Our Program

This four year degree program is designed for students seeking careers in the hospitality, culinary, food services and food science sectors through a unique combination of food science and culinary skills. Well suited for those with a passion for food and a love of science, this program produces skilled graduates with culinary and food science backgrounds equipped with the abilities to create innovative, high quality food products for existing and emerging markets.

Through combining the disciplines of food science and culinary arts, students develop the necessary skills and knowledge to become professionals within this innovative and emerging field. Students examine a broad range of topics including food chemistry, food microbiology, sensory evaluation, food processing, as well as culinary science and food service management, with a focus on food product development and enhancing the nutritional value of food products. These core science skills are complemented by advanced skills in food preparation, cooking, baking, safety and sanitation, management and leadership. Through applied research in product development, students have the opportunity to research, create and market their own products. In addition, students participate in two practical cooperative education learning opportunities gaining valuable applied industry experience.

Major food companies and producers seek individuals who have the ability to design, develop and process quality food choices that are healthy, affordable, desirable and safe for consumers. Graduates are well positioned to find employment opportunities with major food manufacturers or small, private label companies, in the areas of food production management, food technology, product development, quality assurance management, food services and food research and development as well as in health-related industries or entrepreneurial endeavours. Algonquin College is working closely with the Research Chefs Association (RCA) in seeking RCA’s accreditation as a Culinology(R) program. Graduates of this program are well positioned to write RCAs Certified Research Chef examination.

SUCCESS FACTORS

This program is well suited for students who:

- Enjoy a hands-on approach to analyzing and solving problems.
- Have a passion and respect for science, analytics, creativity and culinary arts.
- Can work independently, as well as collaborate with others.
- Enjoy paying attention to fine details without losing sight of the big picture.

Employment

Graduates are well positioned to find employment opportunities as food microbiologists, food products scientists, food research scientists, food processing quality control officers, food quality assurance officers, food products inspectors, food science educators, agriculture and food sector development consultants, agriculture and food sector marketing consultants, agri-food sector development consultants, agri-food sector marketing consultants, culinary chefs, food product developers, food research developers and restauranteurs/entrepreneurs.

Learning Outcomes
The graduate has reliably demonstrated the ability to:

- Apply scientific principles, methodologies and theories in the development of new and modification of existing food and beverage products to meet market demands.
- Create quality food and beverage products using interdisciplinary skills in the processing, manufacturing and packaging of food products.
- Solve problems, formulate strategies and customize innovative solutions using critical thinking and research skills for the food service and the food industry.
- Perform research to plan, design and develop food and beverage products.
- Perform duties in a professional, ethical, safe and legal manner to meet industry expectations and compliance.
- Produce food and beverage products using culinary, food science and technology knowledge and skills to address health, safety, and nutritional issues.
- Perform sensory evaluation of food and beverage products to create products that meet consumer demands.
- Use and evaluate quality control and quality assurance procedures to meet industry standards and requirements.
- Communicate in written and oral format to present clear and concise technical, research and scientific information for a variety of audiences.
- Promote and advance the food and food service industries in the area of evidence-based culinary and food science practices using leadership skills.
- Conduct culinary planning, preparation, and presentation to a variety of food service environments to meet client needs.
- Use principles of marketing and finance in food product development process and in the operations of food and beverage management.
- Develop personal and professional strategies to plan, manage and adapt to the industry ensuring currency and fostering inter-professionalism.
- Identify and apply discipline-specific practices that contribute to the local and global community through social responsibility, economic commitment and environmental stewardship.

Program of Study

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<tr>
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<th>Courses</th>
<th>Hours</th>
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### Bachelor of Culinary Arts and Food Science (Honours)(Co-op)

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### Co-op: 01 Courses

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<td>WKT4000 Co-Op I: Culinary Arts</td>
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<td>MGT0231       Restaurant and Food Operations</td>
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<tr>
<td>NTN0031       Human Nutrition</td>
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<td>SAF0031       Food Safety and Sanitation</td>
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<td>FSC0132       Sensory Food Evaluation</td>
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<td>FSC0133       Food Product Development</td>
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Co-op: 02 Courses

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Level: 07 Courses

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<tr>
<td>FOD0231</td>
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<td>FSC0231</td>
<td>Food Quality Control Assurance</td>
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<td>FSC0232</td>
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Elective: choose 2 Courses

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<td>World Literature</td>
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<td>ENL4100</td>
<td>Creative Writing</td>
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<td>ENL4200</td>
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<tr>
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<td>PHI4002</td>
<td>The Philosophy of Drugs</td>
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<td>PHI4003</td>
<td>The Philosophy of Love and Sex</td>
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<td>PHI4004</td>
<td>Technology, Society and the Environment</td>
<td>42.0</td>
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<td>PHI4100</td>
<td>Survival in the Information Age: Risk and the Media</td>
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<td>PHY4000</td>
<td>Black Holes, Big Bangs and the Cosmos</td>
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<td>SOC4000</td>
<td>Criminology</td>
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<td>Global Perspectives</td>
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Level: 08 Courses

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<td>FSC0233</td>
<td>Applied Research in Culinology</td>
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<td>LAW0032</td>
<td>Food Laws and Regulation</td>
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Elective: choose 2 Courses

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<tr>
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<td>SOC4001</td>
<td>Global Perspectives</td>
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Fees for the 2021/2022 Academic Year

Tuition and related ancillary fees for this program can be viewed by using the Tuition and Fees Estimator tool at https://www.algonquincollege.com/fee-estimator.

Further information on fees can be found by visiting the Registrar’s Office website at https://www.algonquincollege.com/ro.

Fees are subject to change.

Additional program related expenses include:

Admission Requirements for the 2022/2023 Academic Year

College Eligibility

• Ontario Secondary School Diploma (OSSD) or equivalent.

• Mature students are applicants who have not achieved the Ontario Secondary School Diploma (OSSD) or its equivalent, and who are at least 19 years of age on or before the commencement of the program in which they intend to enroll. Mature students applying for Degree programs satisfy College Eligibility by having demonstrated academic abilities equivalent to those of Ontario high school graduates, verified by successful completion of at least one full-time term at the post-secondary level (minimum five courses taken concurrently in an academic program of study).

Program Eligibility

• Six Grade 12 university (U) or university/college (M) courses with a minimum 65% average including:
  • One Grade 12 U Mathematics course, with a minimum of 60%.
  • One Grade 12 U Biology course or one Grade 12 U Chemistry course.

• Please note that mature students must meet the following subject-specific Program Eligibility requirements, either directly or through equivalencies:
  • One Grade 12 U Mathematics course, with a minimum of 60%.
  • One Grade 12 U Biology course or one Grade 12 U Chemistry course.

Admission Requirements for 2021/2022 Academic Year

College Eligibility

• Ontario Secondary School Diploma (OSSD) or equivalent.

• Mature students are applicants who have not achieved the Ontario Secondary School Diploma (OSSD) or its equivalent and who are at least 19 years of age on or before the commencement of the program in which they intend to enroll. Mature students applying for Degree programs satisfy College Eligibility by having demonstrated academic abilities equivalent to those of Ontario high school graduates, verified by successful completion of at least one full-time term at the post-secondary level (minimum five courses taken concurrently in an academic program of study).

Program Eligibility

• Six Grade 12 university (U) or university/college (M) courses with a minimum 65% average including:
  • One Grade 12 U English course, with a minimum of 60%
  • One Grade 12 U Mathematics course, with a minimum of 60%
  • One Grade 12 U Biology course or one Grade 12 U Chemistry course.

• Please note that mature students must meet the following subject-specific Program Eligibility
• Please note that mature students must meet the following subject-specific Program Eligibility requirements, either directly or through equivalencies:

**Application Information**

**BACHELOR OF CULINARY ARTS AND FOOD SCIENCE (HONOURS) (CO-OP)**

Program Code 6180X03FWO

Applications to full-time day programs must be submitted with official transcripts showing completion of the academic admission requirements through:

ontariocolleges.ca
60 Corporate Court
Guelph, Ontario N1G 5J3
1-888-892-2228

Students currently enrolled in an Ontario secondary school should notify their Guidance Office prior to their online application at [http://www.ontariocolleges.ca/](http://www.ontariocolleges.ca/).

Applications for Fall Term and Winter Term admission received by February 1 will be given equal consideration. Applications received after February 1 will be processed on a first-come, first-served basis as long as places are available.

International applicants please visit this link for application process information: [https://algonquincollege.force.com/myACint/](https://algonquincollege.force.com/myACint/).

For further information on the admissions process, contact:

Registrar`s Office
Algonquin College
1385 Woodroffe Ave
Ottawa, ON K2G 1V8
Telephone: 613-727-0002
Toll-free: 1-800-565-4723
TTY: 613-727-7766
Fax: 613-727-7632
Contact: [https://www.algonquincollege.com/ro](https://www.algonquincollege.com/ro)

**Additional Information**

Algonquin College has been granted consent by the Minister of Training, Colleges and Universities to offer this applied degree for a seven-year term starting 2020. The College shall ensure that all students admitted to the above-named program during the period of consent have the opportunity to complete the program within a reasonable timeframe.

**Transfer Credit Recognition**

Students may be expected to travel outside of their immediate area of residency for co-op placement. It is the student`s responsibility to arrange transportation and incur all costs associated with co-op placement.

**ADVANCED STANDING**

Graduates from a two-year Culinary Management Ontario College Diploma program with a minimum overall average of 70% may be eligible to receive credit for up to 9 core and 3 non-core, as well as 1 co-op experience within the Bachelor of Science (Culinary Arts and Food Science) (Honours) Degree. Applicants must have completed a minimum of 500 hours work experience within the hospitality industry with an additional 500 hours to be completed prior to degree graduation. Applicants must have also successfully completed the degree level bridging courses.

Graduates from a three-year Biotechnology Advanced Ontario College Advanced Diploma program, with a minimum overall average of 70% may be eligible to receive credit for up to 10 core, 3 non-core and ENL1100 within the Bachelor of Science (Culinary Arts and Food Science) (Honours) Degree.

Graduates from a three-year Culinary Innovations and Food Technology Ontario College Advanced Diploma program with a minimum overall average of 70% may be eligible to receive credit for up to 25 core and 3 non-core as well as 1 co-op experience within the Bachelor of Science (Culinary
Bachelor of Culinary Arts and Food Science (Honours)(Co-op) Degree.

Applicants must have completed a minimum of 500 hours work experience within the hospitality industry with an additional 500 hours to be completed prior to degree graduation. Note that applicants who have completed a related College Diploma or Advanced Diploma are assessed on a case-by-case basis to determine the extent of course credit transfer and requirements for degree completion.

For more information about this program, please contact David Fairbanks, Program Coordinator, at 613-727-4723 ext. 5226 or fairbad@algonquincollege.com.

Course Descriptions

BIO0031 General Microbiology

Microorganisms exist throughout our environment and possessing knowledge of microbiology provides an understanding of its effects on larger life-forms. Students explore the scope of general microbiology, the diversity of microorganisms, including bacteria, viruses, fungi, protozoa and micro-algae, as well as the impact of microbes on everyday life. Topics include microbial nutrition and types of microbial growth, metabolism and energy generation, microbial control by physical and chemical agents. Students further examine the origins of biological diversity, the structure of cells and their components, as well as the form and function of plants and animals. During the laboratory component, students perform microscopic examination of microorganisms' culture from food and water specimens using basic microbiology laboratory techniques.

Prerequisite(s): none
Corequisite(s): none

BIO0131 Food Microbiology

Food is extremely susceptible to biological degradation due to the presence of microorganisms. Students analyze the most common microorganisms found in food, including bacteria, yeasts, moulds and viruses, as well as the most important groups of microorganisms associated with food spoilage: food fermentations, food infections and intoxications. Other considerations include intrinsic and extrinsic factors that affect microbial growth, sources of contamination during production, and the processing and storage of foods. In addition, the principles of culturing, isolation, identification, enumeration of microorganisms associated with food products are examined. Laboratory classes provide experience in microbiological techniques, sampling and standard techniques used for the microbiological examination of foods and water.

Prerequisite(s): BIO0031
Corequisite(s): none

BIO2200 Botany

Biologists with an interest in plant life may choose to specialize in botany. Beginning with the organic features of life, focusing on plants, students investigate the diversity of plant life and the basis for distinction amongst various species. With a deeper knowledge of plant structures and variability, students consider the impact of plants in the modern world, including human interactions such as food production, building materials and medicine.

Prerequisite(s): none
Corequisite(s): none

BIO2200 Botany

Biologists with an interest in plant life may choose to specialize in botany. Beginning with the organic features of life, focusing on plants, students investigate the diversity of plant life and the basis for distinction amongst various species. With a deeper knowledge of plant structures and variability, students consider the impact of plants in the modern world, including human interactions such as food production, building materials and medicine.

Prerequisite(s): none
Corequisite(s): none
**BIO2200 Botany**

Biologists with an interest in plant life may choose to specialize in botany. Beginning with the organic features of life, focusing on plants, students investigate the diversity of plant life and the basis for distinction amongst various species. With a deeper knowledge of plant structures and variability, students consider the impact of plants in the modern world, including human interactions such as food production, building materials and medicine.

Prerequisite(s): none
Corequisite(s): none

**CHE0031 General and Organic Chemistry**

Understanding how chemicals react to each other and the complexity of chemical components provides the foundation of chemistry, nutrition and the modern food industry. Students study the fundamental principles governing chemical reactions in aqueous solutions, chemical bonding, kinetics, chemical equilibria and thermodynamics, and apply these ideas to food, nutrition and food preparation. In addition, students study nomenclature and predict solubility, melting and boiling points based on chemical structure, and the interaction of these ideas to food items. Practical hands-on laboratory experiments are essential active learning environments for students. During lab time, students execute experiments related to the physical chemical properties of chemical reactions, phase transitions, structure and bonding in solids and solutions.

Prerequisite(s): SCI0008
Corequisite(s): none

**CHE0131 General Biochemistry**

Understanding the biochemical compounds of cells and their biological roles is the foundation of biochemistry, and by extension, nutrition and food science. Students examine the structure of biologically important compounds and the biological roles of the major molecular components of the cell, including proteins, nucleic acids, lipids and carbohydrates. Focus is also on the roles of biological macromolecules, including enzymology and intermediary metabolism, with an emphasis on catabolic processes, and their application in industrial food preparation. In addition, students perform basic hands-on laboratory experiments on biomolecules including proteins, lipids and nucleic acids. The laboratory portion includes the isolation and study of biological properties of some biological compounds.

Prerequisite(s): CHE0031
Corequisite(s): none

**CHE0231 Food Chemistry**

Students build on foundational chemistry knowledge in order to understand how different food compounds react to each other in different processing conditions. Students study the structural and functional properties of major and minor chemical compounds of food such as proteins, lipids, carbohydrates, water, enzymes, vitamins and their relationships to food stability and degradation. Students also explore the chemical changes in foods during processing and storage effecting texture, colour, flavour, stability and nutritive qualities.

Prerequisite(s): CHE0031
Corequisite(s): none

**CUL4000 Global Citizenship**

Informed citizens in today’s world appreciate the meaning of civic life at the local, national and global level. Students reflect on and develop a personal awareness of the meaning of freedoms, rights and obligations in a diverse global community and consider the political, social and economic drivers that influence patterns of human behaviour and the health of the planet. Based on general principles of global citizenship, students look beyond national borders to assess personal responsibilities related to the health and well-being of the planet and inhabitants. Students critically evaluate information related to environmental and social health, equipped with attitudes and behaviours that foster global environmental and social responsibility.
Bachelor of Culinary Arts and Food Science (Honours)(Co-op)

Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s): none

**CUL4000 Global Citizenship**

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Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s): none

**ECO2000 Environmental Economics**

Issues pertaining to the environment have a major financial impact on society and government. Environmental economics examines the way human decisions affect the quality of the environment, how human values and institutions shape our demands for improvements in the quality and about designing effective public policies to bring about these improvements. Students examine problems and solutions relating to environmental policy analysis in the Canadian context.

Prerequisite(s): PHI1000
Corerequisite(s): none

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Prerequisite(s): PHI1000
Corerequisite(s): none

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Prerequisite(s): PHI1000
Corerequisite(s): none

**ENL1100 Communications and Academic Writing**

Effective communication is an integral component of success in the workplace and in lifelong learning. Students review communication theory and its connection to expository writing. Frequent writing exercises encourage the development of content that is coherent, well organized and correct. Students consider and use strategies to generate ideas, to collect and organize information, to acknowledge sources, to identify and develop a thesis and to adapt format, style and tone for different purposes and audiences.

Prerequisite(s): none
Corerequisite(s): none
ENL2025 Interpersonal Communication

Effectively communicating with others, both professionally and personally, is an art that requires conscious development. Students address the techniques related to interpersonal communication challenges in the diverse workplace. Focus is on communication barriers, verbal and non-verbal communication, listening, team work, and relational dynamics. Through role play, analysis, and case studies, students engage in simulated and authentic interpersonal communication situations.

Prerequisite(s): ENL1100
Corequisite(s): none

ENL4016 World Literature

Exposure to broad sources of literature promotes an open-minded perspective on today’s global society and encourages an appreciation of diversity and human differences. In World Literature, students explore key literary works from around the world and examine the socio-historical and cultural contexts in which authors wrote and set these texts. Students learn to identify common themes and apply literary and cultural theory to these works towards expanding critical thinking skills and developing an analytical vocabulary. Through seminar presentations, group discussions, debates, journaling, and creative writing, students grapple with literary representations of social, political, and cultural issues from around the world, gaining an appreciation of what it means to be responsible global citizens and possess the ability to listen to, question, and value diverse perspectives.

Prerequisite(s): ENL1100
Corequisite(s): none
ENL4100 Creative Writing

Whether for personal or public consumption, many people enjoy writing short fiction to express their creative energy while improving upon their overall writing abilities. Working with professional short stories as models, students examine the stylistic components that contribute to the excitement, atmosphere, and overall readability of short fiction. Students share their work and provide formal feedback on the work of others.

Prerequisite(s): ENL1100
Corerequisite(s): none

ENL4200 New Worlds and Alternative Realities: Speculative Fiction

Speculative fiction gathers together all those works of fiction in which new worlds or alternative realities are envisioned. Within this category of prose, students have the opportunity to explore the various sub-genres that present readers with new ways of thinking about some of the issues that face society. Students also develop skills in critical analysis using a variety of approaches and methodologies from literary studies.

Prerequisite(s): none
Corerequisite(s): none

FLS3101 French as a Second Language - Beginner 1

The French language is an asset when communicating in the workplace. Students with no prior knowledge of French acquire basic forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples support students to gain basic oral expression and comprehension using simple phrases that develop vocabulary, pronunciation, and comprehension. Students begin to appreciate cultural and linguistic differences when French is used in the workplace.

Prerequisite(s): none
Corerequisite(s): none
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Prerequisite(s): none
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Prerequisite(s): none
Corerequisite(s): none

FLS3102 French as a Second Language - Beginner 2

The workplace benefits from having professionals with knowledge of the French language. Students with basic knowledge of French gain more control over forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of French in the workplace.

Prerequisite(s): FLS3101
Corerequisite(s): none

FLS3102 French as a Second Language - Beginner 2

The workplace benefits from having professionals with knowledge of the French language. Students with basic knowledge of French gain more control over forms and structures to interact and communicate in a simple way with French speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of French in the workplace.

Prerequisite(s): FLS3101
Corerequisite(s): none

FOD0031 Culinary Arts Fundamentals

The ability to participate in industry-scaled food production is contingent on knowledge of fundamental culinary techniques, knife handling skills and safe handling procedures. Students learn culinary terminology, ingredients, knife skills, food and plate presentation, evaluation and
cooking techniques. Students also learn how to use tools and equipment and to operate large and small commercial kitchen equipment. Sanitation and safety are practiced in all hands-on food preparation activities and assessments.

Prerequisite(s): none
Corerequisite(s): none

**FOD0032 Culinary Arts**

Developing basic skills and knowledge in applied culinary arts is the first step in hands-on food preparation activities as well as an introduction to safe food handling and sanitation. Students participate in basic food preparation. Students have the opportunity to practice culinary skills and demonstrate knowledge of culinary arts in modern facilities. Demonstrations include sauces, stocks, poultry, meats, soups and fish.

Prerequisite(s): FOD0031
Corerequisite(s): none

**FOD0040 Baking and Pastry Fundamentals**

Pastry and baked goods play a significant role within the commercial food industry. Students learn the basic concepts, skills and techniques of baking, through preparing yeast breads, quick breads, pastries, pies, cakes, custards, creams and sauces. Students also prepare icing, properly handle chocolate, and apply a variety of decorating styles and techniques. Emphasis is placed on identification of products, the study of ingredients, weights and measures as applied to baking.

Prerequisite(s): FOD0031
Corerequisite(s): none

**FOD0131 Advanced Culinary Arts**

Creativity comes alive in the advanced culinary application of food preparation activities. Students build on skills in previous culinary labs through preparing intricate recipes used in advanced a la carte applications with emphasis on color, taste, texture and presentation. Students develop advanced skills in culinary and food preparation through small batch assignments, ultimately preparing finished dishes fit for sale where presentation and taste are paramount.

Prerequisite(s): FOD0032
Corerequisite(s): none

**FOD0231 Culinary Trends and Innovation**

Staying up to date with current literature and being able to disseminate knowledge to peers is a key component of food science and culinary arts. Whether on the shelf or in the restaurant, the success of food and beverage products in the marketplace are based on differentiation through meeting or exceeding consumer culinary needs. Students research current trends in the culinary world by critically reviewing major publications in culinary science and technology and present their findings to colleagues.

Prerequisite(s): none
Corerequisite(s): none

**FOD0331 Regional and International Cuisine**

In today’s global community, possessing knowledge of both regional and international cuisine is vital in meeting the demands of the food service industry. Students learn various recipes and traditions from different countries. Spanish paella, Greek dolmathes, Mexican caramel flan, Japanese sushi, Indonesian satay and Italian risotto are just a few examples of dishes to which students are introduced. Experiencing many of the world’s finest foods leads students on a culinary and cultural adventure. Students explore the sensory experience of new ingredients and flavour by cooking food from different national and international ethnic groups.

Prerequisite(s): FOD0131 and SAF0031
FSC0031 Principles of Food Science and Nutrition

Students examine the multidisciplinary nature of food science and nutrition and explore the major and minor food components and their nature, properties and characteristics. Students also discuss the quality and safe food handling, post-harvest handling of fresh foods, preparation and conversion of food commodities into high quality products. Other topics include food choices and the effect on personal health and nutritional needs, nutrients and relationships between diet and health through an assessment of their own food choices.

Prerequisite(s): none
Corerequisite(s): none

FSC0032 Introduction to Culinology

Culinology involves the blending of the science of food and creativity of culinary arts specializing in development of new food products. Students explore the opportunities made available in bringing together of two disciplines of culinary arts and food science. Focus is on the food preparation, cooking and food technology processes that lead to food product development and mass production. Guest speakers from the food and/or culinary industry provide insight into culinary careers and share authentic industry experience.

Prerequisite(s): none
Corerequisite(s): none

FSC0131 Food Analysis

The ability to analyze food is important to satisfy food regulations and to ensure food quality for consumers. Students practice the sampling and quantitative/qualitative analysis of foods through applying the theory of physical and chemical methods for the analysis of food constituents. Students analyze food using modern equipment and advanced spectroscopic technologies including HPLC, GC, atomic absorption and capillary electrophoresis for rapid analysis of food contaminating materials, moistures and both major and minor food constituents.

Prerequisite(s): CHE0231
Corerequisite(s): none

FSC0132 Sensory Food Evaluation

Consumers’ food acceptance is critical to the application of sensory evaluation of foods. Students gain an understanding of the factors contributing to sensory perception of foods and the various test methods and procedures used to evaluate, measure, analyze, and interpret sensory reactions to food characteristics and consumer needs. Students are exposed to hands-on experience with implementation, panel training, product presentation, statistical analysis and interpretation of sensory data.

Prerequisite(s): CHE0231
Corerequisite(s): none

FSC0133 Food Product Development

Blending culinary arts and food science knowledge is essential to successful product development. Students apply knowledge gained in food chemistry, ingredient functionality, sensory evaluation, microbiology, food preparation and food processing courses to the theory and practice of developing new food product. Students explore idea generation to production of prototype using traditional and novel food ingredients and processes in the context of current and future regulatory, environmental and social limitations. Students incorporate factors and implications of nutrition, health, cost and marketing in the design and development of new food product.

Prerequisite(s): BIO0131 and CHE0231
Corerequisite(s): none
**FSC0231 Food Quality Control Assurance**

Food products must be safe and meet government regulations. Food production processes must also adhere to Hazard Analysis Critical Control Point (HACCP) international standards and Good Manufacturing Practice (GMP). Students discuss theory and application of quality assurance practices for food processing industries and food services. In addition, students explore quality assurance, Hazard Analysis and Critical Control Points (HACCP), ISO quality and safety management systems and total quality management. Students apply statistics in the establishment of sampling plans, acceptance or rejection of lots, control charts, probability, distributions and applications to various food systems.

Prerequisite(s): BIO0131 and CHE0231 and FSC0131  
Corerequisite(s): none

**FSC0232 Food Process Engineering**

Food processes and the relationship between chemistry, microbiology and engineering are essential to food technologists. Focus is on the operation of food processing units utilized for food production and preservation. Students analyze and practice using different food processing methods to manufacture different foods for consumption. Some of these methods include dehydration, chilling and freezing, microwave heating, high pressure processing, blanching, pasteurization, sterilization, evaporation, drying, extrusion, irradiation, fermentation and membrane separation.

Prerequisite(s): BIO0131 and CHE0231 and FSC0131  
Corerequisite(s): none

**FSC0233 Applied Research in Culinology**

Blending culinary arts and food science knowledge is essential to successful product development. Students apply their individual professional Culinology? research experience to develop a product for commercial or retail food manufacturers from conception, market analysis, and sensory evaluation to production and packaging.

Prerequisite(s): FSC0231  
Corerequisite(s): none

**GEO2300 Principles of Urban Planning**

Increasingly cities and communities are feeling the pressure of expansion, and people from all walks of life feel disconnected from the processes, procedures, and decisions that are affecting everyday life. Students consider urban transformation with a focus on practicing sustainability by exploring innovations in land use, transportation, resource planning and economic development, resulting in employment opportunities, as well as healthy and vibrant cities. Students use local and regional activities as a starting point for developing a knowledge base for future social and community involvement. Research projects and assignments encourage students to identify the gaps between theoretical approaches to urban planning and the practical applications as evidenced in their local surroundings.

Prerequisite(s): none  
Corerequisite(s): none

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LAN3101 Spanish - Beginner 1

The Spanish language is an asset when communicating in the workplace. Students with no prior knowledge of Spanish acquire basic forms and structures to interact and communicate in a simple way with Spanish speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples support students to gain basic oral expression and comprehension using simple phrases that develop vocabulary, pronunciation, and comprehension. Students begin to appreciate cultural and linguistic differences when Spanish is used in the workplace.

LAN3102 Spanish - Beginner 2

The workplace benefits from having professionals with knowledge of the Spanish language. Students with basic knowledge of Spanish gain more control over forms and structures to interact and communicate in a simple way with Spanish speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of Spanish in the workplace.
Prerequisite(s): LAN3101  
Corerequisite(s): none

**LAN3102 Spanish - Beginner 2**

The workplace benefits from having professionals with knowledge of the Spanish language. Students with basic knowledge of Spanish gain more control over forms and structures to interact and communicate in a simple way with Spanish speakers. Class instruction and practice, repeated feedback, and exposure to a variety of language samples provide students with opportunities to enhance their basic oral expression and comprehension using simple phrases that further develop vocabulary, pronunciation, and comprehension. Students deepen their knowledge of cultural and linguistic differences of Spanish in the workplace.

Prerequisite(s): LAN3101  
Corerequisite(s): none

**LAW0032 Food Laws and Regulation**

The food industry is highly controlled by local, federal and international laws and regulations. Students examine some of these key laws and discuss how food laws and regulations are applied, interpreted and enforced. Students explore the impact of legislation and regulations on legal and regulatory issues relating to food safety, product development, labelling, packaging, nutrition and also discuss current regulatory trends, including those pertaining to biotechnology.

Prerequisite(s): none  
Corerequisite(s): none

**LAW2014 Law**

The reach of the rule of law extends into our lives on a daily basis. As much as it is present in our lives, very few people are aware of the processes, procedures and theories that guide and underpin the development and maintenance of a functional legal system. With attention to key historical figures and events, students explore the scope, jurisdiction, and key concepts of the sub-disciplines within the field of law. Through an introduction to legal arguments and methodologies, students distinguish between various legal systems and wrestle with the difference between law and justice.

Prerequisite(s): none  
Corerequisite(s): none
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Prerequisite(s): none
Corerequisite(s): none

MAT0031 Mathematics for Food Science

Foundations necessary for the application of mathematics in science, statistics and food units are an essential component in food science. Students acquire the essential mathematical skills needed to understand, analyze, and solve mathematical problems related to business, finance and economics. Topics covered include basic algebra, functions, finance, return on investment (ROI), units of measure and conversion, as well as scientific and engineering notation. Students explore and apply exponential and logarithmic functions, sequences and series to financial applications.

Prerequisite(s): none
Corerequisite(s): none

MGT0131 Management of Food and Beverage

Food and beverage businesses face challenges in the hospitality industry. Students prepare to meet these challenges by investigating models and tools to address changing labour conditions, evolving customer expectation, growing global uncertainty and the rapid technology changes. Basic economic concepts and theories, are examined to assess business and management requirements. Students explore the importance of food and beverage service, develop product knowledge, and discuss issues of sustainability, ethical and local food sources. Students develop practical management skills required to work within the beverage sector and examine various beverages in a bar laboratory, expanding their knowledge and understanding. Students will complete the Ontario Smart Serve Program.

Prerequisite(s): none
Corerequisite(s): none

MGT0231 Restaurant and Food Operations

It is important to ensure food quality and customer satisfaction through cost-effective and efficient restaurant operations. Students explore the fundamentals of successful restaurant operations with emphasis on budget preparation, Return on Investment (ROI), food and labour cost controls, menu planning and pricing, customer satisfaction, purchasing, kitchen operations and quantitative management. In addition, students apply managerial skills in the design of marketing strategies, using research, product development, pricing, distribution structure and promotion.

Prerequisite(s): none
Corerequisite(s): none

MGT0331 Menu Design and Service

Designing a menu based on customer demand, and within the limits of company resources, is an essential part of food service operations. Students explore a wide variety of food service operations and applications of menu design techniques including pricing strategies, ordering, converting recipes from small to large quantities, marketing strategies and food preferences of the public.

Prerequisite(s): none
Corerequisite(s): none
NTN0031 Human Nutrition

Basic nutrition and diet are an integral part of culinary arts and food science. Students learn the principles of human nutrition with emphasis on the physiological roles of carbohydrates, lipids, proteins, minerals, vitamins and their dietary sources. Students study how these food components affect the relationship to health and well-being of the individual and family across the lifespan. Students explore current recommendations for nutrients intake, as well as cultural and health influences on diet, and how they apply towards food product and menu development.

Prerequisite(s): CHE0131 and FSC0031
Corerequisite(s): none

PHI1000 Logic and Critical Thinking

Logic and critical-thinking skills play an important role in both daily life and ongoing academic studies. As foundational skills, they support both the development and assessment of ideas, concepts and courses of action that are presented on a daily basis. Approaching the subject from both a practical and theoretical perspective, students hone their skills in analysis, argumentation, reasoning and persuasion. A range of topics and thinkers provide material with which students can exercise and apply their skills.

Prerequisite(s): none
Corerequisite(s): none

PHI2002 Ethical Decision Making

To avoid potential prosecution, companies and their employees are well-advised to engage in ethical decision-making practices in all business situations. Students examine ethical concepts and principles, compare a variety of ethical decision-making models and utilize these principles and models to make ethically sound decisions in a variety of contexts. Students also design a code of ethics, practice making ethically-based decisions and develop the analytical skills required to recognize, evaluate and resolve ethical dilemmas in the workplace.

Prerequisite(s): PHI1000
Corerequisite(s): none

PHI2002 Ethical Decision Making

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Prerequisite(s): PHI1000
Corerequisite(s): none

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Prerequisite(s): PHI1000
Corerequisite(s): none

PHI3000 Applied Research Methodology

Evolving fields in sciences and technology rely heavily on the ability of professionals to perform
practical applications within industry. Academic research involves the identification of problems to study, the designing of research projects, the development and refining of hypothesis and research questions, the justification of methodological decisions through sampling and measurement, and the checking of the validity and reliability of studies. Emphasis is on the application of theoretical understanding to real-world situations in the specific industries. The final project involves the creation of a proposal to develop a strategic plan grounded in primary and secondary research.

Prerequisite(s): QUA2000
Corequisite(s): none

**PHI4000 Philosophy and Popular Culture**

Many facets of today's popular culture engage, directly or indirectly, with the concerns of a variety of philosophical traditions. Drawing on a number of examples, students explore both the way popular culture permeates and spreads through society and the way it interprets and presents philosophical questions. Students develop skills and techniques for assessing the soundness and validity of thought experiments.

Prerequisite(s): PHI1000
Corequisite(s): none

**PHI4002 The Philosophy of Drugs**

Drugs are everywhere: professionals prescribe them to us to make us "better"; we take them recreationally; we give them to our children, pets and other loved ones; we buy them on the streets and in grocery stores. What are "drugs"? Why are some drugs legal and others not? How do drugs get to market? What ethical issues are relevant in a global drug industry? Are current intellectual property regimes appropriate if the goal of drug research is to promote benefits to society? Students critically examine these, and other, questions through the lens of historical and contemporary ethical, philosophical and legal theories and arguments. Students engage in various peer-oriented learning activities throughout the course.

Prerequisite(s): none
Corequisite(s): none

**PHI4003 The Philosophy of Love and Sex**
Love and sex are central to the human condition, and have been topics of academic inquiry and controversy throughout history. Various practices surrounding love and sex are celebrated in Western culture, such as monogamy and marriage, while other practices, such as polygamy and pedophilia, are condemned. Why is this? Students critically explore these and other issues surrounding love and sex using examples from popular music, movies and literature, framing those issues with the help of historical and contemporary philosophical theories and arguments. Students engage in various peer-oriented learning activities throughout the course.

Prerequisite(s): none
Corerequisite(s):none

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Prerequisite(s): none
Corerequisite(s):none

**PHI4004 Technology, Society and the Environment**

Environmental issues have come to occupy a central place in the marketplace, politics, policy, and society at large. Owing largely to the many environmental consequences that have accompanied industrialization, we humans have been forced to rethink the complex relationship between technology, society and the environment. Students investigate philosophical concepts and theories surrounding technology, society and the environment including: the "naturalness" of technology, sustainability and animal rights. Students critically examine course material by focusing on questions such as: What is nature, and what role do/should humans occupy in it? What do we owe non-human organisms? What do we owe future generations? Students engage in various peer-oriented learning activities throughout the course.

Prerequisite(s): none
Corerequisite(s):none

**PHI4004 Technology, Society and the Environment**

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Prerequisite(s): none
Corerequisite(s):none

**PHI4100 Survival in the Information Age: Risk and the Media**

On an almost daily basis, the media, through its various outlets - television, radio, web sites, RSS, and podcasts - reports on issues that address our wellbeing. Through discussions, readings, and assignments, students enhance their ability to interpret and question information presented by the media by better understanding the inherent risks. Issues like alternative medicine (i.e. vaccinations) and socio-legal issues (i.e. bullying, hacking, surveillance, privacy) provide grounds for students to use principles from the social science as a means to think critically about real and perceived risks in daily life.
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Prerequisite(s): PHI1000
Corerequisite(s): none

PHY4000 Black Holes, Big Bangs and the Cosmos

The dynamic and exciting field of Cosmology outlines our current understanding of the Universe from its start, at the so-called Big Bang, through the ensuing 13 plus billion years to the present and beyond. Students learn how to discuss our present understanding of the three phases of the Universe as well as its five part make up, with matter making up only 4% of the whole. Students explain our knowledge of the various phases of evolution of the Cosmos and also the latest theories and experiments that are trying to address our uncertainties. Throughout the course, students evaluate and debate many of today's ideas and concepts revolving around cosmology.

Prerequisite(s): none
Corerequisite(s): none

PSI2000 Navigating Canada's Political Landscape

A developed knowledge of government and politics is key to an effective participation in public life. Drawing on current events, students explore the societal, cultural and constitutional context along with the major political parties and institutions that shape the Canadian political landscape. Students develop skills and techniques that allow them to position politicians, parties, and policies, past and present, on the spectrum of political ideology and Canadian political traditions. Working together and individually, students analyze issues from the perspective of various political approaches.

Prerequisite(s): none
Corerequisite(s): none
Bachelor of Culinary Arts and Food Science (Honours)(Co-op)

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Prerequisite(s): none
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Prerequisite(s): none
Corerequisite(s): none

**PSY2100 Introductory Psychology**

With its applications to behaviour and personality, psychology extends its reach into many aspects of our personal lives. The broad applications of this social science in both an applied and theoretical context are premised on a number of fundamental principles. Students explore historical breakthroughs that define the current boundaries of the discipline and interact with a number of the foundational concepts that resonate throughout daily life and popular culture. Students develop an introductory knowledge in the various schools of thought within the discipline.

Prerequisite(s): none
Corerequisite(s): none

**PSY2100 Introductory Psychology**

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Prerequisite(s): none
Corerequisite(s): none

**PSY2100 Introductory Psychology**

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Prerequisite(s): none
Corerequisite(s): none

**QUA2000 Statistics**

Students explore fundamental statistical concepts and use statistical software to summarize, analyze and present both descriptive and inferential statistics. Topics include central tendency, variation, probability, central limit theorem, sampling, estimation, hypothesis testing and simple regression and correlation. These theoretical concepts are explained through practical examples from various sectors. Students develop the required background for further study related to research.
SAF0031 Food Safety and Sanitation

One of the major concerns in food preparation, production, handling, packaging and distribution is the physical, chemical and microbiological safety of food. Students understand the sources of microbiological, chemical and physical contamination in order to minimize microbial growth and survival. Students apply Good Manufacturing Practice (GMP), cleaning and sanitation practices and Hazard Analysis Critical Control Point Programs (HACCP) in food processing and food service. In addition, students consider food safety aspects with respect to various industry-related professional organizations and governmental agencies such as the Dietitians Canada, Canada Food Agency and Health Canada.

Prerequisite(s): BIO0131
Corerequisite(s): none

SCI0008 Introduction to Chemistry and Physics

Knowledge of the substances that make up matter provides an understanding of how material properties are affected by energy such as heat and pressure. Students examine states of matter, nomenclature, stoichiometry, concentration, periodicity, redox reactions, atomic structure, chemical bonding, molecular structure, valence bond and molecular orbital theories and symmetry. In addition, students explore the fundamental basics of organic chemistry, including chemical and solution equilibria (acids, bases and buffers), as well as topics in thermodynamics, heat, energy and the states of matter. Students also examine examples of important considerations related to food preparation and nutrition.

Prerequisite(s): none
Corerequisite(s): none

SCI2000 Environmental Science

Environmental science is an interdisciplinary study of how the earth works, human interaction with the earth and how to address the existing environmental problems. Students explore natural capital and the degradation. Students engage in case studies, critical thinking and analysis of alternatives in exploring solutions and trade-offs in trying to address degradation.

Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s): none

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Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s): none

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Prerequisite(s): ENL1100 and PHI1000
Corerequisite(s): none

SOC2000 Introduction to Sociology
When working with individuals and groups it is important to understand both the background and influences present. Students develop a familiarity with sociological theories and methodological approaches used to study individual and group behaviours. Students also examine variables that include culture, social class, race, and gender and how these variables may impact work with diverse individuals and groups.

Prerequisite(s): ENL1100
Corerequisite(s): none

**SOC2000 Introduction to Sociology**

When working with individuals and groups it is important to understand both the background and influences present. Students develop a familiarity with sociological theories and methodological approaches used to study individual and group behaviours. Students also examine variables that include culture, social class, race, and gender and how these variables may impact work with diverse individuals and groups.

Prerequisite(s): ENL1100
Corerequisite(s): none

**SOC4000 Criminology**

The interdisciplinary study of social science examining the individual and social aspects of crime is known as criminology. Students work through an introduction to the social science perspective on crime. Presentations, discussions, and assignments allow students to investigate the various theoretical positions related to crime and criminal behaviour. Working forward from the types and definitions of crime, students trace some of the links between government policy and the impacts of these policies on both society and the individual.

Prerequisite(s): SOC2000
Corerequisite(s): none

**SOC4001 Global Perspectives**

Sociology, through its exploration of the organization of society and the connections between people and their surroundings, provides new ways of looking at the world. Using fundamental knowledge in the field of sociology, students analyze globalization and its impact on Canadian society. Students take opposing views to debate the opportunities and challenges that come with globalization.
Prerequisite(s): SOC2000
Corequisite(s): none

**SOC4001 Global Perspectives**

Sociology, through its exploration of the organization of society and the connections between people and their surroundings, provides new ways of looking at the world. Using fundamental knowledge in the field of sociology, students analyze globalization and its impact on Canadian society. Students take opposing views to debate the opportunities and challenges that come with globalization.

Prerequisite(s): SOC2000
Corequisite(s): none

**WKT4000 Co-Op I: Culinary Arts**

Immediately following academic term four, the first co-op placement provides students with experiential opportunities within the related industries. The first work term centres on attaining entry-level positions that immerse students in a variety of activities allowing them to apply principles and concepts developed over the first two years of study. Students returning from Co-op Work Term I bring additional practical considerations to their third year of study. Although centred with public and private organizations located in Eastern Ontario, co-op employment opportunities may be sought throughout Canada and abroad. Prerequisites: Satisfactory completion of all courses in semesters 1-4

Prerequisite(s): none
Corequisite(s): none

**WKT6000 Co-Op 2: Food Science**

Co-op 2: Food Science Immediately following academic term six, the second co-op placement provides students with experiential opportunities within the related industries. The second work term centres on applying knowledge and skills developed over the first three years of study and accepting increasing responsibilities. Students returning from Co-op Work Term II draw on their experience for a number of their final year seminars. Although centred with public and private organizations located in Eastern Ontario, co-op employment opportunities may be sought throughout Canada and abroad. Prerequisites: Satisfactory completion of all courses in semesters 5 and 6

Prerequisite(s): none
Corequisite(s): none