q

Objective	***Standard***

Statement of the Competency

Communiquer en français dans un champ d'études particulier.

Elements of the Competency	**Performance Criteria**
1. Distinguer les types de textes propres au champ d'études.	• Distinction précise des caractéristiques formelles de chacun des principaux types de textes et des conventions utilisées.
2. Interpréter des textes représentatifs du champ d'études.	• Distinction claire des principaux éléments du texte. • Interprétation claire du vocabulaire spécialisé. • Repérage précis des idées et des sujets traités. • Utilisation pertinente des techniques de lecture et d'écoute.
3. Utiliser des techniques de production de textes appropriées au champ d'études.	• Emploi pertinent du vocabulaire spécialisé et des conventions. • Respect du niveau de langue et du code grammatical. • Formulation claire et cohérente du propos. • Utilisation pertinente des techniques d'expression.

Learning Activities

Discipline: Français, langue seconde
Hours of instruction: 45
Credits: 2

Langue seconde (niveau III)	Code: 000R

Objective	***Standard***

Statement of the Competency

Communiquer avec aisance en français dans un champ d'études particulier.

Elements of the Competency	**Performance Criteria**
1. Commenter des textes propres au champ d'études.	• Distinction précise des caractéristiques formelles des principaux types de textes et des conventions utilisées. • Explication précise du sens des mots dans le texte. • Repérage précis de la structure du texte. • Reformulation juste des idées principales et secondaires, des faits et des opinions. • Emploi juste du vocabulaire spécialisé.
2. Produire un texte sur un sujet lié au champ d'études.	• Respect du sujet. • Emploi pertinent du vocabulaire spécialisé et des conventions. • Respect du niveau de langue et du code grammatical. • Formulation claire et cohérente du propos. • Agencement pertinent des idées. • Adéquation entre forme et fond.

Learning Activities

Discipline:	Français, langue seconde
Hours of instruction:	45
Credits:	2

Langue seconde (niveau IV)	Code: 000S

Objective	***Standard***

Statement of the Competency

Disserter en français sur un sujet lié au champ d'études.

Elements of the Competency	**Performance Criteria**
1. Analyser un texte lié au champ d'études.	• Distinction précise des caractéristiques formelles des types particuliers de textes. • Formulation personnelle des éléments principaux. • Inventaire des thèmes principaux. • Repérage juste de la structure du texte. • Relevé d'indices qui permettent de situer le texte dans son contexte. • Articulation claire d'un point de vue personnel, s'il y a lieu. • Association juste des éléments du texte au sujet traité.
2. Rédiger un texte sur un sujet lié au champ d'études.	• Respect du sujet. • Emploi pertinent du vocabulaire spécialisé et des conventions. • Choix judicieux des principaux éléments du corpus en fonction du type de texte. • Formulation claire et cohérente du texte. • Respect du code grammatical et orthographique. • Articulation claire d'un point de vue personnel, s'il y a lieu.

Learning Activities

Discipline:	Français, langue seconde
Hours of instruction:	45
Credits:	2

Social Sciences	Code: 000V

Objective

Statement of the Competency

To estimate the contribution of the social sciences to an understanding of contemporary issues.

Standard

Achievement Context

- Working alone
- In an essay of approximately 750 words on the contribution of the social sciences to an understanding of contemporary issues
- Using documents and data from the social sciences

Elements of the Competency	Performance Criteria
1. Recognize the focus of one or more of the social sciences and their main approaches.	• Formulation of the focus specific to one or more of the social sciences • Description of the main approaches used in the social sciences
2. Identify some of the issues currently under study in the social sciences.	• Association of these issues with the pertinent areas of research in the social sciences
3. Demonstrate the contribution of one or more of the social sciences to an understanding of contemporary issues.	• Presentation of contemporary issues by emphasizing the interpretation of the social sciences • Illustration of the interaction between certain social changes and the contribution of the social sciences

Learning Activities

Hours of instruction: 45
Credits: 2

Social Sciences	Code: 000W

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To analyze one of the major problems of our time using one or more social scientific approaches.	• Working alone • In an essay of approximately 750 words on a topic related to human existence • Using reference materials from one or more disciplines in the social sciences
Elements of the Competency	**Performance Criteria**
1. Formulate a problem using one or more social scientific approaches.	• Presentation of the background to the problem • Use of appropriate concepts and language • Brief description of individual, collective, spatiotemporal and cultural aspects of the problem
2. Deal with an issue using one or more social scientific approaches.	• Clear formulation of an issue • Selection of pertinent reference materials • Brief description of historical, experimental and survey methods
3. Draw conclusions.	• Appropriate use of the selected method • Determination of appropriate evaluation criteria • Identification of strengths and weaknesses of the conclusions • Broadening of issue studied

Learning Activities

Hours of instruction: 45
Credits: 2

Science and Technology	Code: 000X

Objective

Statement of the Competency

To explain the general nature of science and technology and some of the major contemporary scientific or technological issues.

Standard

Achievement Context

- Working alone
- Given a written commentary on a scientific discovery or technological development
- In an essay of approximately 750 words

Elements of the Competency	Performance Criteria
1. Describe scientific thinking and the standard method.	• Brief description of the essential characteristics of scientific thinking, including quantification and demonstration • Organized list and brief description of the essential characteristics of the main steps in the standard scientific method
2. Demonstrate how science and technology are complementary.	• Definition of terms and description of the primary ways in which science, techniques and technology are interrelated: logical and temporal connections, and mutual contributions
3. Explain the context and the stages related to several scientific and technological discoveries.	• Pertinent and coherent explanation of the relationship between the determining contexts of several scientific and technological discoveries • List of the main stages of scientific and technological discoveries
4. Deduce different consequences and questions resulting from certain recent scientific and technological innovations.	• Brief description of important consequences (of different types) and the current major challenges resulting from several scientific and technological discoveries • Formulation of relevant questions and credibility of responses to the questions formulated

Learning Activities

Hours of instruction: 45
Credits: 2

Science and Technology	Code: 000Y

Objective — *Standard*

Statement of the Competency

To resolve a simple problem by applying the basic scientific method.

Achievement Context

- Working alone or in groups
- Given a simple scientific and technological problem that can be resolved by applying the standard scientific method
- Using common scientific instruments and reference materials (written or other)

Elements of the Competency	Performance Criteria
1. Describe the main steps of the standard scientific method.	• Organized list and brief description of the characteristics of the steps of the standard scientific method
2. Formulate a hypothesis designed to solve a simple scientific and technological problem.	• Clear, precise description of the problem • Observance of the principles for formulating a hypothesis (observable and measurable nature of data, credibility, etc.)
3. Verify a hypothesis by applying the fundamental principles of the basic experimental method.	• Pertinence, reliability and validity of the experimental method used • Observance of established experimental method • Appropriate choice and use of instruments • Clear, satisfactory presentation of results • Validity of the connections established between the hypothesis, the verification and the conclusion

Learning Activities

Hours of instruction: 45
Credits: 2

Modern Languages	Code: 000Z

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To communicate with limited skill[3] in a modern language.	• For modern Latin-alphabet languages: – during a conversation consisting of at least eight sentences of dialogue – in a written text consisting of at least eight sentences Or • For non–Latin-alphabet languages: – during a conversation consisting of at least six sentences of dialogue – in a written text consisting of at least six sentences • Based on learning situations on familiar themes • Using reference materials
Elements of the Competency	**Performance Criteria**
	Learning a modern language requires becoming aware of the culture of the people who use the language.
1. Understand the meaning of a verbal message.	• Accurate identification of words and idiomatic expressions • Clear recognition of the general meaning of simple messages • Logical connections between the various elements of the message
2. Understand the meaning of a written message.	• Accurate identification of words and idiomatic expressions • Clear recognition of the general meaning of simple messages • Logical connections between the various elements of the message

3 This refers to the limited use of the structures, grammar and vocabulary of the language studied. This limitation varies depending on the complexity of the modern language.

Modern Languages	Code: 000Z
3. Express a simple message verbally.	• Appropriate use of language structures in main and subordinate clauses • Appropriate application of grammar rules • Use of verbs in the present indicative • Appropriate use of basic vocabulary and idiomatic expressions • Comprehensible pronunciation • Coherent sequence of simple sentences • Spontaneous, coherent sequence of sentences in a dialogue
4. Write a text on a given subject.	• Appropriate use of language structures in main and subordinate clauses • Appropriate application of basic grammar rules • Use of verbs in the present indicative • Appropriate use of basic vocabulary and idiomatic expressions • Coherent sequence of simple sentences • Acceptable application of graphic rules for writing systems that do not use the Latin alphabet

Learning Activities

Hours of instruction:	45
Credits:	2

Modern Languages	Code: 0010

Objective — *Standard*

Statement of the Competency	**Achievement Context**
To communicate on familiar topics in a modern language.	• During a conversation consisting of at least 15 sentences of dialogue • In a written text consisting of at least 20 sentences for Latin-alphabet languages • In a written text consisting of at least 10 sentences for non–Latin alphabet languages • Based on: – situations in everyday life – simple topics from everyday life • Using reference materials

Elements of the Competency	**Performance Criteria**
	Learning a modern language requires becoming aware of the culture of the people who use the language.
1. Understand the meaning of a verbal message.	• Accurate identification of words and idiomatic expressions • Clear recognition of the general meaning and essential ideas of messages of average complexity • Logical connection between the various elements of the message
2. Understand the meaning of a written message.	• Accurate identification of words and idiomatic expressions • Clear recognition of the general meaning and essential ideas of messages of average complexity • Logical connection between the various elements of the message
3. Express a simple message verbally, using sentences of average complexity.	• Appropriate use of language structures in main or subordinate clauses • Appropriate application of grammar rules • Use of verbs in the present indicative • Appropriate use of enriched basic vocabulary and idiomatic expressions • Comprehensible pronunciation • Coherent sequence of sentences of average complexity • Coherent dialogue of average complexity

Modern Languages	Code: 0010
4. Write a text on a given subject, using sentences of average complexity.	• Appropriate use of language structures in main or subordinate clauses • Appropriate application of grammar rules • Use of verbs in the present and past indicative • Appropriate use of enriched basic vocabulary and idiomatic expressions. • Coherent sequence of sentences of average complexity • Acceptable application of graphic rules for writing systems that do not use the Latin alphabet

Learning Activities

Hours of instruction**:** 45
Credits: 2

Modern Languages	Code: 0067

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To communicate with relative ease in a modern language.	• Working alone • During a conversation consisting of at least 20 sentences of dialogue • In a written text of medium length (at least 25 sentences for Latin-alphabet languages and 15 sentences for other languages) • Given documents of a sociocultural nature • Using reference materials for the written text
Elements of the Competency	**Performance Criteria**
	Learning a modern language requires being aware of the culture of the people who use the language.
1. Understand the meaning of a verbal message in everyday language.	• Accurate explanation of the general meaning and essential ideas of the message • Clear identification of structural elements of the language
2. Understand the meaning of a text of average complexity.	• Accurate explanation of the general meaning and essential ideas of the text • Clear identification of structural elements of the language
3. Have a conversation about a subject.	• Appropriate use of the structural elements of the language according to the message to be expressed • Appropriate use of everyday vocabulary • Accurate pronunciation and intonation • Normal flow in a conversation in everyday language • Coherence of the message expressed • Pertinent responses to questions
4 Write a text of average complexity.	• Appropriate use of the structural elements of the language according to the text to be written • Accurate vocabulary • Coherence of the text as a whole • Observance of presentation and writing rules

Learning Activities

Hours of instruction: 45
Credits: 2

Mathematics Literacy and Computer Science	Code: 0011

Objective — *Standard*

Statement of the Competency

To recognize the role of mathematics or informatics in contemporary society.

Achievement Context

- Working alone
- In an essay of approximately 750 words
- Using several concrete examples selected by the student demonstrating the competency
-

Elements of the Competency	Performance Criteria
1. Demonstrate the acquisition of basic general knowledge in mathematics or informatics.	• Identification of basic notions and concepts • Identification of main branches of mathematics or informatics • Appropriate use of terminology
2. Describe the evolution of mathematics or informatics.	• Descriptive summary of several major phases
3. Recognize the contribution of mathematics or informatics to the development of other areas of knowledge.	• Demonstration of the existence of important contributions, using concrete examples
4. Illustrate the diversity of mathematical or informatics applications.	• Presentation of a range of applications in various areas of human activity, using concrete examples
5. Evaluate the impact of mathematics or informatics on individuals and organizations.	• Identification of several major influences • Explanation of the way in which mathematics or informatics have changed certain human and organizational realities • Recognition of the advantages and disadvantages of these influences

Learning Activities

Hours of instruction: 45
Credits: 2

Mathematics Literacy and Computer Science — Code: 0012

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To use various mathematical or computer concepts, procedures and tools for common tasks.	• Working alone • While carrying out a task or solving a problem based on everyday needs. • Using familiar tools and reference materials
Elements of the Competency	**Performance Criteria**
1. Demonstrate the acquisition of basic functional knowledge in mathematics or informatics.	• Brief definition of concepts • Correct execution of basic operations • Appropriate use of terminology
2. Select mathematical or computer tools and procedures on the basis of specific needs.	• List of numerous possibilities available with mathematical and computer tools and procedures • Analysis of concrete situations and recognition of the usefulness of mathematical or computer tools and procedures • Appropriate choice according to needs
3. Use mathematical or computer tools and procedures to carry out tasks and solve problems.	• Planned, methodical process • Correct use of tools and procedures • Satisfactory results, given the context • Appropriate use of terminology specific to a tool or procedure
4. Interpret the quantitative data or results obtained using mathematical or computer tools and procedures.	• Accurate interpretation, given the context • Clear, precise formulation of the interpretation

Learning Activities

Hours of instruction: 45
Credits: 2

Art and Aesthetics	Code: 0013

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To consider various forms of art produced by aesthetic practices.	• Working alone • Given a specified work of art • In a written commentary of approximately 750 words.
Elements of the Competency	**Performance Criteria**
1. Develop an appreciation for the dynamics of the imagination in art.	• Precise explanation of a creative process connected to the construction of an imaginary universe
2. Describe art movements.	• Descriptive list of the main characteristics of three art movements from different periods, including a modern movement
3. Give a commentary on a work of art.	• Coherent organization of observations, including identification of four basic elements of form and structure related to the language used as well as a justified description of the meaning of the work of art

Learning Activities

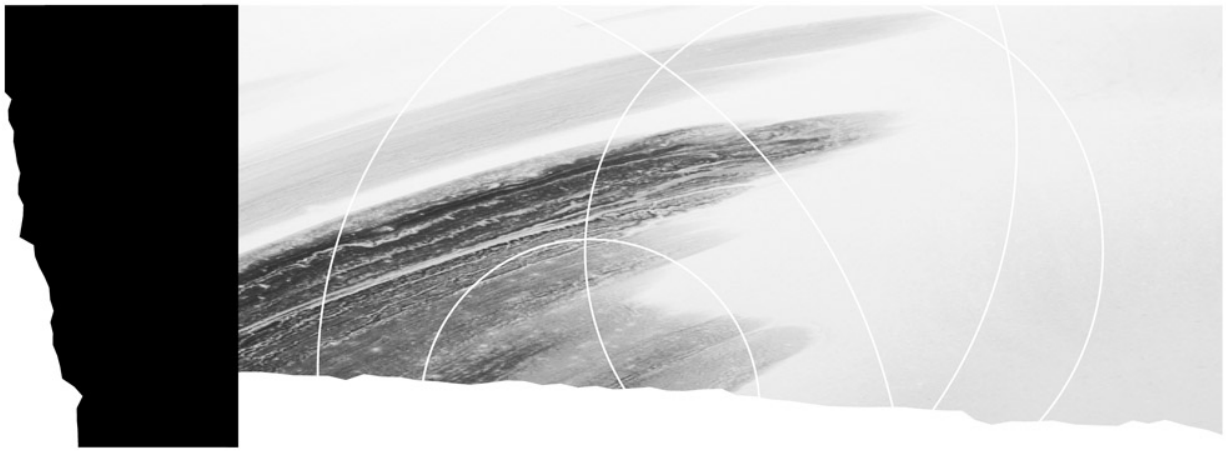
Hours of instruction: 45
Credits: 2

Art and Aesthetics — Code: 0014

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To produce a work of art.	• Working alone • During a practical exercise • In the context of a creation or an interpretation • Using the basic elements of the language and techniques specific to the medium selected
Elements of the Competency	**Performance Criteria**
1. Recognize the primary forms of expression of an artistic medium.	• Identification of specific features: originality, essential qualities, means of communication, styles, genres
2. Use the medium.	• Personal, coherent use of elements of language • Satisfactory application of artistic techniques • Observance of the requirements of the method of production

Learning Activities

Hours of instruction: 45
Credits: 2



Part II

Goals of the Program-Specific Component

Educational Aims of the Program-Specific Component

Grid of Competencies

Harmonization

Objectives and Standards of the Program-Specific Component

Goals of the Program-Specific Component

The aim of the *Biomedical Laboratory Technology* program is to train technologists to carry out analyses or technical operations and collaborate in research and development work in order to provide data or interpretations that will contribute to the prevention, diagnosis or treatment of disease.

Graduates of this program will be able to work in health care institutions, public health centres, private laboratories or research centres, carrying out biochemical, microbiological, immunohematological, hematological and hemostasis analyses and analyses outside the laboratory, procuring various specimens and preparing tissues and blood products. They will have acquired attitudes essential to the exercise of their occupation, such as a sense of responsibility, the ability to manage stress, concern for accuracy and respect for professional ethics.

Most tasks carried out by biomedical laboratory technologists are part of a work process that may be summarized as follows: plan the work; prepare the chemicals, materials and equipment; prepare the samples; carry out the analyses; interpret and communicate the results; and put away the materials.

The goals of the program-specific component of the *Biomedical Laboratory Technology* program are based on the general goals of vocational and technical training. These goals are:

- To help students develop effectiveness in the practice of a trade or occupation, that is:
  - to teach students to perform roles, functions, tasks and activities associated with the trade or occupation upon entry into the job market
  - to prepare students to progress satisfactorily on the job (which implies having the necessary technical and technological knowledge and skills in such areas as communication, problem solving, decision making, ethics, health and safety)

- To help students integrate into the work force, that is:
  - to familiarize students with the job market in general and the context surrounding the occupation they have chosen
  - to familiarize students with their rights and responsibilities as workers

- To foster students' personal development and acquisition of occupational knowledge, skills, perceptions and attitudes, that is:
  - to help students develop their autonomy and the desire to learn, and acquire effective work methods
  - to help students understand the principles underlying the techniques and the technology used in the trade or occupation
  - to help students develop self-expression, creativity, initiative and entrepreneurial spirit
  - to help students adopt the attitudes required to successfully practise the trade or occupation, and instill in them a sense of responsibility and a concern for excellence

- To promote job mobility, that is:
  - to help students develop positive attitudes toward change
  - to help students develop the means to manage their careers by familiarizing them with entrepreneurship

Educational Aims of the Program-Specific Component

Educational aims are based on important values and concerns and serve as guidelines for interactions with students. As a general rule, educational aims focus on important aspects of the students' professional and personal development, such as attitudes, work habits and intellectual skills, which have not been explicitly formulated in the program's goals, objectives and standards.

The following is a description of the aims of the program-specific component of the *Biomedical Laboratory Technology* program:

- To develop the behaviours and attitudes that reflect the ongoing application of quality assurance principles
- To develop the skills needed to interact with clients
- To work with other health care professionals
- To adapt to technological changes

Grid of Competencies

The grid of competencies provides an overview of a technical program. It brings together all of the components of a program and shows the relationship among the competencies.

The grid of competencies includes:

- the general competencies of the program-specific component, which deal with work-related activities common to various tasks or situations
- the specific competencies, which deal with tasks directly related to the practice of the trade or occupation

The grid of competencies shows the relationship between the general competencies on the horizontal axis and the specific competencies on the vertical axis. The symbol (❍) indicates a correlation between a general and a specific competency.

The order in which the competencies are presented reflects the program's design; it does not dictate the course sequence. The grid of competencies is provided for information purposes only.

GRID OF COMPETENCIES

BIOMEDICAL LABORATORY TECHNOLOGY

SPECIFIC COMPETENCIES	Competency number	GENERAL COMPETENCIES												
		To analyze the occupation	To maintain standards of quality	To prepare solutions	To identify organic molecules	To apply clinical biochemistry techniques	To detect microorganisms	To characterize anatomical and physiological information	To apply immunological techniques	To interact with a client	To prepare biological samples	To use analytical instruments	To interpret the results of a biomedical analysis in terms of human pathophysiology	To apply molecular biology techniques
Competency number		1	2	3	4	5	6	7	8	10	12	13	14	17
To identify microorganisms	9	o	o	o	o	o	o	o	o					
To procure specimens	11	o	o					o		o				
To prepare tissues for anatomical examination	15	o	o	o	o	o		o	o		o	o	o	
To perform analyses in hemostasis	16	o	o	o	o	o		o	o		o	o	o	
To perform analyses in hematology	18	o	o	o	o	o		o	o		o	o	o	o
To perform analyses in clinical biochemistry	19	o	o	o	o	o		o	o		o	o	o	o
To perform analyses in medical microbiology	20	o	o	o	o		o	o	o		o	o	o	o
To perform analyses in transfusion science	21	o	o	o				o	o		o	o	o	o
To prepare blood products	22	o	o					o	o		o	o		
To solve problems related to transfusions	23	o	o					o	o				o	
To perform analyses outside a laboratory	24	o	o			o		o	o	o	o	o	o	

Harmonization

The Ministère de l'Éducation harmonizes its vocational and technical programs by establishing similarities and continuity between secondary- and college-level programs within a particular sector or between sectors, in order to avoid overlap in program offerings, recognize prior learning and facilitate the students' progress.

Harmonization establishes consistency between training programs and is especially important in ensuring that the tasks of a trade or occupation are clearly identified and described. Harmonization makes it possible to identify tasks requiring competencies that are common to more than one program. Even if there are no common competencies, training programs are still harmonized.

Harmonization is said to be "inter-level" when it focuses on training programs at different levels, "intra-level" when it focuses on programs within the same educational level, and "inter-sector" when carried out between programs in various sectors.

An important aspect of harmonization is that it allows the common features of competencies to be identified and updated as needed. Common competencies are those that are shared by more than one program; once acquired in one program, they can be recognized as having been acquired in another. Competencies with exactly the same statement and elements are said to be identical. Common competencies that are not identical but have enough similarities to be of equal value are said to be equivalent.

Harmonization of the *Biomedical Laboratory Technology* program has resulted in identifying competencies that are shared with other programs. Detailed information on the harmonization of this program and its results are presented in the document entitled *Tableaux d'harmonisation, Technologie d'analyses biomédicales.*

	Code: 01ST

Objective

Statement of the Competency

To analyze the occupation.

Standard

Achievement Context

- Using documentation on the occupation of biomedical laboratory technologist:
  - the preliminary study for the *Technologie de laboratoire médical* program
  - the job analysis report for Technologie de laboratoire médical
  - standards of the Ordre professionnel des technologistes médicaux du Québec
  - other information documents on the occupation

Elements of the Competency	Performance Criteria
1. To compare the characteristics of different types of laboratories.	• Brief summary of the main activities of laboratories in health care institutions, public health centres and research centres, and private laboratories • Clear description of the characteristics of different types of analyses
2. To describe the job function and working conditions.	• Clear definition of the function of a biomedical laboratory technologist • Accurate description of: – work environments – working conditions – types of work organization
3. To examine the tasks associated with the occupation.	• Careful examination of each task • Precise assessment of the importance, frequency and complexity of the tasks, taking into account the characteristics of different work environments
4. To examine the skills and behaviours needed to perform the tasks of the occupation.	• Pertinent connections between skills and socioaffective behaviours, on the one hand, and the tasks of the occupation, on the other

Code: 01E0

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To maintain standards of quality.	• Based on instructions; protocols; laws and regulations on health and safety in the workplace; Workplace Hazardous Materials Information System (WHMIS); and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO) • Using protective clothing, safety equipment, first-aid equipment, a laboratory manual, computer and appropriate software, and the documentation required • Respecting health and safety regulations • Demonstrating a sense of responsibility
Elements of the Competency	**Performance Criteria**
1. To perform activities related to quality assurance.	• Complete collection of information on quality assurance systems • Precise documentation of laboratory protocols in the laboratory manual • Strict adherence to protocols and standard operating procedures • Proper application of external or internal quality control procedures • Correct validation of analytical methods, equipment and instruments • Proper maintenance, verification and calibration of equipment and instruments • Identification of any anomalies • Clear determination of the traceability of products and samples • Proper recording of: – calibration results – quality control results – maintenance controls – test results – deviations from protocols and procedures – corrective actions taken • Use of adequate data storage systems

	Code: 01E0
2. To apply safe work practices.	• Complete collection of information on the laws governing health and safety in the workplace • Proper interpretation of WHMIS safety data sheets • Proper evaluation of the risks of handling and storing: – chemicals – biological products • Adherence to recommended hygiene practices and sterilization rules • Adequate use of protective clothing and safety equipment • Adequate control of physical risk • Proper management of chemical, radioactive and biological materials according to level of health risk
3. React in emergency situations.	• Application of appropriate first-aid in case of an accident • Adherence to established protocols in case of: – leaks or spills of infectious materials or dangerous chemicals – fire
4. Manage the inventory of products and materials.	• Appropriate choice of products and materials, taking into account: – the specification standards requested – the quality characteristics expected – the budgets allocated • Proper labelling of materials • Appropriate choice of storage place and conditions • Proper recording of materials in inventory

Code: 01SU

Objective

Statement of the Competency

To prepare solutions.

Standard

Achievement Context

- Based on instructions and protocols
- Using the products and materials required; appropriate equipment, such as analytical balances and a pH meter; and the documentation required, such as the *Handbook of Physics and Chemistry*
- Respecting health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO)

Elements of the Competency	Performance Criteria
1. To interpret the instructions.	• Correct interpretation of the directions in the protocol regarding reagents
2. To prepare the material.	• Appropriate choice of chemicals taking into account degree of purity • Appropriate choice of materials
3. To calculate the quantities of chemicals or solutions.	• Exact calculation of the quantity of chemicals or solutions according to: – nature of the solute – solubility of the solute in the solvent; – concentration of the stock solution – desired unit of concentration – type of solution prepared – solid or liquid state of the solute – density
4. To perform operations associated with preparing the solutions.	• Exact and precise weighing • Proper choice of pipette, burette and graduated cylinder • Proper and safe use of the pipette • Proper verification of the cleanliness of the equipment • Appropriate heating • Appropriate dilution • Correct application of the technique for transferring a solution from one container to another • Proper filtration of the solution

	Code: 01SU
5. To label the container.	• Proper choice of container • Precise labelling in accordance with the standards of the laboratory
6. To store the solutions.	• Proper storage according to: – health and safety regulations – storage conditions for the solution

Code: 01SV

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To identify organic molecules.	• Based on instructions and protocols • With samples • Using the products and materials required; appropriate equipment, such as a freezing-point apparatus, boiling-point apparatus, a refractometer, a polarimeter and an infrared spectrometer; a computer and appropriate software; and the documentation required, such as the *Handbook of Physics and Chemistry* • Respecting health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO) • Paying close attention to details
Elements of the Competency	**Performance Criteria**
1. To purify the product.	• Appropriate filtration of the mixture • Proper decantation, extraction and washing • Correct distillation of the mixture • Correct recrystallization • Appropriate drying • Proper evaporation of the solvent • Proper separation by thin-layer, paper or column chromatography
2. To determine the physical constants of the purified product.	• Correct determination of the freezing or boiling point • Correct determination of the refractive index • Correct determination of optical activity, if required • Correct determination of density
3. To determine the chemical properties of the product.	• Correct identification of classes of reaction, such as substitution, addition and elimination • Proper writing of equations

	Code: 01SV

4. To characterize organic molecules.	• Adherence to the nomenclature regulations of the International Union of Pure and Applied Chemistry (IUPAC) • Correct visualization of the three-dimensional structure of the molecule • Proper performance of qualitative tests to identify functional groups such as: – hydrocarbons – aromatic compounds – alkyl halides – saturated oxygen compounds – amines – heterocycles

Code: 01SW

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To apply clinical biochemistry techniques.	• Based on instructions and protocols • With biological samples • Using the products and materials required; appropriate equipment, such as materials for chromatography, equipment for performing electrophoresis on a support medium, a UV/visible spectrophotometer and a refractometer; a computer and appropriate software and the documentation required • Respecting health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO) • Paying close attention to details
Elements of the Competency	**Performance Criteria**
1. To extract biomolecules.	• Proper choice of method for extracting biomolecules, taking into account their structural characteristics • Correct extraction of proteins, carbohydrates and lipids from biological samples, taking into account their physiochemical properties
2. To separate biomolecules.	• Proper choice of separation method according to the required degree of purification • Correct separation of biomolecules by: – chromatographic methods – electrophoresis on a support medium, taking into account their physiochemical characteristics • Correct verification of parameters that have been optimized • Proper differentiation of biomolecules, according to their metabolic activity: – simple – complex – conjugated
3. To assay biomolecules.	• Proper choice of assay method • Correct biomolecule assay according to reactivity

	Code: 01SW
4. To measure enzymatic activity.	• Demonstration of an enzymatic reaction • Effective control of the factors influencing enzymatic reactions • Exact assay of clinically significant enzymes

Code: 01SX

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To detect microorganisms.	• Based on instructions and protocols • With samples • Using the products and materials required; appropriate equipment, such as an autoclave, a bright-field microscope and magnifiers; and the documentation required • Respecting sterile conditions, health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO) • Paying close attention to details
Elements of the Competency	**Performance Criteria**
1. To examine the samples.	• Correct detection of prokaryotae • Correct distinction between fungi and protozoa • Proper use of a bright-field microscope and a stereo microscope
2. To prepare sterile culture media.	• Exact concentration calculations • Proper preparation of the culture medium • Exact pH reading • Appropriate choice of sterilization method • Appropriate storage of the culture medium
3. To identify microorganisms.	• Sterile plating • Correct enumeration of the colonies • Isolation of microorganisms in a pure culture • Respect for optimal conditions favouring microorganism growth • Morphological identification of the principal microorganisms by: – colony description – colour differentials • Correct differentiation of cellular components of prokaryotae and eukaryotae
4. To evaluate the risks associated with microorganisms.	• Correct association between frequently encountered microorganisms and their effects

	Code: 01SX

5. To apply current methods for controlling microorganisms.	• Proper choice of a physical or chemical method for controlling microorganisms • Safe handling of contaminated material • Proper management of contaminated material • Appropriate emergency action in the case of exposure to microorganisms

Code: 01E7

Objective — *Standard*

Statement of the Competency

To characterize anatomical and physiological information.

Achievement Context

- Working as a technologist in situations involving biological analysis
- Based on protocols
- With tissue and organ samples
- Using the products and materials required, appropriate equipment and microscopes, and the documentation required
- Respecting health and safety regulations
- Demonstrating good observation, analysis and summarizing skills

Elements of the Competency	Performance Criteria
1. To identify anatomic tissues.	• Proper choice of microscope • Proper microscope use and maintenance • Correct identification of cell components based on proper use of stains • Precise identification of tissues in a histological section
2. To differentiate between the organs.	• Exact macroscopic identification of organs according to their anatomic characteristics • Exact microscopic identification of organs according to their morphological and physiological characteristics • Correct detection of functional anomalies of organ components
3. To evaluate the factors contributing to homeostasis.	• Correct interpretation of homeostasis principles • Proper distinction between the chemical, biochemical and physiological phenomena related to homeostasis

Code: 01E8

Objective

Statement of the Competency

To apply immunological techniques.

Standard

Achievement Context

- Based on instructions and protocols
- With biological samples
- Using the products and materials required; appropriate equipment, such as a light microscope, fluorescence microscope, *Enzyme-Linked Immunosorbent Assay* (ELISA) plate washer and reader, hemocytometer, flow cytometer, nephelometer or turbidometric equipment; a computer and appropriate software; and the documentation required
- Respecting health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO)
- Paying attention to precision, details and efficiency

Elements of the Competency	**Performance Criteria**
1. To identify cells of the immune system.	• Proper preparation of the sample: – fresh sample – using a hemocytometer – on a stained smear • Correct evaluation of the number of cells • Correct identification of cells according to their characteristics
2. To manipulate factors associated with antigen-antibody reactions.	• Effective manipulation of variables influencing antigen-antibody reactions taking into account the particularities of antigens and immunoglobulins

	Code: 01E8
3. To identify antigens or antibodies.	• Appropriate application of precipitation techniques: – in a gel medium by immunodiffusion and immunoprecipitation – in a liquid medium by nephelometry and turbidimetry • Correct identification of antigens and antibodies, using markers such as fluorochromes and enzymes • Correct identification of antigen-antibody reactions using direct and indirect agglutination techniques • Appropriate use of complement to detect antigen-antibody reactions • Efficient application of the principle of neutralization to demonstrate antigen-antibody reactions
4. To use antigens and antibodies as reagents.	• Qualitative or quantitative determination of antigens using polyclonal or monoclonal antibodies • Qualitative or quantitative determination of antibodies using the appropriate antigens

Code: 01EA

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To identify microorganisms.	• Working in a microbiology laboratory • Based on instructions and protocols • With biological samples • Using the products and materials required; appropriate equipment, such as sterilization equipment, incubators, bright-phase and phase-contrast microscopes, stereo microscopes, a refrigerator and freezer; a computer and appropriate software; and the documentation required • Respecting sterile conditions, health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO) • Paying attention to precision, details and efficiency
Elements of the Competency	**Performance Criteria**
1. To prepare the material.	• Proper choice of culture medium • Appropriate preparation of culture media and broth • Proper choice of sterilization method for culture medium and equipment • Proper preparation of stains and reagents • Proper storage of: – culture media – stains – reagents
2. To culture prokaryotic and eukaryotic microorganisms.	• Sterile isolation of microorganisms in a pure culture • Appropriate choice of optimal growth conditions for microorganisms taking into account their nutritional needs, metabolism and reproduction

	Code: 01EA
3. To identify prokaryotic and eukaryotic microorganisms.	• Detection of microbiological contaminants • Exact identification of the species by: – examining its morphological characteristics – performing biochemical tests on a macro scale – performing biochemical tests on a micro scale • Exact identification of the subspecies by: – serological tests – fast-acting detection kits • Accurate verification of identification, using the appropriate software
4. To maintain microorganism in culture.	• Proper choice of culture preservation method • Proper subculturing according to quality assurance standards • Proper maintenance of microorganism in culture
5. To decontaminate equipment and workspace.	• Proper evaluation of the risks associated with handling microorganisms • Correct application of decontamination and control methods • Proper management of contaminated waste • Appropriate emergency action in case of exposure to microorganisms

Code: 002R

Objective — *Standard*

Statement of the Competency	**Achievement Context**
To interact with a client.	• In workplace situations involving the procurement of specimens within or outside a hospital and analyses done outside a laboratory • Respecting health and safety regulations; confidentiality; the client's dignity and privacy; legislation concerning right of access to the client's file in public and private health care institutions; and legislation concerning client consent • Demonstrating professionalism, a sense of responsibility and empathy

Elements of the Competency	**Performance Criteria**
1. To greet the client.	• Courteous introduction, including name, occupation and role • Polite request to client to provide name • Careful comparison of information given with data on requisition • Careful verification of ID bracelet, if necessary • Appropriate corrective action, when necessary
2. To inform the client.	• Clarity and pertinence of information • Use of appropriate verbal and nonverbal language • Clear answers to technical questions
3. To obtain the client's consent.	• Respect for the client's right to well-being
4. To react to specific situations.	• Action appropriate to the situation: – refusal to give a specimen – refusal to take a test – complications related to the procurement of the specimen, the administration of medications or other substances, or the performance of the test • Consideration of the client's characteristics: – age – inability to speak English or French – disability – state of unconsciousness – pain or suffering – isolation – aggressive behaviour

Code: 002S

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To procure specimens.	• Working with a client in a test centre, an outpatient clinic, a screening clinic, a hospital • Working individually or in a team • Based on prescriptions, specific requests and protocols. • Using the products and materials required, appropriate equipment, the documentation required, and a computer and appropriate software • Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); the *Professional Code;* the standard rules of the Ordre professionnel des technologistes médicaux du Québec; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism, a sense of responsibility and an ability to manage stress • Showing concern for quality and efficiency • Taking appropriate action in emergencies
Elements of the Competency	**Performance Criteria**
1. To greet the client.	• Courteous greeting • Verification of client's identity • Clear transmission of information • Careful verification of requirements of the analysis • Consent obtained from client
2. To prepare materials.	• Observance of requirements when filling out requisitions • Appropriate preparation of materials
3. To check vital signs, if necessary.	• Proper check of vital signs • Appropriate intervention, taking into account the results obtained
4. To choose the site for collection of the specimen.	• Appropriate choice of specimen collection site, taking into account anatomy and physiology

	Code: 002S

5. To mix substances in order to complete the preparation of a medication, according to a prescription.	• Accurate mixing of substances in order to complete the preparation of a medication, according to a prescription
6. Administer prescribed medications or other prescribed substances in order to perform biomedical analyses or tests.	• Proper administration of prescribed medication or other prescribed substances, including intravenously from a peripheral site • Appropriate intervention in case of clinical signs
7. To collect samples.	• Correct insertion of an instrument in and beyond the pharynx or beyond the nasal vestibule, urinary meatus, labia majora or anal margin, or into a peripheral vein • Correct application of techniques for blood specimen collection: – venipuncture – capillary puncture – phlebotomy • Proper collection of secretions from: – nose – throat – ears – eyes – skin – breasts – vagina – skin wounds or lesions – urethra – rectum
8. To ensure the integrity of specimens.	• Correct labelling of specimens • Observance of instructions for storage • Careful routing of specimens to the laboratory
9. To follow up with the client.	• Clear explanation of instructions to be followed • Courteous leave-taking

Code: 01EW

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To prepare biological samples.	• Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team, with a single sample or a batch of samples • Based on specific requests and protocols • With biological samples • Using the products and materials required; appropriate equipment, such as centrifuges and stainers; a computer and appropriate software; and the documentation required • Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standards and recommendations for the handling and transport of biological specimens of the Groupe sectoriel d'expertises du ministère de la Santé et des Services sociaux; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism and a sense of responsibility • Showing concern for quality and efficiency
Elements of the Competency	**Performance Criteria**
1. To triage samples.	• Appropriate choice of a triage method for a batch of samples • Effective application of a triage method for a batch of samples
2. To verify samples.	• Correct assessment of the conformity of samples with the request for analysis, according to criteria related to: – identification – stability – packaging – respect for the maximum allowable delay prior to analysis • Proper entry of data in the information system

	Code: 01EW
3. To record the physical characteristics of samples, where necessary.	• Recording of characteristics such as: – appearance – colour – odour • Accurate measurement of sample volume
4. To process samples.	• Appropriate choice of one or more methods of preparation, such as: – mixing – pulverization – decantation – filtration – extraction – centrifugation – dilution • Proper application of the method of preparation • Assessment of the quality of processing • Application of appropriate corrective measures, if necessary
5. To prepare samples for microscopic examination.	• Proper preparation of samples for wet examination • Proper preparation of a stained smear • Assessment of the quality of preparation • Application of appropriate corrective measures, if necessary
6. To distribute samples.	• Proper aliquoting of samples into appropriate containers • Proper dispatching of samples to appropriate areas • Respect for the prioritization of analyses • Proper handling of samples to be sent outside the laboratory, respecting: – packaging standards – labelling standards – the requisition – regulations on the transport of hazardous substances
7. To store samples.	• Appropriate choice of method of conservation • Proper storage of samples • Proper documentation of specimen storage information

Code: 01EX

Objective

Statement of the Competency

To use analytical instruments.

Standard

Achievement Context

- Working in a biomedical laboratory on a sample or batch of samples
- Based on instructions and protocols
- With biological samples
- Using products and materials required; appropriate equipment, such as instruments based on the principles of photometry, electrochemistry, osmometry, electrophoresis on a support medium, and high-pressure liquid chromatography; a computer and appropriate software; and the documentation required
- Respecting health and safety regulations, and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO)
- In collaboration with other health care professionals and with people responsible for maintenance and repair of the instruments
- Demonstrating professionalism and a sense of responsibility
- Showing concern for quality and efficiency

Elements of the Competency	**Performance Criteria**
1. To interpret instructions for operating an instrument.	• Correct interpretation of instrument diagrams • Correct interpretation of instructions • Understanding of processes related to automated instruments
2. To prepare the instrument.	• Precise selection of the analysis parameters • Proper arrangement of reagents and solutions
3. To test the reliability of the instrument.	• Precise calibration of instrument • Rigorous application of a quality control program • Consideration of the equipment limitations • Correct interpretation of causes of interference

	Code: 01EX
4. To operate the instrument.	• Proper arrangement of samples to be analyzed • Accurate recording of data in the automated system connected to the instrument, if appropriate • Rigorous observance of the operation protocol • Appropriate use of computer equipment
5. To maintain the instrument.	• Rigorous inspection of components of the instrument • Observance of manufacturer's instructions • Careful maintenance • Accurate recording of work in maintenance record • Careful cleaning of instrument

Code: 01EY

Objective — *Standard*

Statement of the Competency

To interpret the results of a biomedical analysis in terms of human pathophysiology.

Achievement Context

- Working in a biomedical laboratory
- Using results of clinical biochemistry, micro-biology, hematology, hemostasis and immuno-hematology analyses
- Using the documentation required and clinical information
- In collaboration with other health care professionals
- Demonstrating professionalism and a sense of responsibility
- Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize

Elements of the Competency	**Performance Criteria**
1. To recognize a normal result.	• Proper comparison of result with reference values • Precise correlation of result with clinical information
2. To identify an implausible result.	• Correct identification of an implausible result, taking into account: – reference values – other laboratory data – clinical information – anatomical and physiological data • Correct identification of the causes of interference • Appropriate choice of corrective action • Appropriate follow-up
3. To identify a clinically significant result.	• Correct identification of clinically significant and clinically insignificant results, taking into account: – reference values – other laboratory data – clinical information – anatomical and physiological data • Appropriate follow-up

	Code: 01EY
4. To identify abnormal results requiring investigation.	• Correct identification of abnormal results requiring investigation • Proper application of an investigation protocol • Correct assessment of results
5. To identify a critical result.	• Correct identification of a critical result, taking into account: – reference values – critical values – other laboratory data – clinical information – anatomical and physiological data • Appropriate follow-up

Code: 01EZ

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To prepare tissues for anatomical examination.	• Working in a biomedical laboratory, in normal or emergency situations, during the day, individually or in a team, with a single sample or a batch of samples. • Based on specific requests and protocols • With human specimens • Using products and materials required; appropriate equipment, such as a tissue processor, a decalcification device, a microtome, an embedding system, a stainer, a mounting device, microscopes, a cryotome, a microwave oven and an automatic sharpener; routine analytical instruments; a computer and appropriate software; and the documentation required • Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); recommendations for the management of hazardous substances in pathology made by the Groupe sectoriel d'expertise sur la gestion et le recyclage des matières dangereuses en pathologie du ministère de la Santé et des Services sociaux; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism and a sense of responsibility • Showing a concern for quality and efficiency
Elements of the Competency	**Performance Criteria**
1. To receive specimens.	• Correct assessment of conformity of specimens with requests • Proper entry of requests in the information system • Accurate description of surgical and autopsy specimens by macroscopic examination • Appropriate handling of specimens from: – autopsies – surgical procedures – collection of representative samples • Establishment of appropriate priorities

	Code: 01EZ
2. To fix specimens.	• Appropriate choice of fixatives • Proper preparation of fixatives • Effective control of parameters influencing fixation • Correct assessment of the quality of fixation • Application of appropriate corrective measures, if necessary
3. To decalcify specimens.	• Proper application of decalcification technique when the nature of specimens requires it • Adequate control of the end point of decalcification
4. To prepare routine histological sections.	• Effective use of a tissue processor, taking into account: – reagents – time constraints – desired quality • Proper embedding of tissues, taking into account: – embedding system – support medium – orientation of the piece – labelling • Precise microtomy of tissue blocks • Proper floating and drying of histological sections • Proper mounting of histological sections • Proper use of cryotomy techniques • Efficient time management in emergencies • Assessment of the quality of preparation • Application of appropriate corrective measures, if necessary
5. To show tissues and some of their components.	• Proper preparation of solutions and reagents needed for staining • Proper staining of tissues, using routine techniques • Highlighting of specific tissue or cellular elements through proper application of special staining techniques • Correct assessment of staining quality • Application of appropriate corrective measures, if necessary
6. To show antigens.	• Appropriate choice of fixative • Proper application of immunological techniques • Proper application of techniques for showing tissue antigens

	Code: 01EZ
7. To maintain equipment.	• Careful maintenance of microtome knives • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Proper disinfection of cryostat
8. To manage materials.	• Proper preparation of specimens for sending out • Observance of standards for management of hazardous substances • Proper storage of materials, specimens and waste

Code: 01F0

Objective	***Standard***
Statement of the Competency	**Achievement Context**
To perform analyses in hemostasis.	• Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team, with a single sample or a batch of samples • Based on specific requests and protocols • With blood samples • Using the products and materials required; appropriate equipment, such as an automated clot detection instrument and an instrument for analyzing platelet function; routine analytical instruments; a computer and appropriate software; and the documentation required • Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standard rules of the Ordre professionnel des technologistes médicaux du Québec concerning hemostasis; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism and a sense of responsibility • Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize
Elements of the Competency	**Performance Criteria**
1. To plan the work.	• Correct interpretation of instructions • Observance of conservation period for samples • Establishment of appropriate priorities
2. To prepare materials.	• Proper preparation of: – solutions – reagents – instruments • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Rigorous application of a quality control program

	Code: 01F0
3. To prepare samples.	• Proper preparation of samples • Proper handling of fresh and frozen samples • Verification of conformity of samples to specific hemostasis criteria
4. To analyze samples.	• Accurate determination of: – bleeding time – platelet count • Accurate determination of: – prothrombin time (Quick) – activated partial thromboplastin time – thrombin time – using an automated clot detection device • Correct measurement of: – fibrinogen – other clotting factors – principal inhibitors of clotting • Precise measurement of fibrinogen or fibrin breakdown products by latex agglutination and automated methods • Accurate detection of antiphospholipid antibodies
5. To interpret results.	• Rigorous monitoring of quality control results • Appropriate processing of data • Validation of results with respect to: – technique used – pathophysiology – anticoagulant therapy • Appropriate monitoring as needed
6. To produce a report.	• Accurate recording of results • Legible signature, initials or personal identification code
7. To communicate results.	• Choice of appropriate means of reporting • Appropriate use of means of reporting • Respect for confidentiality
8. To store materials.	• Proper cleaning of equipment, instruments and work areas • Proper storage of materials, samples and waste

Code: 01SY

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To apply molecular biology techniques.	• Working in a molecular biology laboratory • Based on instructions and protocols • With biological samples • Using the products and materials required; appropriate equipment, such as a high-speed microcentrifuge, electrophoresis apparatus, a PCR (DNA amplification) device, a Polaroid camera, a refrigerator, freezers (-30° and -80°) and sterilization equipment; a computer and appropriate software and the documentation required • Respecting sterile conditions; health and safety regulations; and Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO) • Paying attention to precision, details and efficiency
Elements of the Competency	**Performance Criteria**
1. To extract DNA.	• Correct preparation of reagents by: – precise calculation of concentrations – proper use of stock solutions – proper preservation of prepared media • Proper cell preparation • Correct use of calibrated micropipettes • Careful extraction of DNA taking into account its physicochemical characteristics • Appropriate DNA dephosphorylation and denaturation
2. To perform DNA hybridization.	• Appropriate choice, labelling and preparation of probes • Proper preparation of the DNA and restriction enzymes • Proper DNA digestion by restriction enzymes • Careful electrophoresis of the DNA in a gel medium • Correct transfer of the DNA to a membrane using various methods • Proper hybridization using probes • Proper detection of the hybridization

	Code: 01SY
3. To perform DNA amplification.	• Proper preparation of the DNA and amplification chemicals • Appropriate amplification of the DNA fragment • Proper use of the PCR apparatus for identification • Standard use and maintenance of the apparatus • Proper interpretation of amplification results

Code: 01F2

Objective

Statement of the Competency

To perform analyses in hematology.

Standard

Achievement Context

- Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team, with a single sample or a batch of samples
- Based on specific requests and protocols
- With blood samples
- Using the products and materials required; appropriate equipment, such as an automated cell counter, microhematocrit centrifuges and microscopes; routine analytical instruments; a computer and appropriate software; and the documentation required
- Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standard rules of the Ordre professionnel des technologistes médicaux du Québec; and confidentiality
- In collaboration with other health care professionals
- Demonstrating professionalism and a sense of responsibility
- Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize

Elements of the Competency	**Performance Criteria**
1. To plan the work.	• Correct interpretation of instructions • Observance of conservation period for samples • Establishment of appropriate priorities
2. To prepare materials.	• Appropriate preparation of: – reagents – instruments – solutions – stains • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Rigorous application of a quality control program

	Code: 01F2
3. To prepare samples.	• Proper preparation of samples • Observation of the specific conditions for hematology samples
4. To analyze samples.	• Proper handling of a batch of blood samples in order to do a complete blood count • Exact count of white blood cells and platelets, using a microscope and a blood cell counter • Estimation of the number of white blood cells and platelets in a blood smear under a microscope • Critical examination of the morphology of red and white blood cells and platelets using a microscope • Accurate determination of normal and abnormal white cell differentials under a microscope • Exact count of reticulocytes, using a manual technique • Proper analysis of biological fluids according to appearance, cell count and differential • Correct determination of sedimentation rate • Proper application of special hematology tests for diagnosis of anemias, leukemias and other hematological disorders
5. To interpret results.	• Rigorous monitoring of quality control results • Appropriate processing of data • Validation of results with respect to: – technique used – pathophysiology • Appropriate follow-up when required
6. To produce a report.	• Exact recording of results • Legible signature, initials or personal identification code
7. To communicate results.	• Choice of appropriate means of reporting • Appropriate use of means of reporting • Respect for confidentiality
8. To put away materials.	• Proper cleaning of equipment, instruments and work areas • Proper storage of materials, samples and waste

Code: 01F3

Objective

Statement of the Competency

To perform analyses in clinical biochemistry.

Standard

Achievement Context

- Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team, with a single sample or a batch of samples.
- Based on specific requests and protocols
- With samples
- Using the products and materials required; appropriate equipment, such as a discrete analyzer, a blood gas analyzer, a dipstick reader, an instrument for measuring vitamins and hormones, an instrument for measuring toxic substances and medications, and an instrument for measuring electrolytes; instruments for immunological techniques; routine analytical instruments; a computer and appropriate software; and the documentation required
- Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standard rules of the Ordre professionnel des technologistes médicaux du Québec; and confidentiality
- In collaboration with other health care professionals
- Demonstrating professionalism and a sense of responsibility
- Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize

Elements of the Competency	**Performance Criteria**
1. To plan the work.	• Correct interpretation of instructions • Observance of conservation times for samples • Establishment of appropriate priorities

	Code: 01F3
2. To prepare materials.	• Appropriate preparation of: – reagents – instruments – solutions • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Rigorous application of a quality control program
3. To prepare samples.	• Proper preparation of samples • Proper handling of fresh and frozen samples • Observance of the specific conditions for samples for biochemical analyses
4. To analyze samples.	• Accurate identification of clinically significant biochemical constituents • Precise measurement of: – blood gases and pH – certain electrolytes – osmolality – activity of certain enzymes – constituents of biological fluids • Proper examination of urine (screening and microscopic) and stools • Proper pregnancy testing, using blood and urine • Precise measurement of antibodies, vitamins hormones and tumour markers • Qualitative or quantitative determination of toxic substances and medications
5. To interpret results.	• Rigorous monitoring of quality control results • Proper processing of data • Validation of results with respect to: – technique used – pathophysiology – medication • Appropriate follow-up when required
6. To produce a report.	• Accurate recording of results • Legible signature, initials or personal identification code
7. To communicate results.	• Choice of appropriate means of reporting • Appropriate use of means of reporting • Respect for confidentiality
8. To put away materials.	• Proper cleaning of equipment, instruments and work areas • Proper storage of materials, samples and waste

Code: 01F4

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To perform analyses in medical microbiology.	• Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team, with a single sample or a batch of samples • Based on specific requests and protocols • With biological samples • Using the products and materials required; appropriate equipment, such as heat chambers, an autoclave, an incubator and gas pressure gauge, a biochemical identification system and antibiotics sensitivity tests on microplates, microscopes; routine analytical instruments; a computer and appropriate software; and the documentation required • Respecting sterile conditions; health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standard rules of the Ordre professionnel des technologistes médicaux du Québec and the National Committee for Clinical Laboratory Standards; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism and a sense of responsibility • Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize
Elements of the Competency	**Performance Criteria**
1. To plan the work.	• Correct interpretation of instructions • Observance of conservation times for samples • Establishment of appropriate priorities

	Code: 01F4
2. To prepare materials.	• Appropriate preparation of: – reagents – instruments – solutions – culture media • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Rigorous application of a quality control program
3. To prepare samples.	• Proper preparation of samples • Observance of the specific conditions for microbiology samples • Preparation of samples for wet examination and stained smears
4. To analyze samples.	• Careful examination of samples under micro-scope: – wet preparation – by differential staining – using other direct techniques • Appropriate choice of plating media and environmental growth conditions based on source of sample: – upper and lower respiratory tract – conjunctival secretions – ears – pus and various serous liquids – urogenital secretions – vaginal secretions – urine – stools and rectal swabs – blood – biological fluids • Correct presumptive identification of bacterial cultures through macroscopic and microscopic examinations, counts and other specific tests • Correct identification of bacteria, using biochemical, manual or automated techniques • Correct identification of bacteria and certain viruses, using immunological and molecular biological techniques • Effective application of antibiotic sensitivity tests • Effective testing and correct identification of fungi and yeasts of clinical interest • Effective testing and correct identification of parasites in biological samples • Proper handling of certain pathogenic microorganisms

	Code: 01F4
5. To interpret results.	• Rigorous monitoring of quality control results • Proper processing of data • Validation of results with respect to: – technique used – pathophysiology • Correct interpretation of the pathogenicity of microorganisms, taking into account the source of the sample • Appropriate follow-up, if required
6. To produce a report.	• Exact recording of results • Legible signature, initials or personal identification code
7. To communicate results.	• Choice of appropriate means of reporting • Appropriate use of means of reporting • Respect for confidentiality
8. To put away materials.	• Proper cleaning of equipment, instruments and work areas • Proper storage of materials, samples and waste

Code: 01F5

Objective

Statement of the Competency

To perform analyses in transfusion science.

Standard

Achievement Context

- Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team, with a single sample or a batch of samples
- Based on specific requests and protocols
- With blood samples
- Using the products and materials required; appropriate equipment, such as materials and reagents for tube techniques and gel techniques; routine analytical instruments; a computer and appropriate software; and the documentation required
- Respecting health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standards of the Canadian Society for Transfusion Medicine; and confidentiality
- In collaboration with other health care professionals
- Demonstrating professionalism and a sense of responsibility
- Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize

Elements of the Competency	**Performance Criteria**
1. To plan the work.	• Correct interpretation of instructions • Observance of conservation times for samples • Establishment of appropriate priorities
2. To prepare materials.	• Appropriate preparation of: – reagents – instruments – solutions • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Rigorous application of a quality control program

	Code: 01F5
3. To prepare samples.	• Proper preparation of samples • Observance of the specific conditions for immunohematology samples
4. To analyze samples.	• Accurate determination of erythrocytic phenotypes in ABO, Rhesus and other systems • Correct showing and identification of antibodies bound to erythrocytes or present in the serum, using media that enhance agglutination • Proper application of the following techniques: – compatibility tests – titration of antibodies – elution of antibodies – absorption of antibodies • Speedy performance of urgent analyses
5. To interpret results.	• Rigorous monitoring of quality control results • Accurate reading of agglutination or hemolysis reactions • Proper processing of data • Validation of results with respect to: – technique used – pathophysiology • Appropriate follow-up, if required
6. To produce a report.	• Exact recording of results • Legible signature, initials or personal identification code
7. To communicate results.	• Choice of appropriate means of reporting • Appropriate use of means of reporting • Respect for confidentiality
8. To put away materials.	• Proper cleaning of equipment, instruments and work areas • Proper storage of materials, samples and waste

Code: 002Q

Objective

Statement of the Competency

To prepare blood products.

Standard

Achievement Context

- Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team
- Based on prescriptions, protocols and directives of the Québec blood supply management system
- Using the products and materials required; appropriate equipment; a computer and appropriate software; and the documentation required
- Respecting sterile conditions; health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standards of the Canadian Society for Transfusion Medicine; and confidentiality
- In collaboration with other health care professionals
- Demonstrating professionalism and a sense of responsibility
- Showing concern for quality and efficiency

Elements of the Competency	Performance Criteria
1. To select blood products.	• Correct interpretation of the request: – whole blood – packed red cells – plasma – platelet concentrate – cryoprecipitate – pediatric packs – plasma fractionation products – blood substitute • Proper description of different types of donations: – autologous – allogeneic • Appropriate choice of product based on the prescribed request, the availability of the product, and the client's blood group

	Code: 002Q
2. To prepare blood and blood products and materials needed for transfusions.	• Rigorous observance of product preparation methods • Accurate mixing of substances in order to complete the preparation of a blood product, according to a prescription • Proper labelling of blood products • Appropriate choice of transfusion equipment
3. To manage the conservation of blood products.	• Verification of conformity of the product with the request • Correct entry of products in the information system • Orderly classification of blood products • Observance of storage procedures • Correct determination of traceability of a blood product: – from the product number to the recipient – from the recipient to the product number
4. To maintain the supply of blood products.	• Appropriate order of blood products from the transfusion medicine department • Consideration of requirements specific to products such as: – CMV-negative – HLA-compatible – irradiation – specific phenotypes – when ordering products from the transfusion medicine department • Return of products to the transfusion medicine department in accordance with the times and conditions prescribed, if necessary

Code: 01F7

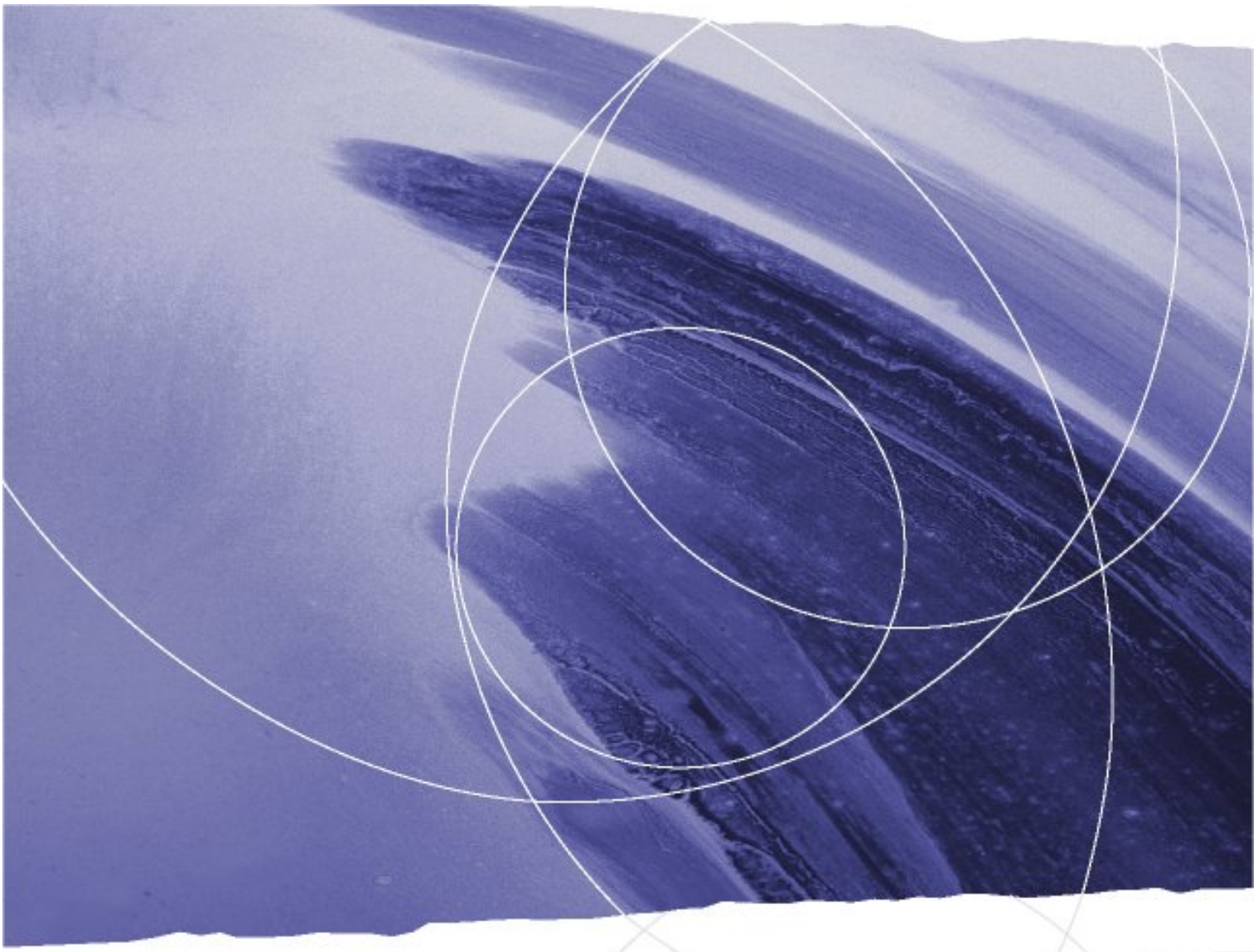
Objective	***Standard***
Statement of the Competency	**Achievement Context**
To solve problems related to transfusions.	• Working in a biomedical laboratory, in normal or emergency situations, during the day, evening or night, in the context of routine or on-call service, individually or in a team • Based on specific requests, protocols, and directives of the Québec blood supply management system • With blood samples • Using the products and materials required; appropriate equipment; a computer and appropriate software; the documentation required • Respecting sterile conditions; health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); standards of the Canadian Society for Transfusion Medicine; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism and a sense of responsibility • Showing a concern for quality and efficiency, a sense of observation and an ability to analyze and to synthesize
Elements of the Competency	**Performance Criteria**
1. To identify a technical problem.	• Demonstration of a discrepancy between the forward and reverse grouping of the ABO group • Correct interpretation of: – data from the laboratory testing for hemolytic disease of the newborn – situations that can lead to a transfusion reaction – analyses for autoimmune hemolytic disease – positive results of tests for the presence of antibodies related to human pathophysiology

	Code: 01F7
2. To determine the solution.	• Correct determination of the causes of the problem • Determination of actions to take to solve the problem • Proper validation of solution with physician and other health care professionals, if required
3. To apply the solution.	• Proper performance of tests needed to solve the problem
4. To evaluate the result.	• Critical evaluation of the result • Appropriate follow-up

Code: 002T

Objective	*Standard*
Statement of the Competency	**Achievement Context**
To perform analyses outside a laboratory.	• Working with a client in a test centre, outpatient clinic, screening clinic, hospital or home • Working individually or in a team • Based on medical instructions, specific requests and protocols • Using the products and materials required; appropriate equipment, such as portable devices, automated analyzers and kits; a computer and appropriate software; the documentation required • Respecting sterile conditions; health and safety regulations; Good Laboratory Practices (GLP) or standards of the International Organization for Standardization (ISO); the *Professional Code*; standard rules of the Ordre professionnel des technologistes médicaux du Québec; and confidentiality • In collaboration with other health care professionals • Demonstrating professionalism, a sense of responsibility and an ability to manage stress • Showing concern for quality and efficiency • Taking appropriate action in emergencies
Elements of the Competency	**Performance Criteria**
1. To prepare materials.	• Appropriate preparation of: – reagents – materials and instruments • Careful testing of instruments • Appropriate corrective action for minor problems in the operation of instruments • Rigorous application of a quality control program

	Code: 002T
2. To greet the client.	• Courteous greeting • Verification of client's identity • Clear communication of information • Verification with client of requirements for analyses • Consent obtained from client • Proper preparation of requisitions based on instructions
3. To perform the analyses.	• Proper performance of the most common analyses done outside the laboratory • Proper use of equipment for analyses
4. To produce a report.	• Correct interpretation of results • Exact recording of results • Clear communication of results
5. To follow up with the client.	• Clear explanation of instructions. • Appropriate communication of technical information, including the use of a portable automated analyzer or kit • Courteous leave-taking



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