2020

FANS01374 Food Processing - Product Development CVS Application

Fanshawe College

Ontario College Quality Assurance Service

Service de l'assurance de la qualité des collèges de l'Ontario

Food Processing - Product Development

Fanshawe College | APS # FANS01374 | MTCU # 63111
Ontario College Graduate Certificate | Funding requested - full-time

Purpose

The Food Processing – Product Development program at Fanshawe College is a three-semester graduate certificate, offered in a web-enhanced delivery format. This program combines instruction in food science, therapeutic nutrition, sensory evaluation, food research and development, and culinary creativity with business courses in quality assurance and industry engagement. Students will experience multiple practical opportunities including a mentorship with industry partners, tours, a capstone project and a co-op, and will be well-prepared to launch their careers in the food processing sector.

Admission

Ontario College Diploma, Ontario College Advanced Diploma, Degree or equivalent preferably in culinary, nutrition, food science or similar discipline;

Occupational Areas

Students will apply their unique ability to combine culinary creativity with food science that will lead to careers as product developers, new product marketing coordinators, food research and development specialists, food technologists and/or research product managers in the growing agribusiness, food manufacturing and processing industry.

The closest NOC code to this type of career is 9465 "Testers and Graders, Food and Beverage Processing". According to the Program Development Data Report produced by Institutional Research, Fanshawe College, employment in this occupation is forecasted to increase by 5.3% for the period 2019-2026. It had previously increased by 0.5% from 2017-2019. Elgin-Middlesex-Oxford (EMO) has a comparative advantage with 74% more testers and graders, food and beverage processing than other regions in the country (for 2019). The location quotient in the report of 1.74 indicates that EMO has a higher share of this occupation than the province and country. Although this is a small occupation, when digging deeper, this very high location quotient is expected to rise by 12.6% over the next 7 years. All of the new jobs can be attributed to the regional competitiveness of this area and are related to the information provided below from the London Economic Development Corporation (LEDC).

The LEDC has identified London as "an ideal test market for companies developing new (food) products prior to nationwide launch." (ledc.com/food-processing) Top multinational companies/employers in the London area include Nestle Canada, Cargill, ABIvBEV, Pepsico, Dr. Oetker Pizza Factory, the Original Cakerie, McCormick, and Natra. The LEDC is actively engaging in

a campaign to bring even more Argi-Food manufacturing businesses to London Ontario.

In an interview on November 27, 2019, Jack Adams of the LEDC stated that they are expecting 2-3 new food-processing businesses to join the sector in our region for the next 20-25 years. Maple Leaf Foods will soon be opening a new plant on Veterans Memorial Parkway near Dr. Oetker. He stated that new growth is expected to continue and that London and Canada as a whole is investing heavily in agri-business and food processing.

Every week there are jobs listed on the job search boards for which graduates of this program would be suitable.

Laddering Opportunities

There are currently 19 Culinary Management diploma programs and 5 Nutrition and Food Services Management diploma programs that are viewed as feeder programs for this proposed program. In addition, there is a logical connection between this program and the Agri-Business and Research and Evaluation graduate certificate programs offered at Fanshawe; this includes an overlap in a couple of courses creating a pathway for students. This would be especially attractive to international students. George Brown College offers an Honours Bachelor of Commerce with a specialization in culinary management, which presents a good fit for pathway development through an articulation agreement, which will be investigated. Further, Fanshawe presently maintains an articulation agreement with Western University and Brescia College that enables a pathway from the Nutrition and Food Services Management diploma program at Fanshawe to the Bachelor of Science (Food and Nutrition) Honours degree program at Western/Brescia. A new articulation agreement will be investigated with Western and Brescia both to and from this new program. Additional pathways will be explored to and from this program connecting it with agri-business/agri-science and nutritional programs at universities both at home and abroad.

Program VLOs

1. Assess food stability and food safety utilizing the principles of food science to ensure product quality.
2. Identify industry best practices related to quality assurance and food safety to meet the requirements of safe food processing.
3. Determine ingredient selection and preparation techniques for food product development to satisfy company and public needs.
4. Evaluate packing and storing techniques and procedures used in the production of agri-business and food-processing products to ensure food quality and safety.
5. Apply fundamental nutritional principles into all aspects of food production to ensure compliance with Canadian Food Industry Standards.
6. Develop food products using food chemistry, food microbiology and human physiology principles to broaden food product options in the market.
7. Assess budget and cost control methods in food processing to ensure financial feasibility.
8. Apply current legislation and regulations to the development and testing of foods in the agri-business and food-processing sector, ensuring they meet industry standards.
9. Research and interpret information related to food innovation in agri-business and food processing

to ensure economic viability.

10. Develop a business/marketing proposal related to new food products to inform on feasibility and marketability.
11. Present new product research persuasively and accurately in oral, written and graphic formats to support sales and marketing.

Curriculum

- **CHEM-XXX1 - Food Chemistry** (Semester 1 - 45.00 hours)
  This course will introduce elements of inorganic, organic and biochemistry relevant to the development, quality control analysis and testing of food products. Students will perform laboratory exercises that include the qualitative and quantitative evaluation of food chemistry.
- **BIOL-XXX1 - Food Microbiology 1** (Semester 1 - 45.00 hours)
  Microorganisms have a both positive and negative impact on food quality. This course introduces the basic aspects of microbiology, taxonomy, morphology and physiology of microorganisms. Students will learn the principles of HACCP, and will participate in basic laboratory techniques for the microbiology lab, including microscopy, swabbing, plating, enumeration, staining, selection of media and general aseptic technique.
- **NUTR-XXX1 - Functional Nutrition 1** (Semester 1 - 30.00 hours)
  In this course, students will study human physiology as it relates to diets and digestion. Dietary strategies, nutrition modification and current topics in nutrition, such as organics, food additives, fermented foods and gluten-free diets will be included in this course.
- **NUTR-XXX2 - Functional Nutrition 2 – Ingredients and Additives Practical** (Semester 1 - 45.00 hours)
  In a series of food labs, students will examine how theory transforms into practice. Labs will focus on nutritional and functional food products. Students will examine an array of food additives, synthetic products used for nutritional benefit, product quality, sensory characteristics and antimicrobial activity.
- **CULN-XXX1 - Test Kitchen** (Semester 1 - 45.00 hours)
  Food processing technology plays a vital role in the sector. How various commodities are produced and manufactured is key in new product development. This course will focus on equipment requirements, product knowledge, and processes involved in the development of food products.
- **RSCH-XXX1 - Research and Development** (Semester 1 - 60.00 hours)
  In this course, students will examine research purposes, design, planning, data collection, statistical analysis, evaluation and reporting. Students will examine research methods, which may include interview, panel focus group, observational, description, social network analysis, and other sociometrist methods. Student will discuss research topics including measurement, reliability and validity of inferences, and use of software for statistical analysis.
- **CULN-XXX2 - Foundations of Food Processing** (Semester 1 - 45.00 hours)
  This course will provide an overview of food processing methods, such as pasteurization, cooking, filling, cupping and packaging. Through plant tours, mentorships with industry partners and theory sessions, students will be exposed to the food manufacturing process with focus on concepts of food safety, product quality, continuous improvement, lean manufacturing, sustainability and waste management.
- **SFTY-XXX1 - Food Safety, Traceability, Quality Assurance/Legislation** (Semester 1 - 45.00 hours)

Agri-business and food processes are highly regulated, under provincial and federal legislation, to ensure safe, high quality products for consumers. This course will introduce food regulations regarding food safety, and good manufacturing practices, including HACCP.

- **COOP-1020 - Co-op Education Employment Prep** (Semester 1 - 6.00 hours)
  This workshop will provide an overview of the Co-operative Education consultants and students' roles and responsibilities as well as the Co-operative Education policy. It will provide student with employment preparatory skills specifically related to co-operative education work assignments and will prepare students for their work term.
- **BIOL-XXX2 - Food Microbiology 2** (Semester 2 - 45.00 hours)
  This course will focus on the encapsulation of techniques learned in previous food science courses. Each student will complete a research project in food microbiology with a focus food micro flora, molecular biology or biotechnology. Topics include mechanisms of bacterial gene control, industrial application of microbiology, microbial fermentation, macromolecules and food structure, human nutrition, food processing operation, flavours and colours additives.
- **CULN-XXX4 - Culinary Innovation - Marketing** (Semester 2 - 45.00 hours)
  Students will examine best practices in innovative agri-business and food processing. From concept to launch, students will study the fundamentals of innovation management, knowledge mining, research, concept scoping, and testing, packing, costing and strategic marketing. Students will develop an innovative food project plan, receiving input from their mentors, with an emphasis on the consumer and marketing aspects.
- **BUSI-XXX1 - Business Production Analysis and Forecasting** (Semester 2 - 45.00 hours)
  In this course, students will engage in forecasting, an estimate of future requirements based on historical data and other operational and market analysis factors that affect sales and production, to create directives for business product production.
- **CAPS-XXX1 - Capstone – Industry Engagement** (Semester 2 - 90.00 hours)
  Teams will work with industry partners from the Agri-business and food-processing sector on new product development from conception to market. Students will participate in the product development process, which includes formula development, quantity production, packaging and marketing.
- **CULN-XXX3 - Sensory Evaluation** (Semester 2 - 45.00 hours)
  Sensory education is the establishment of a fundamental approach to taste. This course will provide students the opportunity to train their senses and palates while acquiring the foundational language of taste vocabulary. Students will participate in excursions that further acquaint them with their own sensory experiences and that reinforce the importance of sensory experience in everyday life.
- **NUTR-XXX3 - Nutrient Analysis and Food Labeling** (Semester 2 - 30.00 hours)
  In this course, students will have the opportunity to conduct a nutrient analysis of their food product using advanced laboratory equipment, such as the bomb calorimeter, spectrometer, tiltrotors, incubators, shakers and stomachers.
- **COOP-XXX1 - Co-operative Education Employment Experience** (Semester 3 - 420.00 hours)
  Students will have the opportunity to experience the food production process from research and development to testing and manufacturing processes as well as marketing and business planning as they work alongside industry partners for a true work-integrated learning experience.

VLO Mapping

Code	1	2	3	4	5	6	7	8	9	10	11
CHEM-XXX1	X	X			X	X					
BIOL-XXX1	X	X			X	X					
NUTR-XXX1					X			X			
NUTR-XXX2	X	X	X		X	X		X			
CULN-XXX1	X	X	X		X	X		X			
RSCH-XXX1									X	X	X
CULN-XXX2				X			X	X		X	
SFTY-XXX1	X	X	X	X				X			
COOP-1020											
BIOL-XXX2	X	X			X	X		X			
CULN-XXX4			X				X			X	X
BUSI-XXX1							X		X	X	
CAPS-XXX1	X	X	X	X	X	X	X	X	X	X	X
CULN-XXX3	X			X	X						
NUTR-XXX3		X		X	X			X			
COOP-XXX1	X	X	X	X	X	X		X	X		

Certification/Accreditation

Certification type:

There is no recognition (None exist)

Attachments

None

Contact Information

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