



Culinary Skills Program Standard

**The approved program standard for the
Culinary Skills program of instruction
leading to an Ontario College Certificate
delivered by Ontario Colleges of Applied
Arts and Technology (MTCU funding code
43107)**

Ministry of Advanced Education and Skills Development
August 2016

Permission to Reproduce

Permission is hereby granted to the following institutions to reproduce this document, in whole or in part, in print or by electronic means, for the following specific purposes, subject to the conditions that follow.

1. By an Ontario college of applied arts and technology for the purposes of implementation of the program standard within a college program, including for the purpose of informing students, potential students, program advisory committees or others about programs of study.
2. By an educational institution or school, for the purpose of informing prospective college students about programs of study at Ontario colleges of applied arts and technology.

Conditions:

1. Every reproduction must be marked “© 2016, Queen’s Printer for Ontario” at the beginning of the document or any part of it that is reproduced.
2. No other uses may be made of the document.
3. The document may not be reproduced for sale.
4. The Ministry may revoke the permission to reproduce at any time.

For permission to copy this document, in whole or in part, for other purposes or by other institutions, please contact

Ministry of Advanced Education and Skills Development
Programs Branch, Program Standards and Evaluation Unit
23rd floor, Mowat Block
900 Bay Street
Toronto, Ontario
M7A 1L2

Or by [e mail](#):

Inquiries regarding specific Culinary Skills (Ontario College Certificate) programs offered by colleges of applied arts and technology in Ontario should be directed to the relevant college.

This publication is available on the [Ministry's Website](#).

© 2016, Queen’s Printer for Ontario

ISBN 978-1-4606-8590-7

Acknowledgements

The Ministry of Advanced Education and Skills Development acknowledges with thanks the significant contribution of the many individuals and organizations who participated in the development of this program standard. In particular, the Ministry of Advanced Education and Skills Development would like to acknowledge the important roles of

- all individuals and organizations who participated in the consultations;
- the faculty, co-ordinators and deans of Culinary Skills (Ontario College Certificate) programs for their assistance throughout the project,
- Louise Campagna and the consultants at Laridae Communications, Laura Gaughan, Janet Honsberger and Wendy Morgan, and who led the development of the vocational standard.

Table of Contents

I. Introduction	1
Development of System-Wide Program Standards.....	1
Program Standards.....	1
The Expression of Program Standards as Vocational Learning Outcomes.....	2
The Presentation of the Vocational Learning Outcomes.....	2
The Development of a Program Standard.....	2
Updating the Program Standard	3
II. Vocational Standard	4
Preamble.....	4
Synopsis of the Vocational Learning Outcomes.....	6
The Vocational Learning Outcomes.....	7
Glossary.....	17
III. Essential Employability Skills	18
Context.....	18
Skill Categories.....	18
Application and Implementation.....	19
IV. General Education Requirement	21
Requirement	21
Purpose.....	21
Themes.....	22

I. Introduction

This document is the Program Standard for the Culinary Skills program of instruction leading to an Ontario College Certificate delivered by Ontario colleges of applied arts and technology (MTCU funding code 43107).

Development of System-Wide Program Standards

In 1993, the Government of Ontario initiated program standards development with the objectives of bringing a greater degree of consistency to college programming offered across the province, broadening the focus of college programs to ensure graduates have the skills to be flexible and to continue to learn and adapt, and providing public accountability for the quality and relevance of college programs.

The Program Standards and Evaluation Unit of the Ministry of Advanced Education and Skills Development have responsibility for the development, review and approval of system-wide standards for programs of instruction at Ontario colleges of applied arts and technology.

Program Standards

Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following elements:

- **Vocational standard** (the vocationally specific learning outcomes which apply to the program of instruction in question),
- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program.

Individual colleges of applied arts and technology offering the program of instruction determine the specific program structure, delivery methods and other curriculum matters to be used in assisting students to achieve the outcomes articulated in the standard. Individual colleges also determine whether additional local learning outcomes will be required to reflect specific local needs and/or interests.

The Expression of Program Standards as Vocational Learning Outcomes

Vocational learning outcomes represent culminating demonstrations of learning and achievement. They are not simply a listing of discrete skills, nor broad statements of knowledge and comprehension. In addition, vocational learning outcomes are interrelated and cannot be viewed in isolation of one another. As such, they should be viewed as a comprehensive whole. They describe performances that demonstrate that significant integrated learning by graduates of the program has been achieved and verified.

Expressing standards as vocational learning outcomes ensures consistency in the outcomes for program graduates, while leaving to the discretion of individual colleges, curriculum matters such as the specific program structure and delivery methods.

The Presentation of the Vocational Learning Outcomes

The **vocational learning outcome** statements set out the culminating demonstration of learning and achievement that the student must reliably demonstrate before graduation.

The **elements of the performance** for each outcome define and clarify the level and quality of performance necessary to meet the requirements of the vocational learning outcome. However, it is the performance of the vocational learning outcome itself on which students are evaluated. The elements of performance are indicators of the means by which the student may proceed to satisfactory performance of the vocational learning outcome. The elements of performance do not stand alone but rather in reference to the vocational learning outcome of which they form a part.

The Development of a Program Standard

In establishing the standards development initiative, the Government determined that all postsecondary programs of instruction should include vocational skills coupled with a broader set of essential skills. This combination is considered critical to ensuring that college graduates have the skills required to be successful both upon graduation from the college program and throughout their working and personal lives.

A program standard is developed through a broad consultation process involving a range of stakeholders with a direct interest in the program area, including employers, professional associations, universities, secondary schools and program graduates working in the field, in addition to students, faculty and administrators at the colleges themselves. It represents a consensus of

participating stakeholders on the essential learning that all program graduates should have achieved.

Updating the Program Standard

The Ministry of Advanced Education and Skills Development will undertake regular reviews of the vocational learning outcomes for this program to ensure that the Culinary Skills (Ontario College Certificate) Program Standard remains appropriate and relevant to the needs of students and employers across the Province of Ontario. To confirm that this document is the most up-to-date release, please contact the Ministry of Advanced Education and Skills Development at the address or email address noted on the inside cover page.

II. Vocational Standard

All graduates of Culinary Skills programs have achieved the ten vocational learning outcomes (VLOs) listed in the following pages, in addition to achieving the essential employability skills (EES) learning outcomes and meeting the general education (GE) requirement.

Preamble

Graduates of Culinary Skills programs are able to work in a range of specialized, fast-paced hospitality and food service establishments. They work in accordance with relevant industry, organization and legal standards and regulations, as well as industry best practices for health, safety, sanitation, quality assurance and customer service.

Program graduates perform effectively as members of food and beverage service teams. They are prepared for employment opportunities in a range of settings including: restaurants, bakeries, hotels, spas, motels, resorts, cruise ships, hospitals, industrial kitchens, long-term care institutions and catering companies

Upon completion of the Culinary Skills program, graduates are able to prepare and present food using a range of classical and contemporary techniques, adhering to health, safety, sanitation and food handling regulations and safe kitchen operations. They support the development of menu options that respond to a range of nutritional needs and preferences and address modifications for special diets, food allergies and intolerances as required. Graduates also demonstrate proficiency in the use of current and emerging technologies in the preparation and presentation of food in a variety of settings, adapting effectively as required. Graduates are considerate of the need to be environmentally responsible and are able to apply basic knowledge of sustainability*, ethical and local food sourcing, and food security to food preparation and kitchen management. They are also able to apply fundamental business principles and costing and control practices to promote fiscally responsible operations.

As new culinary techniques, regulations and practices emerge, program graduates are able to keep current by developing strategies for continuous personal and professional learning.

For graduates wishing to pursue further educational qualifications there are continuing education opportunities. Graduates should contact individual colleges and universities and Associations (or Canadian Culinary Institution) for further details.

Endnote: The Ontario Council on Articulation and Transfer (ONCAT) maintains the provincial postsecondary credit transfer portal, ONTransfer and the [Ontario Postsecondary Transfer Guide](#) (OPTG).

Synopsis of the Vocational Learning Outcomes

Culinary Skills

The graduate has reliably demonstrated the ability to

1. provide fundamental culinary preparation and presentation for a variety of food service environments using a range of classical and contemporary techniques.
2. apply basic food and bake science to food preparation to create a desired end product.
3. contribute to and monitor adherence of others to the provision of a well-maintained kitchen environment and to the service of food and beverage products that are free from harmful bacteria or other contaminants, adhering to health, safety, sanitation and food handling regulations.
4. ensure the safe operation of the kitchen and all aspects of food preparation to promote healthy work spaces and the responsible, efficient use of resources.
5. support the development of menu options that reflect knowledge of nutrition and food ingredients, promote general health and well-being, respond to a range of nutritional needs and preferences and address modifications for special diets, food allergies and intolerances, as required.
6. apply fundamental business principles and recognized industry costing and control practices to food service operations to promote a fiscally responsible operation
7. apply basic knowledge of sustainability*, ethical and local food sourcing, and food security to food preparation and kitchen management, recognizing the potential impacts on food production, consumer choice and operations within the food service industry.
8. use technology, including contemporary kitchen equipment, for food production and promotion.
9. Perform effectively as a member of a food and beverage preparation and service team and contribute to the success of a food-service operation by applying self-management and interpersonal skills.
10. develop strategies for continuous personal and professional learning to ensure currency with and responsiveness to emerging culinary techniques, regulations, and practices in the food service industry.

*See Glossary

Note: The learning outcomes have been numbered as a point of reference; numbering does not imply prioritization, sequencing, nor weighting of significance.

The Vocational Learning Outcomes

1. The graduate has reliably demonstrated the ability to provide fundamental culinary preparation and presentation for a variety of food service environments using a range of classical and contemporary techniques.

Elements of the Performance

- Apply techniques of basic food preparation for both small and large quantity food preparation in institutional and hospitality enterprise settings
- Follow specifications and quality standards
- Trim, de-bone, and portion meat, fish, and poultry
- Use appropriate cooking and cold-food preparation methods
- Set-up and maintain a clean and orderly work station
- Apply baking techniques to prepare desserts, cakes, pastries, and breads
- Select from contemporary and traditional garnishes
- Apply knowledge of the use of alcoholic and non-alcoholic beverages as ingredients in food preparation
- Apply knowledge of colour and design skills to food presentation
- Apply acquired culinary knowledge and skills to a variety of tasks and in a variety of food service environments
- Apply garde-manger skills to buffets and other culinary displays
- Decorate baked products

2. The graduate has reliably demonstrated the ability to

apply basic food and bake science to food preparation to create a desired end product.

Elements of the Performance

- Apply knowledge of the effects of heat and cold on ingredients
- Apply knowledge of how various ingredients interact
- Use theoretical knowledge to prevent or solve food preparation problems
- Select ingredients appropriate to the desired end product
- Match cooking methods to various ingredients and desired end product
- Use appropriate national and international culinary terminology
- Apply basic baking techniques to prepare desserts, pastries, breads and other baked products
- Use national and international culinary terminology

3. The graduate has reliably demonstrated the ability to

contribute to and monitor adherence of others to the provision of a well-maintained kitchen environment and to the service of food and beverage products that are free from harmful bacteria or other contaminants, adhering to health, safety, sanitation and food handling regulations.

Elements of the Performance

- Apply a preventative approach to safety, sanitation, and maintenance of facilities, equipment, and supplies
- Adhere to the principles of the Hazard Analysis Critical Control Point System* (H.A.C.C.P.)
- Follow personal hygiene and grooming standards appropriate to the industry
- Select the correct cleaning equipment, supplies, and materials; apply sanitation principles; and follow established cleaning instructions
- Follow established procedures for monitoring and controlling inventory of equipment and supplies including Workplace Hazardous Materials Information System* (W.H.M.I.S.) regulations
- Act appropriately in emergency situations by complying with emergency planning policy and procedures

4. The graduate has reliably demonstrated the ability to

ensure the safe operation of the kitchen and all aspects of food preparation to promote healthy work spaces and the responsible, efficient use of resources.

Elements of the Performance

- Select from a variety of menu concepts to meet a range of food service opportunities
- Apply knowledge of weights and measures and use specialized calculations
- Maintain required records
- Apply basic principles of purchasing to select suppliers
- Cooperate with other departments
- Follow established human resources policies and procedures including non-discrimination and equity requirements
- Comply with the Ontario Human Rights Code and workplace violence and harassment policies as they apply to the culinary industry.
- Complete all work in compliance with relevant law and regulations

5. The graduate has reliably demonstrated the ability to

support the development of menu options that reflect knowledge of nutrition and food ingredients, promote general health and well-being, respond to a range of nutritional needs and preferences and address modifications for special diets, food allergies and intolerances, as required.

Elements of the Performance

- Apply nutritional principles to select methods of cooking and storage
- Use resources such as Canada's Food Guide as a tool in menu planning, establishing portion sizes, and promoting healthy eating choices and habits
- Describe menu selections appropriate to specific health or life-stage needs
- Identify potential dangers to customers caused by allergic reactions to ingredients and how to follow established risk-reduction strategies

6. The graduate has reliably demonstrated the ability to

apply fundamental business principles and recognized industry costing and control practices to food service operations to promote a fiscally responsible operation.

Elements of the Performance

- Recognize the impact of labour, waste control and food costs on profit
- Determine selling prices using a variety of methods
- Support the maintenance of accurate records of purchases, including the use of information technology such as specialized software
- Comply with departmental financial objectives in menu planning
- Identify individual contribution toward profitability

7. The graduate has reliably demonstrated the ability to

apply basic knowledge of sustainability*, ethical and local food sourcing, and food security to food preparation and kitchen management, recognizing the potential impacts on food production, consumer choice and operations within the food service industry.

Elements of the Performance

- Select food and other supplies based on the environmental sustainability of production and transportation methods
- Source foods based on criteria including ethical standards, organic production methods, locally sourced, and non-GMO, as required or to meet consumer preferences
- Plan food preparation and service based on dining concepts related to sustainability and localization of sources, such as nose-to-tail and root-to-leaf.
- Apply sustainability principles to ensure resource conservation and minimize environmental harm

8. The graduate has reliably demonstrated the ability to use technology, including contemporary kitchen equipment, for food production and promotion.

Elements of the Performance

- Use a range of technologies present in contemporary kitchen appliances
- Use appropriate technology in food preparation, including for collaboration, reference and promotional purposes
- Use a variety of social media platforms to market food service

9. The graduate has reliably demonstrated the ability to

perform effectively as a member of a food and beverage preparation and service team and contribute to the success of a food-service operation by applying self-management and interpersonal skills.

Elements of the Performance

- Accept instruction and work efficiently with minimal supervision
- Apply knowledge of group dynamics to contribute to team building and operations
- Participate effectively in meetings
- Explain the benefits of equality and cultural diversity in the workplace
- Employ interpersonal skills in dealing with customers and co-workers
- Manage personal stress to remain productive and meet deadlines
- Adapt performance to meet employer expectations of an entry-level cook
- Identify the importance of good quality food and beverage service
- Take into account the impact of the cook's role on food and beverage service
- Complete work in a manner that enhances collaboration among the various members of the food and beverage service team
- Participate effectively in the provision of services for special events
- Employ restraint and good judgment when dealing with interpersonal conflict

10. The graduate has reliably demonstrated the ability to

develop strategies for continuous personal and professional learning to ensure currency with and responsiveness to emerging culinary techniques, regulations, and practices in the food service industry.

Elements of the Performance

- Research how to attain professional certifications
- Identify the role of the food service sector in the Tourism and Hospitality industry and institutional settings such as hospitals and long-term care facilities.
- Solicit and use constructive feedback in the evaluation of knowledge and skills
- Identify areas for ongoing growth and development, including development of leadership and management skills
- Incorporate various methods of increasing professional knowledge and skills into a professional development plan
- Recognize the value of membership in professional associations
- Research career opportunities, set realistic employment and career goals, and develop and review a career plan
- Keep abreast of relevant developments in technology and other culinary-related areas
- Practice effective time management and set and achieve realistic goals
- Be informed of issues affecting the Tourism and Hospitality Industry and institutional food-service settings, including changes in legislation and the impact of economic or social change
- Develop plans and identify resources for lifelong learning

Glossary

Hazard Analysis Critical Control Point System (H.A.C.C.P.) – H. A.C.C.P. is a systematic preventive approach to food safety from biological, chemical, and physical hazards in production processes that can cause the finished product to be unsafe, and designs measurements to reduce these risks to a safe level.

Workplace Hazardous Materials Information System (WHMIS) – WHIMIS is a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, material safety data sheets (MSDS) and worker education programs.

Sustainability – Sustainability encompasses the ethical ideal that calls for optimizing the long-term carrying capacity and vitality of three interdependent systems--environmental, social, and economic. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

III. Essential Employability Skills

All graduates of the Culinary Skills program of instruction must have reliably demonstrated the essential employability skills learning outcomes listed on the following pages, in addition to achieving the vocational learning outcomes and meeting the general education requirement.

Context

Essential Employability Skills (EES) are skills that, regardless of a student's program or discipline, are critical for success in the workplace, in day-to-day living and for lifelong learning.

The teaching and attainment of these EES for students in, and graduates from, Ontario's colleges of applied arts and technology are anchored in a set of three fundamental assumptions:

- these skills are important for every adult to function successfully in society today;
- our colleges are well equipped and well positioned to prepare graduates with these skills;
- these skills are equally valuable for all graduates, regardless of the level of their credential, whether they pursue a career path, or they pursue further education.

Skill Categories

To capture these skills, the following six categories define the essential areas where graduates must demonstrate skills and knowledge.

- Communication
- Numeracy
- Critical Thinking & Problem Solving
- Information Management
- Interpersonal
- Personal

Application and Implementation

In each of the six skill categories, there are a number of defining skills, or sub skills, identified to further articulate the requisite skills identified in the main skill categories. The following chart illustrates the relationship between the skill categories, the defining skills within the categories and learning outcomes to be achieved by graduates from all postsecondary programs of instruction that lead to an Ontario College credential.

EES may be embedded in General Education or vocational courses, or developed through discrete courses. However these skills are developed, all graduates with Ontario College credentials must be able to reliably demonstrate the essential skills required in each of the six categories.

Skill Category	Defining Skills: Skill areas to be demonstrated by graduates:	Learning Outcomes: The levels of achievement required by graduates. The graduate has reliably demonstrated the ability to:
Communication	<ul style="list-style-type: none"> • Reading • Writing • Speaking • Listening • Presenting • Visual literacy 	<ol style="list-style-type: none"> 1. communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. 2. respond to written, spoken or visual messages in a manner that ensures effective communication.
Numeracy	<ul style="list-style-type: none"> • Understanding and applying mathematical concepts and reasoning • Analyzing and using numerical data • Conceptualizing 	<ol style="list-style-type: none"> 1. execute mathematical operations accurately.
Critical Thinking & Problem Solving	<ul style="list-style-type: none"> • Analyzing • Synthesizing • Evaluating • Decision making • Creative and innovative thinking 	<ol style="list-style-type: none"> 1. apply a systematic approach to solve problems. 2. use a variety of thinking skills to anticipate and solve problems.

Skill Category	Defining Skills: Skill areas to be demonstrated by graduates:	Learning Outcomes: The levels of achievement required by graduates. The graduate has reliably demonstrated the ability to:
Information Management	<ul style="list-style-type: none"> • Gathering and managing information • Selecting and using appropriate tools and technology for a task or a project • Computer literacy • Internet skills 	<ol style="list-style-type: none"> 1. locate, select, organize and document information using appropriate technology and information systems. 2. analyze, evaluate and apply relevant information from a variety of sources.
Interpersonal	<ul style="list-style-type: none"> • Teamwork • Relationship management • Conflict resolution • Leadership • Networking 	<ol style="list-style-type: none"> 1. show respect for the diverse opinions, values, belief systems and contributions of others. 2. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
Personal	<ul style="list-style-type: none"> • Managing self • Managing change and being flexible and adaptable • Engaging in reflective practices • Demonstrating personal responsibility 	<ol style="list-style-type: none"> 1. manage the use of time and other resources to complete projects. 2. take responsibility for one's own actions, decisions and their consequences.

IV. General Education Requirement

All graduates of the Culinary Skills program must have met the general education requirement described on the following pages, in addition to achieving the vocational and essential employability skills learning outcomes.

Requirement

The General Education Requirement for programs of instruction is stipulated in the Credentials Framework (Appendix A in the Minister's Binding Policy Directive Framework for Programs of Instruction).

In programs of instruction leading to either an Ontario College Diploma or an Ontario College Advanced Diploma, it is required that graduates have been engaged in learning that exposes them to at least one discipline outside their main field of study and increases their awareness of the society and culture in which they live and work. This will typically be accomplished by students taking 3 to 5 courses (or the equivalent) designed discretely and separately from vocational learning opportunities.

This general education learning would normally be delivered using a combination of required and elective processes.

Purpose

The purpose of General Education in the Ontario college system is to contribute to the development of citizens who are conscious of the diversity, complexity and richness of the human experience; who are able to establish meaning through this consciousness; and who, as a result, are able to contribute thoughtfully, creatively and positively to the society in which they live and work.

General Education strengthens students' essential employability skills, such as critical analysis, problem solving and communication, in the context of an exploration of topics with broad-based personal and/or societal importance.

Themes

The themes listed below will be used to provide direction to colleges in the development and identification of courses that are designed to fulfil the General Education Requirement for programs of instructions.

Each theme provides a statement of Rationale and offers suggestions related to more specific topic areas that could be explored within each area. These suggestions are neither prescriptive nor exhaustive. They are included to provide guidance regarding the nature and scope of content that would be judged as meeting the intent and overall goals of General Education.

1. Arts in Society:

Rationale:

The capacity of a person to recognize and evaluate artistic and creative achievements is useful in many aspects of his/her life. Since artistic expression is a fundamentally human activity, which both reflects and anticipates developments in the larger culture, its study will enhance the student's cultural and self-awareness.

Content:

Courses in this area should provide students with an understanding of the importance of visual and creative arts in human affairs, of the artist's and writer's perceptions of the world and the means by which those perceptions are translated into the language of literature and artistic expression. They will also provide an appreciation of the aesthetic values used in examining works of art and possibly, a direct experience in expressing perceptions in an artistic medium.

2. Civic Life:

Rationale:

In order for individuals to live responsibly and to reach their potential as individuals and as citizens of society, they need to understand the patterns of human relationships that underlie the orderly interactions of a society's various structural units. Informed people will have knowledge of the meaning of civic life in relation to diverse communities at the local, national and global level and an awareness of international issues and the effects of these on Canada, as well as Canada's place in the international community.

Content:

Courses in this area should provide students with an understanding of the

meaning of freedoms, rights and participation in community and public life, in addition to a working knowledge of the structure and function of various levels of government (municipal, provincial, national) in a Canadian and/or in an international context. They may also provide an historical understanding of major political issues affecting relations between the various levels of government in Canada and their constituents.

3. Social and Cultural Understanding:

Rationale:

Knowledge of the patterns and precedents of the past provide the means for a person to gain an awareness of his or her place in contemporary culture and society. In addition to this awareness, students will acquire a sense of the main currents of their culture and that of other cultures over an extended period of time in order to link personal history to the broader study of culture.

Content:

Courses in this area are those that deal broadly with major social and cultural themes. These courses may also stress the nature and validity of historical evidence and the variety of historical interpretation of events. Courses will provide the students with a view and understanding of the impact of cultural, social, ethnic or linguistic characteristics.

4. Personal Understanding:

Rationale:

Educated people are equipped for life-long understanding and development of themselves as integrated physiological and psychological entities. They are aware of the ideal need to be fully functioning persons: mentally, physically, emotionally, socially, spiritually and vocationally.

Content:

Courses in this area will focus on understanding the individual: his or her evolution; situation; relationship with others; place in the environment and universe; achievements and problems; and his or her meaning and purpose. They will also allow students the opportunity to study institutionalized human social behaviour in a systematic way. Courses fulfilling this requirement may be oriented to the study of the individual within a variety of contexts.

5. Science and Technology:

Rationale:

Matter and energy are universal concepts in science, forming a basis for understanding the interactions that occur in living and non-living systems in our universe. Study in this area provides an understanding of the behaviour of matter that provides a foundation for further scientific study and the creation of broader understanding about natural phenomena.

Similarly, the various applications and developments in the area of technology have an increasing impact on all aspects of human endeavour and have numerous social, economic and philosophical implications. For example, the operation of computers to process data at high speed has invoked an interaction between machines and the human mind that is unique in human history. This and other technological developments have a powerful impact on how we deal with many of the complex questions in our society.

Content:

Courses in this area should stress scientific inquiry and deal with basic or fundamental questions of science rather than applied ones. They may be formulated from traditional basic courses in such areas of study as biology, chemistry, physics, astronomy, geology or agriculture. As well, courses related to understanding the role and functions of computers (e.g., data management and information processing) and assorted computer-related technologies should be offered in a non-applied manner to provide students with an opportunity to explore the impact of these concepts and practices on their lives.