

National Curriculum Standard Background Information

The National Curriculum Standard (NCS) is a competency-based training curriculum framework for regulatory food protection professionals (FPPs) that supports a core component of the Integrated Food Safety System (IFSS): a competent workforce doing comparable work at the federal, state, and local (including tribal and territorial) levels. The NCS will provide FPPs with a comprehensive, national curriculum framework that is career-spanning, standardized, and standards- and competency-based thus allowing them to gain, maintain, or update the knowledge, skills, and abilities the profession requires.

Key to the development of the NCS has been the creation of the IFSS Curriculum Framework (hereafter the IFSS Framework). A curriculum “a set of learning experiences intentionally designed to help the participant achieve desired outcomes.” A curriculum framework (Kaml, 2013) provides a well-designed, thought-out, aligned, consistent, outcomes-based approach incorporating adult learning preferences and adherence to a national system standard by training providers. Such an outcomes-based approach requires an in-depth, scientifically conducted front-end analysis of training needs—specifically, the competencies (i.e., knowledge, skills, or abilities) required for the target audiences and the key performance indicators (KPIs) (i.e., proficiency measurements) to measure those competencies.

A curriculum framework is a schematic illustration of the relationship between, among, and progression through professional levels, core content (topic) areas, professional tracks (and program areas within those tracks), and spanning content areas (Kaml, 2013). Each content area contains competency statements and KPIs that can be used by an individual to assess his or her competency in that particular content area, and develop a personal learning plan based on his or her competency assessment. Figure 1 represents a high-level illustration of the elements in a curriculum framework based on the IFSS Framework being championed by IFPTI and FDA’s DHRD.

Figure 1. Curriculum Framework Example

Leadership	Core Content			Spanning Content Area
Technical Specialist	Professional Track (and Program Areas)	Professional Track (and Program Areas)	Professional Track (and Program Areas)	
	Core Content			
Advanced	Professional Track (and Program Areas)	Professional Track (and Program Areas)	Professional Track (and Program Areas)	
	Core Content			
Entry	Professional Track (and Program Areas)	Professional Track (and Program Areas)	Professional Track (and Program Areas)	
	Spanning Content Area			
	Core Content			

Professional levels represent various career stages within a profession, and are depicted in Figure 1 via color-coded horizontal rows. The IFSS Framework contains four professional levels: Entry Level (depicted by the brown row), Advanced Level (depicted by the white row), Technical Specialist Level (depicted by the gray row), and Leadership Level (depicted by the orange row).

Core content areas are the essential topics in which an individual, at each professional level, should attain competency. Each content area contains a set of competencies and KPIs that serve as the basis for the development of training and other learning experiences.

Professional tracks are specific areas of specialization within the profession. For example, within the IFSS Framework, there are three professional tracks: Unprocessed Food, Manufactured Food, and Retail Food (represented in blue, pink, and green in Figure 1). As an FPP advances within his or her profession (i.e. going from an Entry Level employee to an Advanced Level employee), he or she can continue to specialize in a particular professional track.

Spanning content areas are topics that are applicable either to multiple professional levels (depicted in yellow vertically on the framework) or professional tracks (depicted in yellow horizontally).

The National Curriculum Standard (NCS)

The vision for the NCS began in 2008 with the FDA 50-State Meeting and the creation of the Partnership for Food Protection (PFP). The PFP has representative membership across the country from federal, state and local regulatory agencies, and was created to advance the IFSS mission. The PFP established a number of workgroups to implement the IFSS. The PFP Training and Certification Workgroup was charged to develop a competency-based National Curriculum Standard (NCS) for the 30,000 to 50,000 regulatory FPPs in more than 2,500 federal, state, and local jurisdictions across the U.S.

In 2009, IFPTI began collaborating with a representative group of state and local FPPs and university academicians to design a competency-based, career-spanning professional development curriculum that encompasses and organizes existing professional development into efficient, effective, standards (Partnership for Food Protection (PFP) Training and Certification Workgroup Final Report, 2010). As part of a Cooperative Agreement with FDA's Division of Human Resource Development in 2011, IFPTI became the architect in meeting the PFP Workgroup's charge of creating a national training standard. The "blueprint" for this national standard is the IFPTI competency-based curriculum framework development process. (For more information go to the FDA PFP website: <https://www.fda.gov/ForFederalStateandLocalOfficials/ProgramsInitiatives/PartnershipforFoodProtectionPFP/default.htm>)

IFPTI has overseen the development of competency-based curriculum frameworks for a variety of U.S. regulatory FPPs, including those working in the animal food, manufactured food, and retail food sectors, along with laboratory professionals. During the creation of these frameworks, IFPTI has facilitated dozens of working groups comprising food protection (which encompasses food safety and defense) subject matter experts (SMEs) from federal, state, and local regulatory agencies, academic institutions, and food protection organizations such as the AFDO, the Association of American Feed Control Officials (AAFCO), APHL, and NEHA.

IFSS Framework

IFPTI began facilitating the development of the IFSS Framework (sometimes referred to as the "Main Framework") in 2011. FDA DHRD assembled a working group of thirty SMEs representing federal, state, and local regulatory jurisdictions, and by utilizing the IFPTI curriculum development process, the group built out an initial framework featuring four professional levels (Entry, Advanced, Technical Specialist, and Leadership), more than one hundred content areas, three professional tracks (Unprocessed, Manufactured, and Retail), and specialized program areas within those professional tracks (e.g., Dairy Processing, Shellfish Plant, Produce). IFPTI has facilitated more than ten meetings with the IFSS Framework SME Working Group since 2011. Most of these meetings have spanned a period of 3.5 to 4 days, and most have been held at DHRD headquarters in Rockville, MD. Figure 2 included in the Appendix represents the IFSS Framework in its current form.

As of now, the IFSS Framework Working Group has fully built out the twenty-five core content areas at the Entry Level (the bottom row of the framework, in brown). These core content areas are often referred to as the General Education content areas, or "Gen Eds." Gen Ed content areas include topics such as Allergens, Biological Hazards, Jurisdiction, Public Health Principles, and Sampling. "Fully built out" means that the IFSS Framework SME Working Group has identified all of the competencies needed by an Entry Level FPP, and these competencies were used by the IFPTI Instructional Systems Design (ISD) Team to create course design documents (CDDs) for online courses scheduled to be launched later this year.

The Gen Ed course CDDs created by the IFPTI ISD team outlined the learning objectives for each online course along with the content to be covered. IFPTI handed these CDDs off to ISD teams from five Cooperative Agreement recipients (Auburn University, the University of California at Davis, IFPTI, NEHA, and the University of Tennessee), along with CFIA, who are creating the online courses in collaboration with more than 185 subject matter experts. The Association of Food and Drug Officials (AFDO) has a group of SMEs currently reviewing and refining the Gen Ed courses for FDA that are expected to be on line later this year.

Retail Food Framework

In 2015, IFPTI began leading the creation of the Retail Food Framework with a group of fifteen federal, state, and local FPPs specializing in the regulation of retail food establishments. The Retail Framework comprises four professional levels: Entry, Advanced, Technical Specialist, and Leadership. The Retail Framework Working Group has met a total of four times, with each meeting spanning four days and being facilitated by IFPTI. Figure 3 included in the Appendix represents the Retail Food Framework in its current form.

At the time of this proposal, the Retail Food Framework Working Group has identified six content areas at the Entry Level, including Active Managerial Control, Introduction to Special Processes, Non-Traditional Food Outlets, Oral Culture Learning, Regulatory Foundations for Retail Food Safety, and Risk-Based Inspection, and has identified all of the competencies needed by an Entry Level FPP associated with these content areas. The working group has initially identified content areas at the Advanced Level (Plan Review and Special Processes), and Technical Specialist Level (FDA Retail Program Standards). At subsequent meetings, the working group will begin to further develop the framework, including competencies and KPIs, depending on Cooperative Agreement support.

Food Foundations Framework

Work on the Retail Food Framework and the Manufactured Food Framework was put on hold to allow SMEs from each of those workgroups to meet to identify common curriculum content areas in a new framework called Food Foundations. The Food Foundations workgroup will review the Retail Food Framework and the Manufactured Food Framework to develop competencies applicable to both the Retail and Manufactured Food program areas, tailored to regulators who have demonstrated the Gen Ed competencies and who are planning on advancing into either the Retail Food or Manufactured Food Professional Track.

The Food Foundations Work Group met July 25-29, 2016, August 16-19, 2016, October 18-21, 2016, and December 13-16, 2016, and will meet again March 21-24, 2017. During these meetings, the Work Group built out competencies related to nine (9) Content Areas identified in the Food Foundations Framework. Figure 4 included in the Appendix represents the Food Foundations Framework in its current form. When work is completed on the Food Foundations Framework development will resume on the Retail Food Framework.

Interactive National Curriculum Standard

IFPTI has built an online system (the Interactive National Curriculum Standard, or INCS) for U.S. government (federal, state, and local) regulatory FPPs for animal and human food. The INCS features an interactive website that allows the user to identify competency statements within each content area of the IFSS Framework, Animal Food Framework, Manufactured Food Framework, and Retail Food Framework. The system also includes a course catalog that aligns learning experiences (courses, training, etc.) to specific content areas and links out to the service provider of those learning experiences. **The INCS, which can be found at <http://incs.ifpti.org>, will comprise a key element in the current project.** There are descriptions of both the Competency Framework and the Curriculum Framework and their interrelationship.

A unique feature of the online system is an assessment instrument that allows individuals to assess themselves against a set of identified competencies, and allows supervisors to assess their staff against that set of competencies. The assessment feature also allows the user to create a gap report for use in competency coaching and the development of personal or group learning plans.

National Assessment and Training Strategy

A next phase of this project projected to start later in 2017 is to prepare regulatory food protection agencies to deliver much of the training in the IFSS Curriculum Framework in the field through field based trainers/assessors. The National Assessment and Training Strategy (NATS) will incorporate field-based training, assessment, mentoring, and coaching into a portfolio of learning experiences delivered to government food protection professionals by government food protection agency in-the-field trainers/assessors. A SME Workgroup will develop the competencies and key performance indicators for in-the-field trainers and assessors.

NATS focuses on assessing employees' competency against the National Curriculum Standard (NCS) competencies, provide learning experiences to help obtain the desired competencies, and then reassessment by a trained field-based assessor in everyday work conditions. The intent of this strategy is to increase access to learning experiences (training) via trained, field-based, agency-level instructors, who are also trained assessors. These instructors/assessors can provide intra or interagency assessment of other instructors' learners. The main approach of this strategy is to use field-based experiences to guide employees' learning, however, the learning plan can lever all methods of learning experiences, such as online, self-paced, mentored, and classroom-based courses.

The overarching objective of the project is to develop a **competency and curriculum framework** for in-the-field trainers/assessors in government food safety agencies. Competencies are the knowledge, skills, and abilities necessary for successful job performance. A *competency framework* is a model that broadly defines the blueprint for excellent performance *within a particular profession* at various points of one's career. The framework helps identify high-level competencies (desired outcomes or behavior), enumerates metrics by which competency can be measured, spells out observable and measureable characteristics, and provides evaluation criteria.

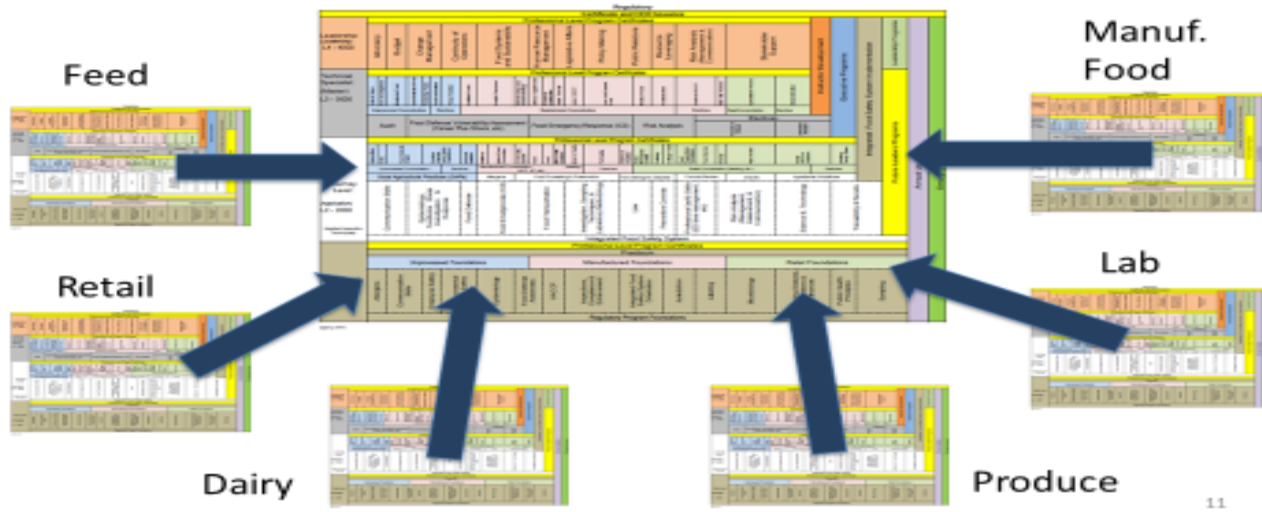
The competency framework will serve as the foundation for the in-the-field trainer/assessor curriculum framework, a color-coded visual schematic that represents the roadmap for content area learning experiences (training, courses, etc.) that will enable in-the-field trainers/assessors to match the blueprint for excellence spelled out by the competency framework.

Appendix

Figure 2. IFSS Framework

ifpti		INTERNATIONAL FOOD PROTECTION TRAINING INSTITUTE		Integrated Food Safety System Food Protection Professionals Curriculum Framework												FDA U.S. FOOD & DRUG ADMINISTRATION																																			
Certificate and CEU issuance																																																			
Leadership	Advocacy		Communication Management		Compliance		Human Resource Management		Laws & Regulations		Legislative Affairs		Mediation		Organizational Design		Program Resources		Risk Management		Strategic Planning		Emergency Response Skills	Communication Skills	Integrated Food Safety System																										
	L1		L2		L3		L4		L5		L6		L7		L8		L9		L10		L11					L12	L13	L14																							
Technical Specialist [Program Specific]	Dairy - on farm Program		Eggs (shell) Program		Fish & Seafood Program		Produce Program		Shellfish Growing Areas Program		Animal Food Program		Dairy Processing Program		Meat & Poultry [USDA/FSIS]		Manufactured Food Program		Shellfish Plant Program		Retail Food Program				Emergency Response Skills	Communication Skills	Integrated Food Safety System																								
	T23		T24		T25		T26		T27		T28		T29		T30		T31		T32		T33							L15	L16	L17																					
Unprocessed Concentration		Unprocessed Electives		Manufactured Concentration		Manufactured Electives																																													
Technical Specialist [Expert]	Audit		Critical Thinking		Food Defense Vulnerability Assessment		Legal Proceedings Preparation		Management Skills		Policy Development		Professional Development Planning		Program Evaluation		Project Management		Reference Materials		Report Evaluation		Risk Analysis		Supervision Skills		Research Design [Elective]		Statistical Analysis [Elective]		Emergency Response Skills	Communication Skills	Integrated Food Safety System																		
	E1		E2		E3		E4		E5		E6		E7		E8		E9		E10		E11		E12		E13		E14		E15	E16				E17																	
Level 2 Professional Certificate															Instructor Skills [Elective]		Leadership Skills																																		
Advanced [Program Specific]	Dairy - on farm Program		Eggs (shell) Program		Fish & Seafood Program		Produce Program		Shellfish Growing Areas Program		Shellfish Plant Program		Animal Food Program		Dairy Processing Program		Meat & Poultry [USDA/FSIS]		Manufactured Food Program		Shellfish Plant Program		Department of Defense [DOD]		Interstate Travel Program [FTA]		National Marine Fisheries Service [NOAA]		Vessel Sanitation Program [VSP]		Retail Food Program		Emergency Response Skills	Communication Skills	Integrated Food Safety System																
	A1		A2		A3		A4		A5		A6		A7		A8		A9		A10		A11		A12		A13		A14		A15		A16	A17				A18															
Unprocessed Concentration		Unprocessed Electives		Good Agricultural Practices [GAPs]		Manufactured Concentration																																													
Enforcement		Evidence		Feed / Food Defense		Imports		Inspections		Investigative Skills		Laboratories		Outbreak Investigation		Product Disposition		Risk Analysis		Sampling		Transportation																													
A1		A3		A3		A4		A5		A6		A7		A8		A9		A10		A11		A12		A13		A14		A15		A16																					
Level 1 Professional Certificate																																																			
Entry [Program Specific]	Dairy - on farm Program		Eggs (shell) Program		Produce Program		Shellfish Growing Areas Program		Import Foundations [Federal Agencies]		Animal Food Program		Dairy Processing Program		Game		Meat & Poultry [USDA/FSIS]		Manufactured Food Program		Shellfish Plant Program		Retail Food Program				Emergency Response Skills	Communication Skills	Integrated Food Safety System																						
	E38		E39		E40		E41		E39		E40		E41		E42		E43		E44		E45		E46		E47					L18	L19	L20																			
Unprocessed Foundations																																																			
Entry [Basic]	Allergens *		Biological Hazards		Biosecurity		Data & Information Systems		Environmental Hazards		Food / Feed Defense		HACCP		Imports		Inspections, Compliance, & Enforcement		Investigation Principles		Jurisdiction		Labeling		Laws, Regulations, Rules, & Procedures		Reasonable Safety		Preventive Controls **		Professionalism		Public Health Principles		Recalls		Sampling		Sanitation Principles		Traceability		Transportation		Emergency Response Skills		Communication Skills		Integrated Food Safety System		
	E6		E7		E8		E9		E10		E11		E12		E13		E14		E15		E16		E17		E18		E19		E20		E21		E22		E23		E24		E25		E26		E27		E28		E29		E30		E31
Regulatory Foundations																																																			
©2017 IFPTI, Inc. Updated 1/3/2017		* Not for Animal Food		** Not for Retail		The National Curriculum Standard (NCS) is a food safety professional training standard supported by FDA's cooperative agreement grants (5U54FD000424-04 and 1U19FD000564-01) and IFPTI to advance the mission of the Partnership for Food Protection's Integrated Food Safety System. An interactive version of the IFSS Food Protection Professional Curriculum Framework can be found at www.ifpti.org/nca												Core content areas in which everyone at that Professional Level should have competency are denoted by dotted borders.																																	

Current Curriculum Development Main Framework



11

Curriculum Framework

- A platform/system to catalog/organize learning events
- Similar to a library
- Learning events are like the books with each categorized and in sections (content areas)



Figure 3. Retail Food Framework

ifpti INTERNATIONAL FOOD PROTECTION TRAINING INSTITUTE	Retail Curriculum Framework					FDA
Leadership	See Food Protection Professionals Curriculum Framework					
Technical Specialist	Report of Completion					
	FDA Retail Program Standards					
	TS1					
Advanced	Report of Completion					
	Plan Review			Special Processes		
	A1			A2		
Entry	Report of Completion					
	Active Managerial Control	Introduction to Special Processes	Non-Traditional Food Outlets	Oral Culture Learning	Regulatory Foundations for Retail Food Safety	Risk-Based Inspection
	E1	E2	E3	E4	E5	E6

Figure 4 Food Foundations Framework

ifpti INTERNATIONAL FOOD PROTECTION TRAINING INSTITUTE	Food Foundations								FDA U.S. FOOD & DRUG ADMINISTRATION	
Entry	Report of Completion									
	Biosecurity	Communication Skills	Emergency Response	Facility Design	Food Processes	Inspections	Investigations	Recall / Traceability	Sampling	
	FF1	FF2	FF3	FF4	FF5	FF6	FF7	FF8	FF9	

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 The National Curriculum Standard (NCS) is a food safety professional training standard supported by FDA's cooperative agreement grants (5U54FD004324-04 and 1U18FD005964-01) and IFPTI to advance the mission of the Partnership for Food Protection's Integrated Food Safety System. An interactive version of the IFSS Food Protection Professional Curriculum Framework can be found at www.ifps.org/ncs