



Feasibility Study
Food Processing Human Resources Council

EDUCATION & TRAINING ACCREDITATION PROGRAM



FOOD & BEVERAGE MANUFACTURING INDUSTRY

Standardizing Industry Training

March 2016

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1 Executive Summary

In October 2014, Food Processing Human Resource Council (FPHRC) commissioned Human Resource Systems Group (HRSG), to conduct a feasibility study to identify the need for an accreditation program for the Canadian food processing industry. The feasibility study consisted of conducting a market review, largely leveraging the results of the Labour Market Information (LMI) Study (2011)¹, conducted by the FPHRC, to identify certain indicators that would suggest a disconnect between course offerings and industry needs.

EXISTING TRAINING AND INDUSTRY SKILLS NEEDS

A review of existing food processing educational programs highlights that colleges and universities have identified that food production is an important area where training is required. However, while training programs are growing, this growth is not meeting the industry demands, both in terms of the number of students completing these programs and also in terms of the type of training they are offering. Most stakeholders surveyed indicated that the current number of spaces in post-secondary programs available does not adequately meet the needs of the industry. For example, while schools are focussing on teaching baking and pastry arts, the industry is demanding skilled workers such as butchers, industrial meat cutters and process control operators.

The lack of alignment suggests that the education providers would benefit from having a “benchmark” to assess its programs or courses against industry skills’ needs. Employer’s in-house training will also benefit from these benchmarks as a way to compare and upgrade their training to an industry standard. The competency-based standards, currently being developed by FPHRC, will serve as a benchmark for the training providers and employers to assess how their courses meet industry skills’ needs through an accreditation program.

Furthermore, consultation with college and university representatives identified that they like the idea of having an accreditation program that is based on the same set of standards as a certification program as their students would be better prepared to become certified after graduating from an accredited program. The cost of accreditation would not be as much of an issue if the value of the accreditation program was demonstrated.

PROPOSED ACCREDITATION PROGRAM

Currently, there is no Canadian-based accreditation program to assess training offered in food processing. A review of similar accreditation programs’ models for other sector highlighted that the most-fitting program for the industry right now, given the need to keep this program financially sustainable, financially affordable for the training providers and employers would consist of an online voluntary accreditation program without site visits. It is expected that the uptake and benefits of the accreditation will be larger from and for colleges, private trainers and in-house trainers than universities. Universities are less of a target audience for accreditation at this point. They concentrate in food science degrees which are offered by few universities and the accreditation programs for university programs are costly to administer and are expensive for institutions. Specific technical skills often provided by colleges, private trainers or in-house through particular courses, are where the shortage of skills remains and where a proposed accreditation program by the FPHRC is suggested.

¹ Food Processing Human Resource Council (2011).

The proposed program will accredit **training courses** offered by an academic institution, private trainer or employers' in-house training department. The accreditation program will also endorse **private trainers and employers' instructors** to assess their credentials to deliver the accredited training courses.

The proposed accreditation program will consist of the following phases:

- ❖ **APPLICATION:** Institutions or training providers complete an online application with information about the courses and instructors they would like to accredit.
- ❖ **ONLINE CURRICULUM MAPPING:** Training provider conducts a curriculum mapping exercise to assess how well the training meets the competency-based standards and submits worksheet to FPHRC.
- ❖ **EVALUATION:** FPHRC receives the training provider's curriculum mapping exercise and then has its team of evaluators to review the submissions.
- ❖ **GRANTING OF ACCREDITATION:** Accreditation Committee grants accreditation status if curriculum meets the assessment criteria.
- ❖ **ENDORSEMENT OF INSTRUCTORS:** Instructors will complete a self-assessment against specific criteria (competency-based standard, education, experience) to have their qualifications recognized to deliver a particular accredited course.

NATIONAL OCCUPATIONAL STANDARDS FOR FOOD MANUFACTURING

The Food Processing Human Resources Council (FPHRC) has recently completed the documentation of national occupations standards for the Food Manufacturing Sector. The NOSs cover skills in all the functional areas of food manufacturing companies (food safety, food production, supply-chain and logistics, research & development, maintenance of facility and equipment, and business and administration). National Occupational Standards are the foundation of accreditation programs.

In summary, the food and beverage sector will benefit from a streamlined, cost-effective, online, easy to understand, and reasonable priced accreditation program that assesses courses offered by academic institutions, particularly colleges, private trainers and in-house training providers.

The objective of the accreditation program will be to close the gap between the courses offered and the up-skilling needed by the industry in food production and food safety. This gap will be reduced by using the recently developed food manufacturing industry national occupational standards as the main assessment criteria for the accreditation program.

In addition, the use of the NOSs in the accreditation program will aid graduates from these programs to pursue certifications in food safety and food productions as the certification is based too on the national occupational standards.

2 Introduction

Food Processing Human Resource Council (FPHRC) is a national, non-profit organization dedicated to delivering the most up-to-date human resource information and industry driven training tools to support a safe and secure food supply, and a viable and competitive food processing sector². In October 2014, FPHRC commissioned Human Resource Systems Group (HRSG), to develop an accreditation program feasibility study for the food processing industry in Canada. The objective of this project is to present a **feasible approach and a potential business model for a national accreditation program** that will meet the need for a skilled workforce in the food processing industry.

A well-developed accreditation program is key to an industry that wants to standardize industry educational programs against National Occupational Standards (NOS). An essential step in developing such a program is to conduct a feasibility analysis. The outcomes of the research and industry consultation will be used to determine industry demand and assess the feasibility of developing and running the accreditation program.

REPORT SECTIONS

- ❖ **OVERVIEW OF ACCREDITATION:** Provides an introduction to accreditation and its benefits.
- ❖ **MARKET ASSESSMENT:** Reviews the characteristics and number of institutions that may be interested in accreditation. It also includes stakeholder consultation to establish whether or not academic institutions are interested in an accreditation program and identifies perceived benefits of such a program.
- ❖ **ANALYSIS OF NATIONAL AND INTERNATIONAL ACCREDITATION MODELS:** Provides a review of how similar sector councils or similar regulatory bodies have implemented accreditation programs.
- ❖ **ENVIRONMENTAL SCAN:** Identifies other players and proposes the best way to position the program.
- ❖ **ACCREDITATION RECOMMENDATIONS:** presents a framework of the accreditation program based on the factors identified above. A revenue model and program costs are included.

² Food Processing HR Council Request for Proposal, 2014.

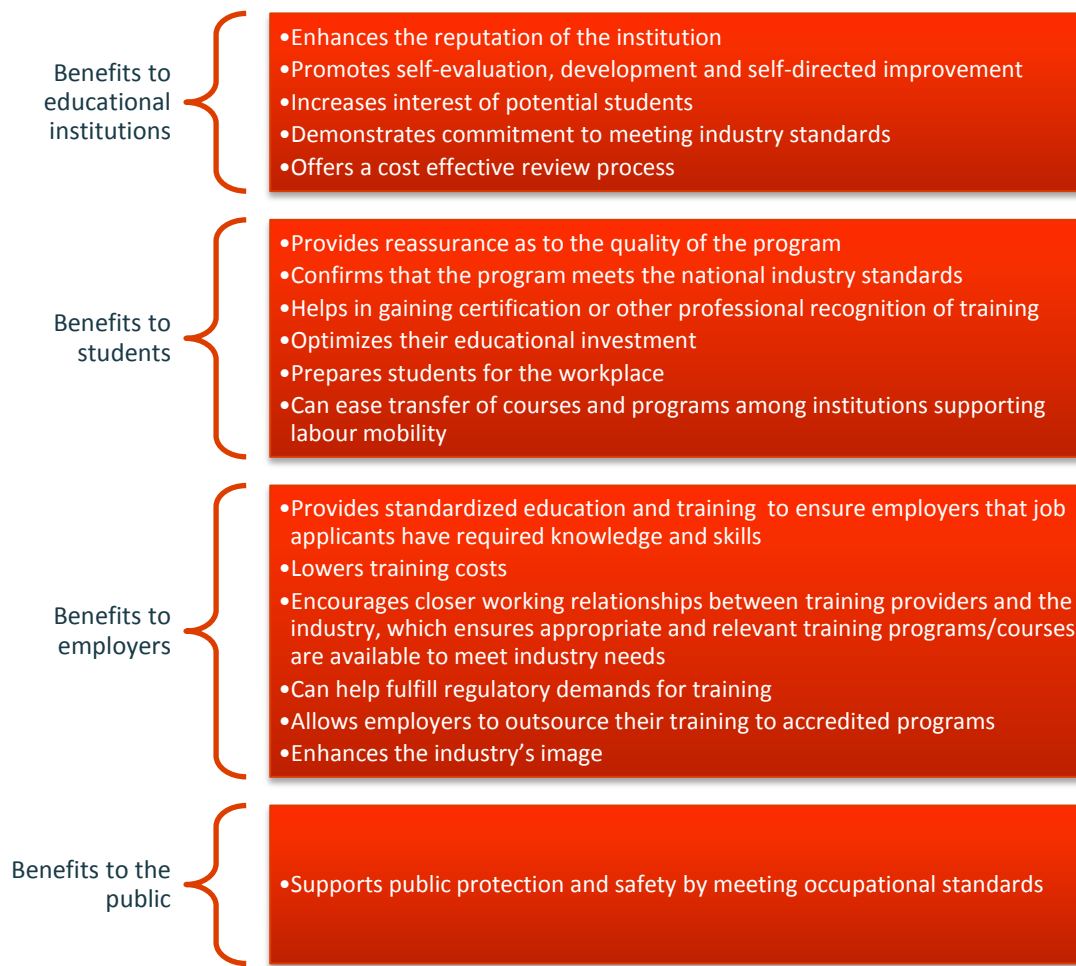
3 Overview of Accreditation

Accreditation is a process of quality assurance through which accredited status is granted to an educational or training course or program by an accreditation body. Accreditation status recognizes that a course or program meets a set of criteria established by the accreditation body. Accreditation criteria may include requirements for course/program administration, development and delivery, assessment, and/or instructor qualifications³.

The Food Processing Human Resource Council (FPHRC) has positioned itself to set the national standard for skills and knowledge requirements in its industry. Having developed the competency-based national occupational standards for the whole food processing industry based on industry consultation and best practices, FPHRC is well positioned to lead the establishment of a national accreditation program.

3.1 Benefits of Accreditation

Accreditation can have a number of benefits both for the educational institutions, students, employers, as well as the public.



³ The Alliance of Sector Councils (TASC). (n.d.).

3.2 Principles for Accreditation Programs

According to the Alliance of Sector Councils (TASC), there are some key principles that any accreditation agency should adhere to and apply consistently throughout the planning, development, implementation and maintenance of their program⁴:

- The accreditation should be accessible, equitable and fair to all candidates.
- The information should be developed and presented in a coherent, rigorous and consistent manner.
- Personal information should remain confidential and access restricted only to authorized individuals.
- A consensus process should be used to make decisions.
- Information should be current, relevant and valid.
- Program should be harmonized with existing relevant national and international policies, procedures and requirements to ensure consistency and quality, as well as greater labour mobility.
- Decisions should be impartial and free of bias, undue influence or prejudice.
- Information provided to stakeholders should be open and transparent.
- There should be representativeness of stakeholders at all phases.
- The program should be sustainable and enough resources (human, financial and infrastructure) should be available for the program to continue and prosper.
- Professional accreditation is voluntary.

Similarly, the Association of Accrediting Agencies of Canada (1999)⁵ offers *Guidelines for Good Practice of Academic Accreditation of Professional Programs*. The guidelines are as follows:

- The accreditation process is transparent, consistent, fair, and maximizes objectivity and confidentiality.
- The purpose of accreditation status is to maintain the quality of programs and to promote their continuing improvement.
- The accreditation agency is an autonomous organization from the educational program under accreditation.
- The accreditation agency and its committees include relevant stakeholders to accreditation and the occupation/profession.
- There are sufficient financial, human, and other services to carry out the operations of accreditation effectively.
- The accreditation review is held at the site(s) of the educational program under review and includes input from relevant stakeholders.
- Qualified peer reviewers conduct the accreditation review.
- There is a mechanism for training peer reviewers.
- There is a clear description of the accreditation process, including the goals and the specific steps taken by all parties in the accreditation process.
- There is a time-defined accreditation status and requirements to maintain the status.
- There are mechanisms to define accreditation status.

⁴ The Alliance of Sector Councils (TASC). (n.d.).

⁵ Association of Accrediting Agencies of Canada (June, 1999).

3.3 Features of High-Quality Accreditation Programs

In their document *Setting the Standard*⁶, TASC delineates guidelines for establishing accreditation programs. TASC, in conjunction with the Canadian Standards Association⁷ (CSA), developed voluntary guidelines to provide practical guidance aligned with common business practices. The intent of the guidelines is to provide protocols to maximize efficiency, minimize cost, and optimize the benefits of a harmonized system. The guidelines outlined by TASC are intended to be flexible and provide a starting point for the development of accreditation programs. The TASC guidelines were used to inform best practices for accreditation programs.

3.4 Planning of Accreditation Programs

Purpose, Need and Scope

Before developing the accreditation program, its purpose need and scope need to be established. A sector scan and industry consultation needs to be conducted to:

- Identify if there is a need for the program.
- Identify the business objectives that the program will support.
- Align accreditation requirements with the requirements of certification programs.
- Ensure that the program fosters continuous quality improvement and quality assurance of education or training for programs/courses where certification programs do not exist.
- Establish if educational/training course/program is a requirement of certification.
- Establish what the scope of the program will be, e.g., to accredit institutions, schools, programs, courses, etc.
- Establish an accreditation framework.

Organizational Structure

- Ensure appropriate governance structure and policies and procedures are developed to ensure impartiality of the process.
- The accreditation body may also be a certification body or provide education or training; conflicts of interest should be addressed in these cases.
- An Accreditation Committee needs to be established to provide governance for the accreditation program.
 - ♦ Responsibilities involve establishing policies and procedures, including activities related to eligibility, development, administration, evaluation of assessments, and reviewing complaints and appeals.
 - ♦ Should include a Chair, Vice-Chair, program manager, contractors, and appropriate stakeholder representation. All points of view pertinent to the program should be represented in reasonable proportion.
 - ♦ Establish selection procedures for board members.
 - ♦ Activities of council involve reviewing final assessor reports, making final assessment decisions and making accreditation decisions.

⁶ The Alliance of Sector Councils (TASC). (n.d.).

⁷ Canadian Standards Association is an independent, not-for-profit membership association serving business, government and consumers in Canada, and has worked with several Canadian Sector Councils in the development of accreditation programs.

Accreditation Framework

Industry consultation should determine which accreditation framework is the most feasible and best meets the objectives of the industry. Resources, budget, and schedule should be considered in the decision.

Types of possible assessment processes include (not mutually exclusive):

- First-party assessment⁸: Internal assessment conducted by education/training provider; basis for self-declaration.
- Second-party assessment: Assessment conducted by individuals with a vested interest (e.g., learner, experienced workers, certification body, other relevant stakeholders).
- Third-party assessment: Assessment conducted by independent accreditation body that may or may not be formally recognized by a national or provincial body to have the authority to assess the education/training program/course.
- Complaint-driven: Reactive assessment process in which public awareness is critical.
- Surveillance and Registry System: Periodic surveillance assessment (i.e., audit) is conducted to renew accreditation; accredited organizations are approved and added to a publicly available registry.

Work Plan

A work plan should be developed to identify:

- Human resources, such as staff, contractors and subject matter experts required to develop, implement and manage the accreditation program.
- Budget and schedule related to program development, maintenance, translation costs, cost of software vs revenue expected from the industry and/or other sources.

Accreditation programs may be based on a subsidization model (e.g., from government or industry), cost-recovery model (i.e., accreditation fees sustain program), or revenue-generating model (i.e., accreditation fees required to sustain program).

Communications Plan

A communication plan should provide guidance to all individuals involved in accreditation program development (staff, committee members) about what information should be communicated about the program development, what information is kept confidential, what messages should be communicated, and to whom these messages should be communicated. A well-developed communication plan ensures openness and transparency of program development process and provides opportunity to get buy-in from key stakeholders early in the process.

3.5 Development of Accreditation Programs

Accreditation programs need to have policies, procedures, rules and guidelines established that govern the accreditation process. In addition, they need to have the staff to implement, manage and sustain the program.

Resources

⁸ This process in and of itself is normally not considered sufficient for being granted accreditation.

- Staff need to be assigned to:
 - Review and process applications.
 - Implement and maintain the applicant management system, if one is established.
 - Manage any contractor requirements.
- Assessors need to be recruited selected and trained in conducting the assessments.
 - Assessors should have appropriate qualifications, occupational expertise, understanding of best practices in assessment (professionalism, ethics, communication skills, assessment procedures).

Policies and Procedures

Policies and procedures need to be developed that are transparent, objective, impartial and fair. Some of these policies include:

- Granting accreditation (eligibility criteria, assessment process).
- Maintaining, renewing, suspending, or withdrawing accreditation.
- Developing and maintaining accreditation criteria and assessment methods.
- Resolving appeals and complaints.
- Maintaining the accreditation program.
- Using contractors.
- Ensuring impartiality.
- Preserving confidentiality.
- Storage and retrieval of records.

Accreditation Criteria

Criteria and guidelines for accreditation need to be developed for education/training and may include:

- Policies and procedures for the effective administration of the course/program:
 - Course/program design, development, evaluation, and presentation
 - Verification of learner prerequisite knowledge or experience
 - Instructor selection, verification of competence, continuing education/training, and regular performance evaluation
 - Learner records
 - Learner assessment instruments and pass/fail criteria
 - Operation and administration of assessments and applicable re-assessment, including security and confidentiality
 - Issue and withdrawal of certificates of successful completion
 - Storage and disposal of records
 - Methods for considering learners' evaluations of course/program and of instructors
 - Complaints and appeals
 - Granting of certificate/course/diploma
 - Confidentiality
 - Revisions made to programs
- Course/program development and delivery criteria:
 - Guidelines for assessing courses against standards, language benchmarks, and/or essential skills

- Defining and measuring learning outcomes
- Course/program content should provide sufficient information to support and reinforce learning outcomes
- Course design, which may include best practices such as adult-learning and learner centered approach
- Prerequisites that are clearly communicated
- Version control protocols, i.e., maintain a defined control and amendment process for tracking revisions
- Course delivery modalities, such as: instructor-led, independent e-learning, internships, etc.
- Develop and adhere to policies on instruction hours and allow for sufficient time for learners to achieve learning outcomes
- Feedback mechanisms such as providing anonymous evaluation of course/program and instructor
- Assessment Criteria:
 - Providing learner support
 - Developing methods to assess learning outcomes
 - Assigning a final grade
 - Learners who do not pass an assessment should be permitted at least one reassessment
- Instructor Criteria:
 - Number of instructors
 - Instructor competencies and prerequisites

Accreditation Process

Accreditation body should document and make available information related to the accreditation process. Information about the accreditation process may include:

- Course/program requirements for accreditation (i.e., meeting CB-NOS).
- Application process and requirements:
 - General information about education/training provider
 - Title of course/program for which accreditation is sought
 - Title of related certification program, if applicable
 - Statement that education/training provider abides by requirements to the use and maintenance of accreditation
- Type and nature of assessment and assessment process. For example:
 - Self-assessment – Education/training provider conducts an internal self-assessment to determine whether course/program meets criteria of the accreditation body, submits materials to accreditation body.
 - On-site assessor review – Assessors from accrediting body assess the course/program through an on-site assessment.

- Recommendation - Assessors submit a draft report to Accreditation Committee detailing results of review and whether course/program meets accreditation criteria. Draft report includes recommendations and opportunities for improvement.
 - Review - Education/Training provider reviews draft report and is provided an opportunity to comment. Comments are considered and a final report is issued to the accreditation body.
 - Decision – Accreditation Committee reviews final report, makes decision and notifies education/training provider
- Conditions for granting, maintaining, and renewing accreditation:
 - Accreditation granted to providers meeting the assessment criteria
 - Accredited institutions may be added to a public registry
 - Accredited institution is permitted to use name/mark of accreditation body in communications and promotional materials
 - Policies and procedures should be developed for periodic reaccreditation/review of accredited courses/programs. Procedures may be less rigorous than initial accreditation procedures
 - Reaccreditation criteria and frequency should be developed during the initial design of the accreditation program
 - Conditions for suspending or withdrawing accreditation
 - Programs/courses are monitored periodically to ensure that they are compliant with accreditation criteria. Withdrawal of accreditation could occur under surveillance (optional component – decision to include surveillance should be made at development stage)
 - Policies and procedures should be in place to specify conditions and circumstances under which accreditation can be withdrawn
 - Methods and frequency of surveillance (audits) should be determined by the Accreditation Committee
 - Policies and procedures should be developed for resolution of appeals and complaints

3.6 Implementation of Accreditation Programs

Promotion

Accredited programs/courses should clearly advertise that they have been accredited by the accreditation body. Advertisements for courses/programs should also clearly identify whether the program is a partial or whole requirement of accreditation program and/or whether the program prepares learners for the certification process and the occupation. Advertisements may also reinforce support or endorsement by the industry or a professional association of the course/program.

3.7 Maintenance of Accreditation Programs

Systematic Review and Maintenance

Maintenance policies and procedures are needed for periodic review and evaluation of the accreditation process, criteria, and assessment methods.

Program evaluation may include:

- Assessment methods that can be evaluated to ensure continued quality, validity, and reliability.
- Tracking of learners to confirm that their performance meets industry/sector and occupational standards/expectations.
- Auditing of the program to ensure it meets sustainable financial goals and to identify areas for improvement.

When accreditation program changes are made, stakeholders should be informed.

3.8 Summary

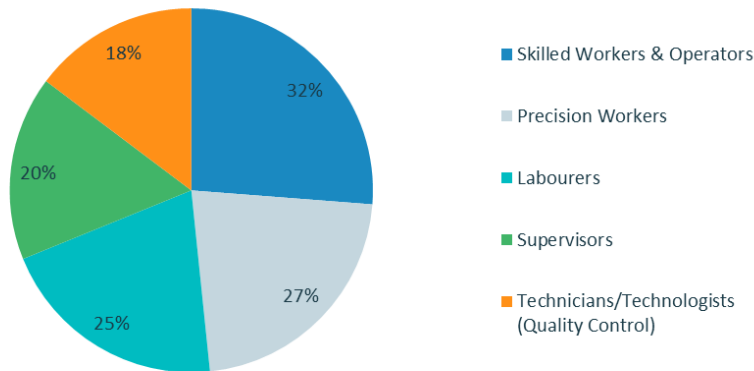
The overview section illustrates the variety of possible accreditation programs that could be developed. The best accreditation programs are tailored to meet the industry need. As such, each program needs to be designed to be feasible in terms of time and effort required to both submit and review materials, and resources required to maintain and update the program.

4 Market Assessment

Conducting a market assessment is the first step in identifying whether there is a need for an accreditation program. The market assessment serves as an information source to identify the history and future outlook for the sector, including how the market is segmented and how many institutions are eligible for accreditation. This information will allow FPHRC to better position its program based on the market need.

According to a Labour Market Information (LMI) Study (2011)⁹, 59% of employers surveyed indicated that a primary HR challenge is the lack of candidates with proper training, resulting in difficulty hiring for specific occupations. The occupations for which employers face the biggest challenge in finding appropriate candidates are represented in the figure below.

Occupations Most Challenging to Fill with Qualified Candidates



In the same study, 13.8% of employers also indicated that they faced difficulty in hiring individuals with post-secondary education¹⁰. Understanding the widespread challenge of employers in the industry in attracting individuals with the necessary skills, abilities and education to perform on the job is a valuable starting point in helping establish the need for an accreditation program.

4.1 Industry Overview

There are several factors that are important in predicting interest and the potential success of an accreditation program, including: number and types of food production education providers, age and education level of employees and types of skills required. This section will discuss each of these factors and their impact on the proposed accreditation program.

4.2 Food Processing Training Programs

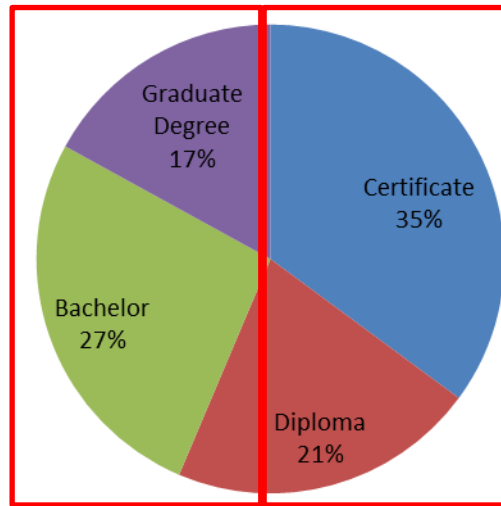
According to the LMI study, there are 38 colleges and universities offering a total of 94 programs devoted to the Agri-food sector across Canada. The programs range from certificate to PhD. Fifty three of these programs offer courses at the certificate or diploma level. Over 40% of the certificate or diploma level courses teach Food Processing (Food Handling, Manufacturing, Baking, Cutting), with the vast majority focussing on Baking and Pastry Arts. The other half of the programs focus on Food Science/Technology (21%), Nutrition (17%) and Food Safety

⁹ Food Processing Human Resource Council (2011).

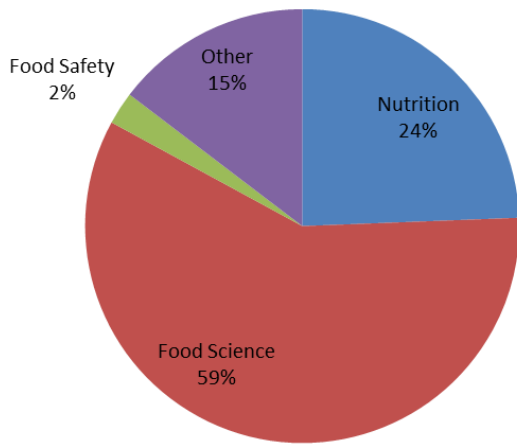
¹⁰ Ibid

(13%). The other 41 programs offer university level courses, which overwhelmingly focus on Food Science (59%) followed by Nutrition (24%), with a small percentage (2%) dedicated to Food Safety. The “Other” category for all program levels focuses on regional specific needs such Fisheries Engineering, Agro-economics and Production Management. The figure below illustrates the programs and areas of study.

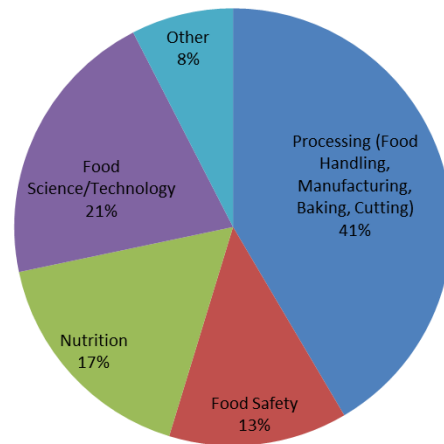
Type of Program (n = 94)



Program Focus Graduate and Post-Graduate (n = 41)



Program Focus Certificate or Diploma (n = 53)



The program breakdown highlights that colleges and universities have identified that food production is an important area where training is required. However, while training programs are growing, this growth is not meeting the industry demands, both in terms of the number of students completing these programs and also in terms of the type of training they are offering.

Most stakeholders surveyed indicated that the current number of spaces in post-secondary programs available does not adequately meet the needs of the industry. For example, while schools are focussing on teaching baking

and pastry arts, the industry is demanding skilled workers such as butchers, industrial meat cutters and process control operators. The lack of alignment suggests that the education providers would benefit from an accreditation program that reflects the industry and serves to align the training providers with industry needs.

4.3 Increases in Technology

The LMI report also highlights the need for educated production workers to meet the growing need for skilled, technologically proficient employees. As technology improves and production practices become more automated, opportunities for those trained to operate new advanced technology will increase. Maintenance positions will also become critical, as equipment failures have major impacts on production lines and productivity. In order to meet high food safety and quality standards, there will be an increased demand for training in food science technology, quality assurance, Hazard Analysis Critical Control Point (HACCP) and quality management.¹¹

4.4 Age of Employees

The need for training providers to be responsive to industry needs is further highlighted by the difficulty in hiring “job-ready” production workers to replace the high rate of retirement in the industry. According to the LMI study, 3,500 employees industry-wide retire per year (1.5% of the total workforce) and it is estimated that 13% (32,500) will retire in the next few years. Accredited programs would ensure that production workers are “job-ready” and reducing or illuminating training time for employers.

4.5 Education Level

Education level of employees in the food and beverage processing industry is an important factor in determining the potential success of an accreditation program. Table 1 lists the education levels of production workers across Canada.

Table 1: Education Levels of Production Workers across Canada

Highest Level of Education Completed	Labourers ¹²	Process Control and Machine Operators, Food and Beverage ¹³	Industrial and Meat Cutters, Poultry and Related Workers ¹⁴	Butchers and Meat Preparers ¹⁵	Fish Plant Workers ¹⁵	Average
Less than high-school	39.4%	25.9%	38.4%		55.0%	39.7%
High-school	31.7%	35.3%	28.8%		28.8%	31.2%
Post-secondary	26.5%	35.1%	30.7%		14.4%	26.7%
Bachelors	2.4%	3.7%	2.2%		1.8%	2.5%

Almost a third (31.2%) of employees have completed a high school education and would therefore be eligible for, and benefit from skills upgrading from education and training programs through accredited institutions. Another third (29.2%) have a post-secondary education or above.

¹¹ [ibid](#)

¹² [ibid](#)

¹³ [ibid](#)

¹⁴ [ibid](#)

¹⁵ [ibid](#)

As new technologies are being introduced into the workforce, it is fundamental that production workers have the education necessary to keep up with technological advancements. The respondents from the LMI study stated that it is difficult to find employees with necessary skills as there are no specific secondary or postsecondary training programs for most labour positions. Some of the barriers to training include the availability of programs, either due to transportation costs, lack of instructors, lack of programs available in the area, or lack of programs available for specific skills that were required. As such, colleges and universities may benefit from partnering with food technology centres that offer on-line courses or assist in the creation of customized training programs in food processing. For example, essential skills or language training can be offered on-line and can serve as a foundation for programs offered by colleges and universities. These people would benefit from advanced training in the food and beverage industry that is aligned with best-practices and latest industry standards through an accredited program.

4.6 Stakeholder Consultation

In support of market research, stakeholders in the food production industry were consulted through phone interviews to determine the feasibility of the accreditation program. The stakeholders were from colleges and universities from across Canada. For a breakdown of the stakeholders consulted, see [Appendix A](#).

The stakeholder consultation revealed that the factors that would influence an institution to accredit its courses or programs are primarily: **value of the accreditation** (i.e., what does it bring to the program), **time commitment**, and **cost**.

For **universities**, for an accreditation program to be successful, it needs to be seen as adding value to the students in terms of making them more employable, and the accreditation program needs to be recognized internationally in order to attract students from across the globe. Since **traditional accreditation** programs are quite resource intensive for the schools, i.e., compiling materials for submission and review, the schools need to see that the industry is demanding an accreditation program in order for them to invest the time, resources and costs required. One university with a food science programs sees the Institute of Food Technologists (IFT) in the US as a desirable recognition to have. The IFT offers a Certified Food Scientist (CFS) designation, which is currently the only globally-recognized certification for food scientists¹⁶. The CFS program is officially endorsed by the Australian Institute of Food Science Technology (AIFST) as well as the Canadian Institute of Food Science and Technology (CIFST). Earning the CFS consists of individuals meeting certain academic and work experience requirements and passing an exam. Having courses aligned to the standards set by the IFT serves to attract domestic and international students and raises the profile of the program. The CFS is a certification program and not an accreditation program. However, universities will spend significant effort and resources ensuring that their food science curriculum is recognized by the IFT in order to provide the students with the necessary knowledge and skills to pass the CFS. Currently, there are only four programs across Canada that are IFT recognized. This 'recognition'¹⁷ costs several thousand dollars, but the faculty and staff effort that it takes to compile all the materials together is much more resource intensive – up to \$50,000.

Representatives from **colleges** interviewed liked the idea of an accreditation program for their food processing courses and programs. The value of the accreditation program to colleges seems to depend on whether the industry takes the lead and endorse the competency-based standards.

¹⁶ Institute of Food Technologists. (n.d.).

¹⁷ Institute of Food Technologists does not have an accreditation program.

Accreditation may be more valuable with **employers** who provide their own training, and independent or private training providers. Many employers provide their own training programs especially at the production level. Currently, it is very difficult to identify the quality, breadth and depth from what private training providers are offering. For example, there are a variety of HACCP training courses available, but it is difficult to identify the level of the course offered (e.g., entry level or advanced) and what material it covers. In this instance, mapping against occupational standards would be very beneficial.

The value of developing an accreditation program that is based on the same set of standards as a certification program was very appealing to the stakeholders as they liked the idea that their students would be better prepared to become certified after graduating from an accredited program. The stakeholders indicated that the cost of accreditation would not be as much of an issue if the value of the accreditation program was demonstrated.

4.7 Summary

The market assessment highlights the need for standardized and targeted education in the food processing sector. The LMI study highlighted the fact that, while there are programs in food processing, they are not necessarily meeting industry needs. With the high rate of retirement, increases in technology and low education levels of the production workers, schools and training providers need to have a mechanism to ensure that they are aligned with the industry. The stakeholder consultation confirmed that having an accreditation program would assist them in benchmarking their courses against industry standards and ensure that they are offering programs that are beneficial to both individuals and the industry.

5 Accreditation Models

Several Canadian and International accreditation models are reviewed to identify best practices and recommendations for the FPHRC accreditation framework. Looking at what others are doing regarding accreditation, will assist in determining the most appropriate accreditation framework for FPHRC.

To facilitate comparison of national and international accreditation models, the models were separated into three categories:

1. Canadian Sector Councils,
2. Canadian Associations and Organizations Accrediting Bodies, and
3. International Associations and Organizations Accrediting Bodies

5.1 Canadian Sector Councils

Accreditation programs were located for four Canadian Sector Councils. The Canadian sector councils covered are:

- Canadian Council for Aviation and Aerospace (CCAA)
- Canadian Council of Technicians and Technologists (CCTT)
- Canadian Supply Chain Sector Council (CSCSC)
- Motor Carrier Passenger Council of Canada (MCPCP)

The primary objectives of each Council's accreditation programs are outlined below. A summary of the major components of each accreditation program (i.e., governance structure, standards for accreditation, accreditation criteria, and accreditation process) as well as each program's fee structure and accreditation period are provided in [Appendix B](#).

5.1.1 Canadian Council for Aviation and Aerospace¹⁸

The Canadian Council for Aviation and Aerospace (CCAA) provides an accrediting service to vocational training organizations, SME trainers, and company training departments. CCAA accredited organizations or individuals are licensed to access CCAA skill development products such as occupational standards and training programs.

CCAA's mandate is to direct the development of Instructor Guides/curricula in response to the training needs of the aviation maintenance and aerospace industry. These instructor guides are based on the requirements outlined in the National Occupational Standard (NOS) for specific occupations and are used in post-secondary training organizations and employer-based training departments for aviation-related occupations. CCAA's accreditation process measures the extent to which a training organization's program meets or exceeds the requirements specified in the CAMC Instructor Guide for that discipline.

Part of the guide is the CCAA's Master Teaching Plan (MTP), which is a comprehensive lesson plan for use by instructors in the classroom. The lesson plan:

- is designed to organize all the components of a program under one cover

¹⁸ Canadian Council for Aviation and Aerospace (n.d.).

- provides a wealth of material and info, including overheads, self-evaluations, tests and quizzes, student handout materials and practical assignment guidelines
- is broken down into stand-alone modules to enable flexibility for instructors

CCAA also accredits existing training programs and audits training organizations to ensure consistent delivery of the CCAA National Training Standard.

5.1.2 Canadian Council of Technicians and Technologists¹⁹

The Canadian Technology Accreditation Board (CTAB) is a standing committee of the Canadian Council of Technicians and Technologists (CCTT). The CTAB provides the evaluation of applied science and engineering technology programs in Canada. The CTAB develops, coordinates and manages the national accreditation program for applied science and engineering technology programs. The CTAB is composed of 16 members representing each of the CCTT's 10 Constituent Member organizations plus the Federal Government's Department of National Defence, the National Council of Deans of Technology, and the Canadian Society of Chemical Technology.

Accreditation is based on meeting 10 general areas:

- Program profile
- Adherence of program objectives to Canadian Technology Standards (i.e., National Technology Benchmarks)
- Program duration
- Credentials, experience, and professional development of the instructional staff
- Quality of the training facilities and equipment
- Student work quality
- Procedures to ensure the currency of technical equipment
- Activities of an Advisory Committee
- Existence of regional variations from Canadian Technology Standards
- Satisfactory graduate employment

CCTT uses a 2-part process to assess programs:

Part 1: Self-Study

- Organization seeking accreditation evaluates its own compliance against a national series of outcome requirements.
- Program demonstrates how it meets/exceeds the National Technology Benchmarks.
- Key areas examined include list of program strengths, course outlines, evidence of student work, organization's governance, faculty qualifications, and management of the program.

Part 2: Peer Review (on-site review)

- External reviewers evaluate the program through an on-site visit.
- During the on-site visit, reviewers meet with a broad spectrum of individuals, such as faculty, students, graduates, advisory committee members, and senior administration to discuss their experiences, perceptions, and expectations.

¹⁹ Canadian Council of Technicians and Technologists (2015).

- Findings from evaluation are summarized in a report that focuses on the strengths and weaknesses of the program. Recommendations and opportunities for improvement are made to assist the organization in curriculum development.

To be considered for renewal, the Educational Agency can submit a variance report every four years highlighting all changes made to the program since the previous evaluation.

For quality assurance, every year up to 10% of all accredited programs selected for a random audit. No program will go more than 10 years without a site visit.

5.1.3 Canadian Supply Chain Sector Council²⁰

The Canadian Supply Chain Sector Council (CSCSC) offers the National Accreditation Program (NAP), which recognizes supply chain-related educational offerings that meet the Canadian Supply Chain Sector Council's national standard. The NAP accredits both individual courses and full programs. The CSCSC's Accreditation Review Panel is composed of 19 members representing industry and educational institutions across Canada.

CSCSC Standards for Accreditation are based on meeting the requirements of five key areas:

- Course/program needs assessment requirements
- Course/Program design requirements
- Course/Program development requirements
- Course/Program delivery requirements
- Student evaluation requirements

Within these five key areas, the provider must describe how the course/program relates to one or more existing CSCSC Occupational Standard(s) (OS). If the course program does NOT relate to an existing CSCSC OS, the Provider should:

- identify related existing National Occupational Classifications, Essential Skills Profiles, occupational standards, and/or other occupational information
- demonstrate harmonization of the course/program with related existing National Occupational Classifications, Essential Skills Profiles, occupational standards, and/or other occupational information
- provide a description of the occupation
- identify which tasks are addressed in the course/program, along with the knowledge and skills required to competently perform each task
- identify which tasks are not addressed in the course/program, providing rationale for the exclusion of any tasks, knowledge, and/or skills that are involved in performing the occupation, but are not addressed in the course/program

There are two main steps in the CSCSC accreditation process:

Step 1 - Register as a provider (online form)

Step 2 - Pay application fee and complete application submission, including:

- application form
- evidence grid

²⁰ Canadian Supply Chain Sector Council, (n.d.).

- required attachments
- self-assessment

Applicants are notified regarding the accreditation decision within 8 weeks of the application deadline.

Reaccreditation is required every three years. To maintain accreditation, the provider must provide evidence of continued compliance with the Standards for Accreditation. To avoid expiration, providers must apply for accreditation renewal at least one application deadline prior to expiry.

5.1.4 Motor Carrier Passenger Council of Canada²¹

The Motor Carrier Passenger Council of Canada (MCPCC) has established an Accreditation Program for the training of Professional Bus Operators based on the National Occupational Standards (NOS) for Professional Bus Operators. The MCPCC is governed by an Accreditation and Certification Board composed of 19 members. Accreditation is based on an assessment of whether the training program covers 10 key areas outlined in the National Occupational Standards, specifically:

- Pre/Post operations
- Vehicle operations
- Customer relations
- Administration
- Emergency operations
- Urban operations
- School bus operations
- Intercity operations
- Tour and charter operations
- Accessible service operations

The MCPCC Process for Accreditation is as follows:

1. Obtain the accreditation package through the MCPCC website or hard copy. The package consists of:
 - Documents to complete on-line: application, training program self-assessment record, accreditation training declaration form
 - Required attachments: course materials
 - Reference materials: code of ethics, policies and procedures manual
2. Complete and submit application package to MCPCC. Enclose applicable fee.
3. MCPCC registrar reviews all forms, documentation and training materials to ensure all requirements of NOS are met. If accepted, application is forwarded to Accreditation and Certification Board for review. If not accepted, applicant is notified of deficiencies.
4. Board reviews application, makes final decision, and notifies MCPCC.
5. MCPCC board grants accreditation.

²¹ Motor Carrier Passenger Council of Canada, (n.d.).

Accreditation fees are based on whether the applicant is a bus company or an educational institution. The fee for an educational institution is \$5,000. Fees for bus companies are based on number of bus operators and are outlined below:

Number of Operators	Fee
Less than 50	\$250
51 to 200	\$500
201 to 400	\$1,000
401 to 1,000	\$1,500
over 1,000	\$2,500
Additional Specialty	\$100

5.2 Canadian Associations and Organizations Accreditation Bodies

The following section provides a review of accreditation programs employed by professional associations and organizations in Canada. These organizations and associations differ from the sector councils in that they are solely focused on accreditation. The accreditation programs range in focus from the accreditation of services (e.g., healthcare and human services) to the accreditation of courses/programs. The programs reviewed are those that are long-standing and/or have components that would relate to FPHRC.

The Canadian association and organization accreditation bodies covered are:

- Accreditation Canada
- Canadian Accreditation Council (CAC)
- Canadian Forestry Accreditation Board (CFAB)
- Canadian Information Processing Society (CIPS)

The primary components of each association or organization are described below. A summary of the major components of each accreditation program (i.e., governance structure, standards for accreditation, accreditation criteria, and accreditation process) are detailed in [Appendix C](#).

5.2.1 Accreditation Canada²²

Accreditation Canada is a not-for-profit, independent organization accredited by the International Society for Quality in Healthcare (ISQua). Accreditation Canada provides national and international health care organizations with an external peer review process to assess and improve the services they provide to their patients and clients based on standards of excellence. Accreditation Canada offers the Accreditation Primer, to assist organizations new to accreditation to prepare for the accreditation process, and accreditation program called Qmentum. They also offer a Distinction Program that recognizes clinical excellence in a specific health care field.

Accreditation Primer

- Provides an initial assessment of the basic elements of safety and quality
- Helps organizations to establish the necessary supports, structures, and quality and safety processes to successfully participate in accreditation
- Provides a foundation for implementing quality improvement efforts that will continue throughout the accreditation process

²² Accreditation Canada <http://www.accreditation.ca/>

- Helps organizations assess key areas of quality and safety and move to the Qmentum accreditation program

The Accreditation Primer Standards address 10 key areas specific to health care. The Primer takes about 12 to 18 months to complete. The accreditation period is two years, during which time the organization continues working on their quality improvement goals towards Qmentum.

Qmentum

Qmentum is designed to focus on quality and safety throughout all aspects of an organization's services. Qmentum follows a similar process to the Accreditation Primer, but uses a broader range of standards and offers a more in-depth assessment.

Accreditation is determined through assessment of all aspects of an organization's operations:

- System-wide areas assessed during accreditation include governance, leadership and management, infection prevention and control, and medication management.
- Population-specific and service excellence standards address specific sectors, services, conditions, and populations.

There are four sets of standards at the core of the program:

- Governance
- Leadership
- Infection Prevention and Control
- Medication Management

Accreditation process steps:

1. Become familiar with the program resources (standards and education materials)
2. Participate in education and training
3. Administer the self-assessment (optional) and the performance measure instruments (Worklife Pulse Tool, Canadian Patient Safety Culture Survey Tool, and Governance Functioning Tool)
4. Take action on processes and practices identified as needing improvement
5. Undertake the on-site survey, which can last anywhere from two to five days, depending on the size of the organization and the services offered
6. Receive the Qmentum accreditation decision and Accreditation Report
7. Use the results to guide ongoing quality improvement activities

Three accreditation reports are submitted to Accreditation Canada at various times during the accreditation process. This procedure helps maintain an ongoing link between the organization and Accreditation Canada and shows the progress achieved throughout the process. There is a four-year accreditation cycle with the Qmentum accreditation program.

5.2.2 Canadian Accreditation Council²³

Canadian Accreditation Council (CAC) is a Canadian-based non-profit accrediting body that develops standards for accreditation of human service programs and accredits a wide range of human service programs for children, adults, and families. CAC accredits programs within organizations, not the whole organization. They also develop and provide training to support accreditation. The accreditation program is governed by an Accreditation Panel, which is comprised of peer volunteers.

The accreditation program uses the CAC standards for assessment, which are developed in consultation with service providers, persons served, and representatives of Aboriginal communities, academics, outcome measure specialists and community members. There are two types of standards: Generic Standards that apply *across* all programs and Program Standards that apply to specific programming areas.

Accreditation is based on meeting the Generic Standards, focusing on nine major components of service delivery:

- Leadership & Governance
- Financial Management
- Information Management
- Evaluation & Quality Improvement
- Ethics
- Rights
- Health & Safety
- Administration & Management
- Service Delivery

Human service programs can also have a particular designation by meeting Program Specific Standards.

CAC accreditation process steps:

1. Information is shared regarding the process, costs, supports available and timelines. (15-18 months prior to site visit)
2. The Application and Agreement Form, and Application Fee, are submitted to the CAC office. Timelines are finalized. (12-15 months prior to site visit)
3. The program undergoes a Self-Study process where policies are developed and relevant staff are informed and trained in the process. This may take up to 6-12 months. CAC is available throughout the process for support. (6-12 months prior to site visit)
4. Process Fees are invoiced upon receipt of the signed agreement with 50% of the fee. Due within 60 days and the balance due with the submission of the pre-site materials 4 to 6 months prior to the on-site visit.
5. Pre-site materials (policies, narratives and supporting documentation) are sent to the peer review team three (3) months prior to the on-site review.
6. At least 8 weeks prior to on-site visit, the peer review team participates in a pre-site meeting to review the materials and provide feedback to the program staff. Details for the on-site review are finalized.
7. The On-site Peer Review is conducted, may involve interviewing board members, staff, contractors, direct service volunteers, students and person served, and reviewing files. (1-4 days on site)
8. Prior to the team leaving the site, hold an Exit Interview in which the team shares a summary of findings and identifies areas found to be non-compliant to standards.

²³ Canadian Accreditation Council <http://www.cacohs.com/>

9. If there are concerns or conflicts between the team and the organization, an appeal may be made to the Appeal Committee, within 14 days of the exit interview and prior to submission to the Accreditation Panel.
10. On-site daily fees are invoiced and need to be paid prior to presentation to the Accreditation Panel.
11. Accreditation Panel reviews the information presented and makes a decision to either:
 - Request further information;
 - Grant accreditation;
 - Defer accreditation to allow organization to become compliant with standards; or
 - Deny accreditation for programs with extensive work needed.

The program has 30 days to appeal the decision.

The fee structure associated with this program is more complex than others reviewed. There are fixed fees, consequential fees and optional fees. The Accreditation Fee is dependent on the program's revenue, ranging from \$4,394 for under \$150,000 in revenue, to \$15,609 for revenue of \$4,000,001 and above. There are also fixed fees such as:

- Site review fee: \$550/person/day
- Follow-up fee: \$550/person/day
- Annual fee: \$600 per organization/year

CAC's has several value-added benefits, designed to help programs through the process of accreditation. They offer a free half day session during which support personnel from CAC will meet with program staff to explain the Standards, review the accreditation process, etc. They also offer a pre-site evaluation which can be conducted approximately 2 months prior to an on-site evaluation which offers programs the chance to have their documentation reviewed against the standards, and receive feedback on any areas requiring improvement prior to the evaluation. Other benefits offered are extensive training, unlimited personnel support, networking opportunities, a resource room, electronic copies of the standards at no cost, and recognition of achievement.

5.2.3 Canadian Forestry Accreditation Board²⁴

The Canadian Forestry Accreditation Board (CFAB) accredits Canadian forestry programs at the baccalaureate level or higher. This process ensures that accredited programs meet or exceed common educational standards acceptable for professional forestry registration in British Columbia, Alberta, Ontario, Quebec, New Brunswick, Nova Scotia, and Newfoundland and Labrador. The Board is governed by Members representing each Province. The Board is a member of the Canadian Federation of Professional Foresters Associations and of the Association of Accrediting Agencies of Canada.

There are 7 Academic Standards used by the CFAB in conducting accreditation reviews of Canadian university baccalaureate forestry programs, specific to forestry curriculum.

Three program elements are assessed:

- Curriculum criteria (foundational studies, core forestry studies, complementary studies)
- Program outcomes criteria
- Program environment criteria (students, faculty, facilities, resources)

CFAB accreditation process steps:

²⁴ Canadian Forestry Accreditation Board (2010).

1. On-site visit to the university faculty by a team of forestry professionals drawn from a range of disciplines and segments of the forestry sector. The faculty contributes significantly to the process through the development of extensive documentation in advance of the visit and the making of arrangements for the site visit team to meet with university officials, faculty members, undergraduates and graduates.
2. The academic curriculum is thoroughly reviewed. Learning facilities, physical plant, educational environment, faculty experience and qualifications, student/graduate skills and competencies, competency assessment procedures, and program stability and support within and outside the university are all considered during the visit.
3. Findings of the site visit are recorded in a report.
4. Accreditation decision is made by the Board.

5.2.4 Canadian Information Processing Society²⁵

As a member of the Association of Accrediting Agencies of Canada (AAAC), Computer Science Accreditation Council for the Canadian Information Processing Society (CIPS) accredits IT programs at Canadian and international colleges and universities. CIPS has established the Computer Science Accreditation Council (CSAC), the Information Systems and Technology Accreditation Council (ISTAC) and the Business Technology Management Accreditation Council (BTMAC) as autonomous bodies.

The CSAC is the lead council in the Canadian Information Processing Society. Programs accredited by the CSAC are those leading to a computer science, software engineering or interdisciplinary degree. CSAC is responsible for the development of accreditation criteria, selection of program evaluators, and ultimately the granting of the accreditation status.

The Standards for Accreditation are called Graduate Attributes; this is a set of 9 program-level objectives for all CSAC-accredited programs. The Graduate Attributes are derived from and aligned with the Graduate Attributes of the Seoul Accord and the Graduate Attributes of the Canadian Engineering Accreditation Board. The latter alignment allows departments that wish to seek accreditation of their software engineering programs by both CSAC and the Engineers Canada Canadian Engineering Accreditation Board (CEAB) to reuse a substantial portion of CEAB self-study reports for CSAC purposes.

Accreditation is done through qualitative and quantitative assessment of the Graduate Attributes through Quality Indicators. The Quality Indicators must demonstrate that the Graduate Attributes have been met. The institution should gather quality indicators in each of the following areas: faculty, students, curriculum and resources.

Program elements assessed are:

- Control and organization of the institution
- Education programs offered and degrees conferred
- Requirements for admission of students
- Number of students enrolled in the college, faculty or division as a whole, and/or in the individual educational programs
- Teaching staff and teaching loads
- Commitment to and support for research
- Resources:
 - financial: total budget, non-salary portion of budget and salary scales
 - physical: classrooms, laboratories, offices and equipment

²⁵ Canadian Information Processing Society (CIPS) (2014).

- support staff: administrative, clerical, laboratory, research and technical
- library
- Curricular content of the program
- Actual course selections, as reflected by a sample of anonymous transcripts
- Innovative and special features of the program.

CIPS accreditation process steps are:

Self-study:

- A year or more before the on-site visit the program should begin work on the self-study report and collect examples of student work, such as syllabi, textbooks, and sample assignments, to display for the review team to examine
- Six months before the on-site visit programs complete their self-study reports and send them to the CIPS Accreditation Secretariat
- CIPS invoices the institution for the program visit
- CIPS assigns a team chair the visit, the visit date is set, the team is formed, and the team begins reviewing the self-study reports

On-site visit:

- Typically, the on-site visit lasts two days - includes a review of materials and interviews with students, faculty, staff, and administrators, and concludes with an exit meeting where the team conveys its findings.
- The minimum review team size is three members; one team chair (TC) and two or three program evaluators, one per program.

Decision:

- One week after - the program provides the CIPS team with any errors of fact resulting from the exit meeting.
- Two to three months after - CIPS formally communicates the team's findings in the draft report to the institution.
- Three to four months after - The program formally responds to the draft report.
- Conclusion - CIPS meets once a year (during the summer) to decide accreditation actions. Programs are formally notified and final report sent no later than mid-September.

To maintain its accreditation status, each program must be periodically reassessed for continuing compliance with the accreditation requirements. This re-assessment involves scheduled re-accreditation visits, between three years (for colleges) and five years (for universities) from the last assessment.

5.3 International Accreditation Associations and Organizations

This section summarizes a number of organizations that are either well-established with good practices, or in an industry relevant to FPHRC. The primary objectives of each organization's accreditation process are outlined below.

The international accreditation associations and organizations covered are:

- Institute of Food Technologists
- American Association for Laboratory Accreditation: Food & Pharmaceutical Laboratory Accreditation Program (A2LA)
- British Accreditation Council (BAC)
- International HACCP Alliance
- National Institute for Metalworking Skills (NIMS)
- U.S. Department of Education (USDE)

The major components of each accreditation program (i.e., governance structure, standards for accreditation, accreditation criteria, and accreditation process) are summarized in [Appendix D](#).

5.3.1 American Association for Laboratory Accreditation: Food & Pharmaceutical Laboratory Accreditation Program²⁶

American Association for Laboratory Accreditation (A2LA) accreditation body in the U.S. offers food testing laboratory accreditation. The food and pharmaceutical testing laboratory accreditation program encompasses laboratories performing chemical and/or microbiological analyses in the examination of pharmaceuticals, food products, ingredients in the production of food, in-process food samples, environmental samples pertinent to foods and final products. This specialty program is covered by the A2LA chemical and/or biological fields of testing.

A2LA establishes technical advisory committees if advice is needed beyond that which can be obtained from existing consensus standards-writing and industry committees. Each advisory committee provides advice on the development of program requirements and the interpretation and/or amplification of the applicable international conformity assessment standard (e.g., ISO/IEC 17025, ISO/IEC 17020, etc.) for particular fields and/or programs.

The A2LA standards for accreditation are the Conformity Assessment Standard(s), e.g. ISO/IEC 17025, ISO/IEC 17020, etc. The AOAC guidelines²⁷ (while considered a "guidance" document by AOAC) are used by A2LA as accreditation requirements providing detailed criteria to aid in assessing the essential requirements for performing these types of analyses.

To attain and maintain accreditation, an applicant must agree to:

1. Enable A2LA to verify compliance with the requirements for accreditation including examination of documentation and access to all calibration and testing areas, equipment, records and personnel for the purposes of assessment, surveillance, reassessment, resolution of complaints, and fulfillment of Mutual Recognition Arrangements (MRA/MLA) and/or specifier requirements;
2. Comply at all times with the criteria, relevant requirements documents and conditions for accreditation;
3. Maintain impartiality and integrity;
4. Retain all quality records and technical records supporting reported results throughout the period between A2LA full assessments

A2LA accreditation process steps:

1. The applicant obtains all necessary A2LA application forms.

²⁶ Food & Pharmaceutical Laboratory Accreditation Program (2013).

²⁷ AOAC International *Guidelines for Laboratories Performing Microbiological and Chemical Analyses of Food and Pharmaceuticals* and APLAC TC 007 *Guidelines for Food Testing Laboratories*

2. The applicant obtains an official copy of the applicable ISO standard.
3. The applicant provides A2LA with faxed confirmation that a valid copy of the applicable ISO standard has been obtained. A2LA then provides the relevant Assessor Checklist to the applicant.
4. The applicant completes and returns the application for accreditation, all required supporting documentation, and payment.
5. A2LA reviews the application documents and an appropriate assessor(s) is assigned, with the applicant's concurrence.
6. The assessor contacts the applicant to discuss the scheduling of the on-site assessment and request the quality documentation. Once documentation is reviewed for completeness, the assessment can be scheduled with the assessor(s).
7. The assessment or the pre-assessment is performed and includes: entry briefing; review of quality documentation, records, sample handling; interviews with technicians; demonstrations of tests/calibrations/etc.; examination of equipment and calibration records; written report of assessor's findings; and exit briefing.
8. The applicant responds to any deficiencies with a written corrective action response.
9. The corrective action is reviewed by the A2LA staff and forwarded to the Accreditation Council for a vote.
10. Accreditation is granted when affirmative votes are received, all concerns are resolved, and all fees are paid in full.

Program submission fees for accreditation vary by institution. Cost estimates are provided through submission of Estimate Request Form. Accreditation is for a five-year period and may be renewed subject to further review and audit as part of continuous improvement.

5.3.2 British Accreditation Council²⁸

The British Accreditation Council (BAC) provides a comprehensive quality assurance scheme for independent (i.e., private) higher education in the UK. Accreditation Council members are nominated by many of the bodies concerned with the maintenance of educational standards in Britain. One of the criteria for nomination is that no officers or members of Council have a commercial interest in any of the accredited institutions. The responsibility for decisions on accreditation is delegated to BAC's Accreditation Committee, which includes members of the Council, recent practitioners and representatives of other accrediting bodies.

Accreditation requirements represent BAC's views of the minimum requirements necessary to run a college that is operating within the law, such as offering an appropriate and safe environment, being properly managed and staffed, providing adequate pastoral support to its students, monitoring its own standards and providing a worthwhile program of teaching and learning.

Five areas assessed:

1. Premises and Health and Safety
2. Management and Staffing and Administration
3. Student Welfare
4. Management of Quality and Teaching
5. Learning Assessment

New applicants follow a three-stage process for accreditation:

²⁸ The British Accreditation Council (n.d.).

Stage 1: Paper-based submission comprising an application form and substantial supporting documentation, which are checked against our accreditation criteria by BAC's experienced staff to determine the institution's suitability for accreditation.

Stage 2: Inspection which focuses on three of the five areas which BAC assesses (Premises and Health and Safety, Management, Staffing and Administration, and Student Welfare). If the outcome is considered satisfactory, the status of "Approved Candidate for BAC Accreditation" will be awarded for six months, before the end of which time a further inspection (Stage 3) will take place. This status will enable the applicant college to apply for a UK British Accreditation (UKBA) licence.

Stage 3: Inspection which focuses on the remaining two areas (Management of Quality and Teaching, Learning and Assessment). The inspectors will also check aspects covered in Stage 2. If the outcome is satisfactory, accreditation will be awarded for the full term (4 years) from the date of the award of "Approved Candidate" status at Stage 2.

The college will receive an interim visit within the first year after Stage 3; if the standards are not being maintained, the Accreditation Committee may require a supplementary inspection to take place at the college's expense and may suspend accreditation until the report of this inspection has been received.

Accreditation is usually awarded for three or four years. To remain accredited, the institution must submit an application for reaccreditation and undergo a full reaccreditation inspection before accreditation expires. Should the institution fail to undergo a reaccreditation inspection before current accreditation expiry date, accreditation will be withdrawn.

5.3.3 International HACCP Alliance²⁹

The International HACCP Alliance provides standardized educational programs which facilitate the implementation of farm-to-table HACCP systems. The Alliance has established HACCP training program criteria and standards for program accreditation. Training entities using Alliance approved courses are eligible to receive accreditation from the Alliance.

The International HACCP Alliance designates an accreditation review committee. Members of the accreditation review committee are appointed by the International HACCP Alliance Board. The International HACCP Alliance uses standards and procedures for accreditation of Hazard Analysis and Critical Control Point education and training programs for individuals associated with the food industry.

There are five types of HACCP Training Courses (approved by the Alliance Board):

1. Introduction to HACCP Workshop
2. Train-the-Trainer HACCP Workshop
3. Executive HACCP Course
4. HACCP-Inspection Model Project (HIMP)
5. Advanced HACCP Course Verification & Validation

Accreditation is granted to training entities that meet the core requirements for: Introduction to HACCP, HACCP-Inspection Model Project (HIMP), and Advanced HACCP Course on Verification and Validation training programs. Accreditation is not provided for the Train-the-Trainer or the Executive HACCP training program.

²⁹International HACCP Alliance - Accreditation for HACCP Training Programs (2001).

The International HACCP Alliance accredits education and training programs if courses include pre-determined knowledge domains and learning objectives.

Program elements assessed are:

- Lead Instructor Qualifications
- Course Schedules
- Class Roster

International HACCP Alliance accreditation process steps:

1. Alliance Training Committee develops core outlines for types of individual HACCP courses and submits them to the Board of Directors.
2. Board of Directors approves course outlines and courses become available for training entities to teach.
3. Training providers submit accreditation application for each type of course to the Alliance.
4. Accreditation Review Committee evaluates program application for accreditation.
5. If approved, program accreditation for each type of course is valid for three years, unless revoked.

Program fees:

- \$150 - Initial application fee (to cover the cost of evaluating the program)
- \$100 - Renewal fee (due every 3 years to maintain accreditation status)
- \$10 - Per candidate trained for the preceding courses. These can be handled on a course by course basis, if desired.

5.3.4 National Institute for Metalworking Skills³⁰

The purpose of NIMS national accreditation is to improve the quality of training programs as part of the national endeavor to build and maintain a globally competitive workforce while providing career opportunities to employees. Accreditation is based on NIMS Skill Standards, which are industry written and validated.

Programs that meet or exceed NIMS quality standards may be accredited. Those programs may be in industry, education, a combination of both, or inter-firm programs. Educational training programs may be at the secondary or postsecondary level and may be private or public programs. Industry offered training programs can include formal training programs developed to train entry-level or incumbent workers, or both. Inter-firm programs can include those coordinated through trade associations, labor unions and other companies.

NIMS pre-requisites for accreditation include:

- All NIMS skill standards must be incorporated into the training program's curriculum and program evaluation.
- All trainees must know about the NIMS performance requirements and the NIMS credentialing program opportunities.
- The Advisory Committee, established by the applying institution, must be involved with the Self Study process.
- The Advisory Committee members must review the performance requirements and sample tests.
- All Advisory Committee members must have their own copies of the Evaluator Guide(s).
- The Advisory Committee must be knowledgeable about the use of NIMS credentials in recruiting and hiring.

³⁰ National Institute for Metalworking Skills, Inc. (n.d.)

- The program must have the support of the administration.
- There must be evidence of an active credentialing program.
- Instructors must have earned NIMS credentials.
- All instructors must have a clear understanding of the credentialing process, including the role of the Advisory Committee.
- The facility must meet the applicable occupational health and safety (OSHA) requirements.

Accreditation process steps:

1. Registration of the program with NIMS.
2. Self-Study - candidate programs rate themselves against NIMS quality measures in the areas of administrative support, instructional quality and capacity, curriculum, equipment and tooling, advisory council roles, safety and the integration of the national standards. Application for Accreditation and self-study kit needs to be completed and returned to NIMS within 18 months of receipt.
3. On-Site Audit - A three-person team comprised of industry and education personnel conduct an on-site review, verifying the self-study report and documentation. The team interviews administrative and corporate personnel, instructors, students/workers, advisory council members and industry leaders. The team also inspects the facility and equipment and analyzes safety practices.

There are also credentialing requirements. Instructors must earn NIMS credentials in the modules that they instruct. Students/workers must have earned credentials in the modules for which accreditation is sought. These requirements are a pre-requisite to accreditation.

Accreditation is valid for a five-year period and may be renewed subject to further review and audit as part of continuous improvement.

5.3.5 U.S. Department of Education³¹

The U.S. Department of Education (USDE) provides an overview of accreditation in the US and lists accredited programs and accrediting agencies. The U.S. Department of Education delineate an ideal Accrediting Procedure that is adopted by the ASPA. The accrediting procedure is included in this review as it serves as a good benchmark for the standards of Accreditation for educational institutions, programs and courses.

US department of education accreditation process steps:

1. Standards: The accrediting agency, in collaboration with educational institutions, establishes standards for accreditation (can be derived from skill standards, occupational standards, etc.).
2. Self-study: The institution or program seeking accreditation prepares an in-depth self-evaluation study that measures its performance against the standards established by the accrediting agency.
3. On-site Evaluation: A team selected by the accrediting agency visits the institution or program to determine first-hand if the applicant meets the established standards.
4. Publication: Upon being satisfied that the applicant meets its standards, the accrediting agency grants accreditation or pre-accreditation status and lists the institution or program in an official publication with other similarly accredited or pre-accredited institutions or programs.
5. Monitoring: The accrediting agency monitors each accredited institution or program throughout the period of accreditation granted to verify that it continues to meet the agency's standards.
6. Re-evaluation: The accrediting agency periodically re-evaluates each institution or program to determine whether continuation of its accredited or pre-accredited status is warranted.

³¹ U.S. Department of Education (n.d.)

5.4 Summary

The programs reviewed came from different industries and countries; hence differences between the programs were expected. These differences were mostly pronounced in the areas or components of assessment. While some programs are very comprehensive in terms of accrediting governance components for the entire program (e.g., Canadian Accreditation Council, Canadian Council of Technicians and Technologists, Computer Science Accreditation Council for the Canadian Information Processing Society), others are more focussed accrediting only the courses offered (e.g., Canadian Council for Aviation and Aerospace, Canadian Forestry Accreditation Board, International HACCP Alliance).

All of the programs are governed by some form of an advisory board, base their criteria to evaluate training programs/courses against industry developed and validated standards, include a self-assessment and a final decision by the accreditation board as part of the accreditation process, and have a period of time when application for accreditation renewal is required. The accreditation criteria generally focused on aspects of training institution administration, curriculum design and delivery, and the training environment.

While most accreditation programs require a site visit as part of the accreditation program, for the four sector councils reviewed, only the Canadian Council of Technicians and Technologists required a site visit. The Canadian Supply Chain Sector Council and the Motor Carrier Passenger Council of Canada did not have a site visit as part of their accreditation process and the Canadian Council for Aviation and Aerospace conducted audits, but did not conduct site visits for each accreditation applicant. Despite the differences program components and steps were generally aligned with the principles outlined by TASC and CSA.

There were also differences in fees and the accreditation period. The fees are dependent on whether a course or institution was already accredited (i.e., initial accreditation vs renewal) and ranged from \$150³² - \$5,000. The accreditation period ranged from 1 to 5 years at which time an application for reassessment was required.

³² The \$150 application fee for International HACCP Alliance is supplemented by a \$10 per applicant fee.

6 Environmental Scan

Currently in Canada, there is no formal accreditation program for the food manufacturing industry. As Canada is a worldwide leader in the area of food safety, there are some initiatives to standardize and improve the quality of food safety training along the entire food supply chain, from farm to fork. Internationally, there are some accreditation models that could serve as valuable learning opportunities, noting that most of these models are regulated by governments.

6.1 International Accreditation Models

Improve Food and Drink Skills Council³³, UK provides the strategic overview for the food and drink manufacturing sector to help increase performance and productivity in the UK. As a result of skills shortages in the UK food processing industry, mainly related to skilled trade occupations and process, plant and machine operatives and management skills, Improve set about developing standards and qualifications to help employers drive the development of skills and knowledge required in industry job roles.

Rather than develop occupation specific standards, Improve focussed on developing standards to address knowledge and skills shortages in the industry through a qualification framework. Qualification can have different meanings. It may relate to “a special skill or type of experience or knowledge that makes someone suitable to do a particular job or activity”³⁴, similar to the definition of competence, or it may be defined as “a condition or standard that must be complied with (as for the attainment of a privilege)”³⁵, similar to the definition of a certificate, diploma and even certification. Improve’s qualification framework seeks to address both definitions.

To assist with the linkages between occupations, functions, NOSs and qualifications, Improve created an occupational map that is used in conjunction with a functional map³⁶, both of which cover many sub-sectors of the industry. These two maps inform the development of multiple NOSs across the industry.

Two families of qualifications exist: Improve Proficiency Qualifications (IPQs) and Improve Vocational Qualifications (IVQs). IPQs are based on units of assessment, covering the occupational skills or knowledge needed to carry out specific job roles. Learners accumulate credits for units completed as they work towards a full qualification. Within one qualification, learners can select from a range occupational skills and knowledge units relevant to their current job roles within the sector. They can also select underpinning knowledge units relevant to their role to increase their understanding of the business they work in. Some units are common to more than one IPQ, so credit can be accumulated and transferred from one qualification to another. All of the IPQs are designed in consultation with employers to ensure they cover the best current sector practices. These qualifications are available at different levels, making it possible for everyone from new entrants to experienced managers to find a qualification that will be right for them. Qualifications are offered through accredited courses.

³³ Improve Food and Drinks Skills Council (2015).

³⁴ Merriam Webster Dictionary (n.d.).

³⁵ Ibid

³⁶ Improve Food and Drinks Skills Council (2015).

6.2 National Initiatives

Safe Food Canada (SFC)³⁷ is an organization set up in 2015 with initial start-up funding from the Canadian Food Inspection Agency (CFIA) to increase food safety standards across the food chain from farm to plate. They are currently in the process of establishing a “Learning Partnership” to bring together industry, government and academia in an attempt to create training qualification standards that academia and training providers could use as reference. The standards are not intended to cover all areas of training but key priorities food safety areas. Their goal is to have international training qualifications standards in a 5 year time frame.

Safe Food Canada is in initial stages of development and currently defining their mandate within the existing food industry serving agencies and academic groups.

6.3 Summary

While Improve Food and Drinks Sector Council may not pose an immediate threat to the Canadian food processing industry, it does offer a qualification framework that FPHRC can reference to build its accreditation framework. The modular nature of Improve’s functional and occupational maps lends itself well to the competency-based national occupational standards that are being developed by the FPHRC. FPHRC can choose to provide accreditation streams (e.g., Food Safety Standards, Production Standards, etc.), similar to the qualification program offered by Improve, which educational institutions or training providers can select to accredit their courses against.

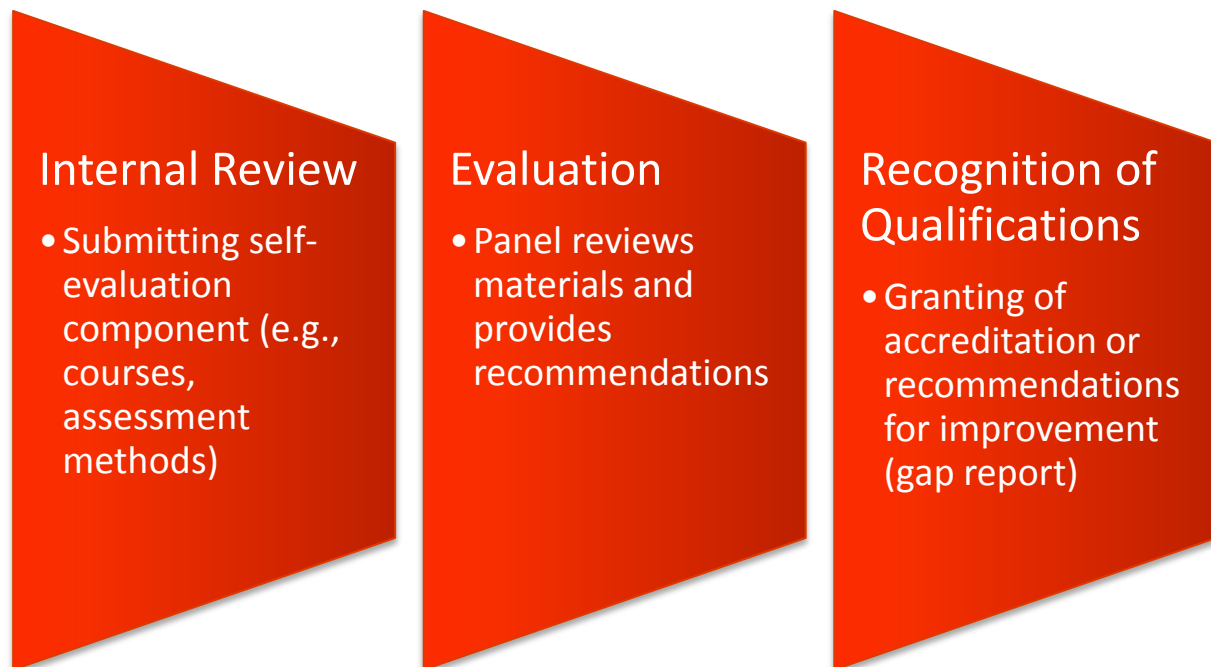
The FPHRC is working collaboratively with Safe Food Canada as they defined their mandate. SFC’s mandate seems to be more focussed on colleges and universities rather than training providers. FPHRC is still in a unique position to offer an accreditation program to industry and training providers directly. In addition, by developing industry validated competency-based standards, FPHRC can offer SFC a common set of standards on which to base its industry partnerships.

³⁷ Safe Food Canada: The Learning Partnership (2015)

7 Accreditation Recommendations

Based on the market review, competitor analysis and industry consultations the consensus is that the food processing industry needs standardization, however achieving that standardization should be a process that involves industry partnerships, awareness raising and education. Currently, there is no standardization across the industry in terms of the quality of the programs and courses offered and FPHRC is uniquely positioned to offer an accreditation program to standardize food processing training across the country.

The accreditation process needs to provide an opportunity for training providers to standardize their courses/curriculums against the competency-based standards, while being feasible and realistic to administer and assess. As a result, the proposed accreditation program will have three main components, internal review, evaluation and recognition of qualifications, as outlined in the figure below.



7.1 Internal Review

An initial step in accreditation is internal review, a process of mapping one's curriculum against competency-based standards to identify curriculum gaps. FPHRC can assist colleges, universities, companies and other training providers to ensure their curriculums are matched to the competency-based standards by providing a curriculum mapping tool that allows schools to conduct an internal review (self-assessment) against the competency-based standards. There is also an opportunity for FPHRC itself to take a leadership role with regard to filling some of the training gaps identified in the industry, by partnering with training providers across Canada to deliver courses aligned with industry standards.

Accreditation Guide

In order to assist the schools and training providers to benchmark their courses against the standards, FPHRC should develop an accreditation guide that outlines the accreditation process and requirements. Some of these requirements include developing:

- Course/program requirements for accreditation (i.e., meeting competency-based standards)
- Application process and requirements:
 - General information about education/training provider
 - Title of course/program for which accreditation is sought
 - Title of related certification program, if applicable
 - Statement that education/training provider abides by requirements to the use and maintenance of accreditation
- Type and nature of assessment and assessment process. For example:
 - The training provider needs to submit a self-assessment
 - Assessors meet to review the course/program in-person or remotely and complete an assessment form
 - Recommendation - Assessors submit a draft report to Accreditation Committee detailing results of review and whether course/program meets accreditation criteria. Draft report includes recommendations and opportunities for improvement.
 - Review - Education/Training provider reviews draft report and is provided an opportunity to comment. Comments are considered and a final report is issued to the accreditation body.
 - Decision – Accreditation Committee reviews final report, makes decision and notifies education/training provider
- Conditions for granting, maintaining, and renewing accreditation:
 - Accreditation granted to providers meeting the assessment criteria
 - Accredited institutions may be added to a public registry
 - Accredited institution is permitted to use name/mark of FPHRC in communications and promotional materials
 - Policies and procedures should be developed for periodic reaccreditation/review of accredited courses/programs. Procedures may be less rigorous than initial accreditation procedures
 - Reaccreditation criteria and frequency should be developed during the initial design of the accreditation program
- Conditions for suspending or withdrawing accreditation
 - Programs/courses are monitored periodically to ensure that they are compliant with accreditation criteria. Withdrawal of accreditation could occur under surveillance (optional component – decision to include surveillance should be made at development stage)
 - Policies and procedures should be in place to specify conditions and circumstances under which accreditation can be withdrawn
 - Methods and frequency of surveillance (audits) should be determined by the Accreditation Council
 - Policies and procedures should be developed for resolution of appeals and complaints

- Course/program development and delivery criteria:
 - Guidelines for assessing courses against standards, language benchmarks, and/or essential skills
 - Defining and measuring learning outcomes
 - Course/program content should provide sufficient information to support and reinforce learning outcomes
 - Course design, which may include best practices such as adult-learning and learner centered approach
 - Prerequisites that are clearly communicated
 - Version control protocols, i.e., maintain a defined control and amendment process for tracking revisions
 - Course delivery modalities, such as: instructor-led, independent e-learning, internships, etc.
 - Develop and adhere to policies on instruction hours and allow for sufficient time for learners to achieve learning outcomes
 - Feedback mechanisms such as providing anonymous evaluation of course/program and instructor

Curriculum Mapping

In order to encourage the training and education providers to conduct an internal review, FPHRC should provide guidance and necessary tools, such as a curriculum mapping guide that includes standardized curriculum mapping forms or on-line portals where training providers can map their curriculums against the standards. In addition, FPHRC can develop education sessions such as in-person or on-line webinars explaining the purpose, process and value of accreditation.

The curriculum mapping guide should provide all the necessary information for the training provider to collect and assess their courses against the standards such as selecting internal committees to manage, communicate, and conduct the curriculum review. The internal committee should then follow the required steps to facilitate the curriculum review and complete an internal review report, such as:

1. Review the accreditation guide and tools.
2. Hold a meeting with faculty to explain the process and the benefits that accreditation will have for the program.
3. Allow time for faculty to accumulate all course information and assess how the courses meet the competency standards and where gaps exist.
4. Hold a workshop with faculty and staff to discuss gaps and overlaps and create an action plan to resolve these issues, e.g., updating a curriculum to ensure the gaps are addressed.
5. Ensure assessment methods are appropriate based on the type of learning in the course.

The key areas examined should include a list of program strengths, course outlines, evidence of student work, organization's governance, faculty qualifications, and management of the program. The evaluation form "Self-study Report" will serve to assist the training provider to identify and act upon any gaps between courses offered and the competency-based standards.

Curriculum Advisor

FPHRC can further assist the training providers by providing a Curriculum Advisor that training providers can call upon to help them with the curriculum mapping process. The advisors can initially consist of a pool of volunteer

subject matter experts (SMEs). The SMEs should be familiar with curriculums and trained in understanding the competency-based standards.

Stakeholder Education

In support of curriculum review, the FPHRC needs to conduct education sessions to explain competency-based standards and how they were developed in order to instill their value to the industry. Education sessions can take place in person, e.g., visiting a school or training provider, or on-line (scheduled live webinars) or pre-recorded sessions.

7.2 Evaluation

Once the training provider submits its materials for review, they need to be reviewed by someone who can assess curriculum materials against the competency-based standards. As such, assessors should be selected that have appropriate qualifications, occupational expertise, and understanding of best practices in assessment.

7.3 Recognition of Qualifications

Assessors need to be given guidelines for assessment and as such, FPHRC needs to develop guides and criteria for assessors to follow. In addition, an Accreditation Committee needs to be established to develop and follow policies and procedures related to:

- Granting accreditation (eligibility criteria, assessment process).
- Maintaining, renewing, suspending, or withdrawing accreditation.
- Developing and maintaining accreditation criteria and assessment methods.
- Resolving appeals and complaints.
- Maintaining the accreditation program.

In support of the industry need for standardized and timely training, FPHRC has developed a training qualification process where training providers that wish to deliver FPHRC courses are required to complete an application and a self-assessment against the specific criteria for the particular course(s) in question. The specific criteria will become the competency-based standards.

All FPHRC courses are developed with direct input from industry stakeholders and subject matter experts to confirm that the products truly meet the training needs of employers. Products are then validated across Canada, by members of the food and beverage processing industry, to ensure the best and most relevant content.³⁸

FPHRC's Accreditation Committee reviews the contents of each application and to recommend a specific course of action to FPHRC board of directors who will:

- a) approve, for a one year period, the training institution and the individual trainer(s) for delivery of the course(s) or,
- b) approve, on a conditional basis and subject to further information, the training institution and the individual trainer(s) for delivery of the course(s) or,

³⁸ FPHRC Courses Offered.

- c) defer the approval pending a review of further information or clarification; including the possibility of “on-site” visits by an industry team or,
- d) decline the application to deliver FPHRC training courses.

At the core of the training are specially trained instructors who are approved by the FPHRC to give the courses.

Organizations or individuals who wish to deliver any FPHRC courses must complete an application and have it approved by FPHRC prior to any courseware being released to the trainer.

The qualification period covered by submission of this application will be for one year; at the anniversary date of this application, a renewal of the application will need to be submitted. Granting of the qualification is subject to review, at any time during the period, subject to cause at the sole discretion of FPHRC.

Organizations that have their applications denied may appeal the decision, in writing, to the board of directors of FPHRC. The FPHRC Accreditation Committee will have final determination as to the status of any application.

7.4 Recommendation

The LMI Study (2011) identified a total of 94 colleges and universities offering food processing or food safety courses across Canada, however it is difficult to ascertain the actual number of private training providers that offer food production and food safety courses across Canada; hence the revenue projections represent a conservative estimate of the number of training providers that may want to become accredited.

Since the costs associated with developing an accreditation framework are much less than for the certification framework, FPHRC can also subsidize the costs of developing the accreditation framework with the certification one.

7.5 Summary

As the competency-based standards are finalized, FPHRC will have industry standardized criteria to assess the courses against. Furthermore, as the proposed approach illustrates, FPHRC has laid the groundwork to offer an accreditation program to any training provider, including colleges and universities.

8 Conclusion

The results of the feasibility study established that standardization of the curriculums and courses offered by the colleges, universities and training providers is a high priority for the food processing industry and that training providers need to provide graduates that are better suited to meet the industry's needs. As a first step in the alignment, FPHRC is laying the groundwork with its competencies framework and providing training that targets the knowledge and skills gaps (e.g., Food Safety and HACCP). The competencies framework will help familiarize the training and education providers with FPHRC and its competency-based standards as well as help standardize food production and food safety courses and programs across Canada.

FPHRC can uniquely leverage its competency-based standards to establish an industry benchmark for the Canadian food processing industry through its accreditation program.

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Appendix A

Stakeholders Consulted

Name	Position	Organization	Region
Art Hill	Professor and Chair	Department of Food Science, University of Guelph	Guelph, ON
Dave McGregor	CHRL Employer Relations Coordinator Career Services & Co-operative Education	Centennial College - Food Science Technology	Toronto, ON
Doug Overes	Program Chair, Culinary Careers Team Manager– Culinary Team Alberta	Lethbridge College	Lethbridge, AB
H. J. Thompson	President	Olds College (Olds, AB)	Calgary, AB
Kim Wolf	Conestoga College	Institute of Food Processing Technology	Kitchener, ON
Luis Garcia	Chair	Institute of Food Processing Technology and Trades and Apprenticeship (Millwright)	Kitchener, ON
Mansel Griffiths	DFO/NSERC Senior Industrial Research Chair in Dairy Microbiology and Director, Canadian Research Institute for Food Safety	University of Guelph	Guelph, ON
Mary Elizabeth Davies	Coordinator/Professor Food and Nutrition Management School of Hospitality & Tourism	Algonquin College	Ottawa, ON
Michael Gänzle	Division Director (Food Science & Bioresource Technology)	University of Alberta	Edmonton, AB
Michael Trevan	Head and Professor Department of Food Science	University of Manitoba	Winnipeg, MB
William Lachowsky	Food Safety Education Coordinator	Department of Food Science University of Guelph	Guelph, ON

Appendix B

Summary of Canadian Sector Council Accreditation Program Components

Council	Governance Structure	Standards for Accreditation	Accreditation Criteria	Accreditation Process	Program Submission Fee	Accreditation Period/Renewal
Canadian Council for Aviation and Aerospace	No info available	CCAA's Occupational Standard (OS)	Instructor Guides which contain the requirements outlined in the National Occupational Standard (OS) for specific occupations. CCAA also accredits existing training programs and audits training organizations to ensure consistent delivery of the CCAA National Training Standard.	CCAA's accreditation process measures the extent to which a training organization's program meets or exceeds the requirements specified in the CAMC Instructor Guide for that discipline.	No information about fees available.	No information about accreditation period available on the website.
Canadian Council of Technicians and Technologists	Canadian Technology Accreditation Board (CTAB)	National Technology Benchmarks	10 general areas	2-parts: Part 1: Self-Study Part 2: Peer Review - On-site visit by accreditation team - Report is submitted to CTAB - Decision is made within 6 months of visit	\$250 application fee	Every 4 years
Canadian Supply Chain Sector Council	Accreditation Review Panel consisting of representatives from industry and educational	CSCSC Occupational Standards CSCSC National Accreditation	Five CSCSC Standards for Accreditation	Steps: Register as a provider (online form) Complete application, pay application fee	Single course: \$100 Full program: \$750	Reaccreditation required every 3 years.

Council	Governance Structure	Standards for Accreditation	Accreditation Criteria	Accreditation Process	Program Submission Fee	Accreditation Period/Renewal
	institutions	Program: Standards for Accreditation		application form evidence grid required attachments self-assessment Applicants notified within 8 weeks of application deadline.		
Motor Carrier Passenger Council of Canada	Accreditation and Certification Board	National Occupational Standards	Assessment of whether training program covers 10 key areas outlined in National Occupation Standards (self-assessment with supporting documentation)	<i>Process for Accreditation:</i> 1. Application reviewed by MCPCC registrar to ensure all requirements of NOS are met. If accepted, application forwarded to Board for review. If not accepted, applicant is notified of deficiencies. 2. Board reviews application and makes final decision and notifies MCPCC. 3. Grants accreditation.	Fee for bus company or educational institution.	Information on accreditation period/renewal not available on website.

Appendix C

Summary of Canadian Associations and Organizations Accreditation Components

Association	Governance	Standards for Accreditation	Criteria for Accreditation	Accreditation Process	Program Submission Fee	Accreditation Period/Renewal
Accreditation Canada	Advisory Committees	70+ sets of standards for Accreditation of various health care services.	<p>Assessment of all aspects of an organization's operations, including:</p> <ul style="list-style-type: none"> ○ <i>System-wide areas</i> ○ <i>Population-specific and service excellence standards</i> <p>Assessment Tools:</p> <ul style="list-style-type: none"> ○ Governance Functioning Tool ○ Patient Safety Culture Tool ○ Worklife Pulse Tool 	<p>Accreditation Primer Provides an initial assessment of the basic elements of safety and quality</p> <p>Qmentum accreditation:</p> <ol style="list-style-type: none"> 1. <i>Self-assessment</i> 2. <i>On-site survey</i> 	Information not available.	<p>Accreditation Primer: 2 years</p> <p>Qmentum: 4 years</p>
Canadian Accreditation Council	Accreditation Panel	Generic standards apply <i>across all programs</i> and Program standards apply to specific programming areas	<p>Generic Standards focus on 9 major components of service delivery</p> <p>Program Standards address optional program designations</p>	<p><i>Process for Accreditation:</i></p> <ol style="list-style-type: none"> 3. Self-Study - 6-12 months prior to site visit 4. On-site Peer Review (1-4 days on site) 	<p>Application fee: \$1,250.00</p> <p>Total Accreditation Fee dependent on program revenue</p>	Accredited status granted for period of 1, 3, or 4 years (dependent on level of compliance with standards)

Association	Governance	Standards for Accreditation	Criteria for Accreditation	Accreditation Process	Program Submission Fee	Accreditation Period/Renewal
Canadian Forestry Accreditation Board	Board Members representing each Province.	7 Academic Standards	Three elements for assessment: <ul style="list-style-type: none"> ○ Curriculum criteria ○ Program Outcomes Criteria ○ Program Environment Criteria 	<ul style="list-style-type: none"> ○ On-site visit to the university faculty ○ Findings of the site visit recorded in a report ○ Accreditation decision by Board 	Information not available.	Information not available.
Canadian Information Processing Society	Computer Science Accreditation Council	Graduate Attributes	<p>Quality Indicators must demonstrate that the Graduate Attributes have been met.</p> <p>The institution should gather quality indicators in each of the following areas: Faculty, Students, Curriculum and Resources.</p>	<p><i>Process for Accreditation:</i></p> <ul style="list-style-type: none"> ○ Completion of Self-study report and other supporting documentation ○ On-site visit 	<p>First time accreditation: \$4,000 or \$5,200 if more than one criterion</p> <p>Annual fee: \$700 - \$1,000 based on multiple criteria (e.g., university vs college)</p>	<p>College: 5 years</p> <p>University: 6 years</p>

Appendix D

Summary of International Associations and Organizations Accreditation Components

Association	Governance	Standards for Accreditation	Criteria for Accreditation	Accreditation Process	Program Submission Fee	Accreditation Period/Renewal
American Association for Laboratory Accreditation: Food & Pharmaceutical Laboratory Accreditation Program	Technical advisory committees	Conformity Assessment Standard(s) (e.g. ISO/IEC 17025, ISO/IEC 17020, etc.). AOAC International Guidelines	Meet conditions to attain and maintain accreditation	2-step process: 1. Application for Accreditation completed, along with supporting documentation, and payment. 2. On-site assessment Accreditation is granted when affirmative votes are received, all concerns are resolved, and all fees are paid in full	Program submission fee varies by institution.	5 years
British Accreditation Council	The responsibility for decisions on accreditation is delegated to BAC's Accreditation Committee	Requirements represent BAC's views of the least that is necessary for running a college	Five areas assessed	Three-stage process: Stage 1: Submission of application form and substantial supporting documentation Stage 2: Inspection focusing on 3 of the 5 areas assessed by BAC Stage 3: Inspection focusing on the	New institution: £1730 (£380 non-refundable application fee plus £1350 deposit against first inspection) Accredited institutions (renewal):	Accreditation is usually awarded for three or four years.

Association	Governance	Standards for Accreditation	Criteria for Accreditation	Accreditation Process	Program Submission Fee	Accreditation Period/Renewal
				remaining two areas	£1350	
International HACCP Alliance - Accreditation for HACCP Training Programs	Accreditation Review Committee	Standards and procedures for accreditation of HACCP education and training programs	Course must include pre-determined knowledge domains and learning objectives Criteria under following categories: <ul style="list-style-type: none"> ○ Lead Instructor Qualifications ○ Course Schedules ○ Class Roster 	<ul style="list-style-type: none"> ○ Training providers submit accreditation application for each type of course to the Alliance. ○ Accreditation Review Committee evaluates program application for accreditation. 	Initial application fee \$150, renewal fee \$100, \$10 fee per student	3 years, unless revoked
National Institute for Metalworking Skills, Inc.	No information on program governance available on website.	NIMS Skill Standards	Program Eligibility Requirements Pre-Requisites for Accreditation	Three-step process: <ul style="list-style-type: none"> ○ Registration of program with NIMS ○ Completion of self-study ○ On-site audit 	Application, self-study kit: \$500 On-Site Evaluation: \$1,000	5-years



About the Food Processing Human Resources Council (FPHRC)

The FPHRC is a well-integrated member of Canada’s food processing community, working in conjunction with government, provincial associations, community colleges, workplace programs and industry specialists. Our mandate is to educate and support the overall growth of this sector through various food safety and human resources initiatives. Our not-for-profit council works with companies across Canada to develop national skill standards, relevant course content, labour market research, on-site training programs and worker certification programs. From start to finish, our work is driven-by and further validated for authenticity by food and beverage manufacturers’ themselves.

For more information, please visit www.fphrc.ca.

