Dairy Foods Extension

2022

COURSE CATALOG

Providing cutting-edge research, education, and support to the dairy industry in New York State and beyond.

Cornell CALS
College of Agriculture and Life Sciences
The Department of Food Science at Cornell University is one of the premier programs worldwide for collaborative research and extension programing. Our faculty, staff, and students support cutting-edge research in chemistry, microbiology, engineering, biotechnology, nutrition, and physiology, which has improved the nutritional value, safety, quality, affordability, and profitability of foods and beverages. These research initiatives are integrated with translational extension efforts that together help improve public health and stimulate business development.

The mission of the food science extension programs at Cornell is to assist farms and food businesses in New York State and beyond with the implementation of new technologies and production strategies that will improve product quality, safety, nutrition, and marketability. Extension personnel, located at the Cornell University Campus in Ithaca, NY and at Cornell AgriTech in Geneva, NY, facilitate these activities through technology transfers, process validations, project incubation, piloting, crisis management support, workshops and web-based training, and consultation.

Through our work in research and extension, the food science extension programs have helped tens of thousands of food industry stakeholders. Measurable outcomes for these interactions have included bringing products to market, achieving regulatory compliance, reducing food safety risks, and adding value or extending product lines.

**For More Information**

CALS Department of Food Science
cals.cornell.edu/food-science

**To Contact Us**

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The Cornell Dairy Foods Extension Certificate program offers comprehensive training for dairy processors of all sizes within New York State and beyond. In NYS alone, dairy manufacturing accounts for 23% of all agricultural manufacturing sales and 12% of employment, and relies heavily on in-state milk production from the farming sector. Dairy Foods Extension provides training and certificates in five areas including: (1) the Science of Yogurt and Cultured Dairy Products; (2) Fluid Milk Processing for Quality and Safety; (3) Membrane, Evaporation and Drying Technology; (4) The Science of Cheese Making; and (5) Ice Cream and Frozen Desserts. Courses aim to provide comprehensive basic training to dairy processors in vital topics such as milk quality and safety, dairy microbiology, Good Manufacturing Practices, unit operations, cleaning and sanitizing, food safety plans, audits, and state and federal regulations.

Meet the Team

Martin Wiedmann, PhD
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Expertise: Listeria monocytogenes, pre-harvest food safety, molecular pathogenesis, microbial ecology and epidemiology

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Meet the Team

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**Expertise:** Workshop/short course organization & planning, food safety systems, GMPs, social media/web development

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**Expertise:** Course coordination & data management

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**Expertise:** Course coordination & data management
Course Information

Registration and Confirmation
Please visit the Cornell Dairy Foods Extension website to register for courses: cals.cornell.edu/dairy-extension

Please contact Louise Felker (lmf226@cornell.edu) with any special payment circumstances prior to registering.

Cancellation Policy
Registration must be canceled by the close of business on the Friday two weeks prior to the start of the course in order to receive a full refund. Substitute registrations from the same company will be accepted at any time prior to the start of the course. No refunds will be given to individuals that fail to attend to their scheduled course.

Required Materials
All required course materials will be provided by Cornell University Dairy Foods Extension. Participants will be notified if the course requires use of a personal laptop computer during the hands-on sessions. Courses that include an online, self-paced portion require that the online materials be completed prior to the start of the hands-on workshop.

Certificate of Achievement
Attendees must sign in at the beginning of the workshop and attend all days of the workshop to qualify to receive a certificate of achievement. Attendees must also score a 70 or higher on the course post-test to pass the course and receive their certificate. One retake of the post-test is allowed per attendee.

Dairy Foods Certificate Program | Steps to Earning a Certificate

Core Courses
These courses are required to complete any chosen track for the specialized certificate programs. Dairy Science and Sanitation, a food safety course, and a pasteurizer course are required for Basic Certification. Pathogen Environmental Monitoring, SOP and Technical Writing, and Leadership Skills for Success are required for Advanced Certification.

Specialized Courses
Choose one specialized course per certificate:

• Science of Cheese (Basic & Advanced Levels Available)
• Science of Yogurt and Cultured Dairy Products (Basic & Advanced Levels Available)
• Fluid Milk Processing for Quality and Safety (Basic & Advanced Levels Available)
• Artisan Ice Cream and Frozen Desserts (Basic & Advanced Levels Available)
• Membrane, Evaporation, and Drying Technology
## Certificate Program

### Core Courses

(Dairy Science and Sanitation, a Food Safety Course, and a Pasteurizer Course Required)

<table>
<thead>
<tr>
<th>Core Course</th>
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<tbody>
<tr>
<td>Dairy Science and Sanitation</td>
</tr>
<tr>
<td>Food Safety Course (One Required)</td>
</tr>
<tr>
<td>Accredited HACCP or PCQI</td>
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<tr>
<td>Pasteurizer Course (One Required)</td>
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<tr>
<td>HTST or Vat Pasteurizer</td>
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</tbody>
</table>

### Specialized Courses

(Choose One Specialized Course per Certificate)

<table>
<thead>
<tr>
<th>Specialized Course</th>
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<tbody>
<tr>
<td>Science of Cheese (Basic Level)</td>
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<tr>
<td>Science of Yogurt (Basic Level)</td>
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<tr>
<td>Fluid Milk Processing for Quality and Safety</td>
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<tr>
<td>Ice Cream and Frozen Desserts (Basic Level)</td>
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<tr>
<td>Membrane Filtration, Evaporation, and Drying Technology</td>
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</tbody>
</table>

### Advanced Core Courses

(All Courses Required)

<table>
<thead>
<tr>
<th>Advanced Core Course</th>
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<tbody>
<tr>
<td>Environmental Monitoring Programs</td>
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<tr>
<td>SOP and Technical Writing</td>
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<tr>
<td>Leadership Skills for Success</td>
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</tbody>
</table>

### Advanced Specialized Courses

(Choose One Advanced Specialized Course per Certificate)

<table>
<thead>
<tr>
<th>Advanced Specialized Course</th>
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<tbody>
<tr>
<td>Science of Cheese (Advanced Level)</td>
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<tr>
<td>Science of Yogurt (Advanced Level)</td>
</tr>
<tr>
<td>Fluid Milk Processing for Quality and Safety (Advanced Level)</td>
</tr>
<tr>
<td>Ice Cream and Frozen Desserts (Advanced Level)</td>
</tr>
</tbody>
</table>

Successful completion of Core Courses and appropriate Specialized Course required for Basic Certification. Certificate valid for 3 years. 15 hours every 3 years of approved course work or meeting attendance required for renewal. See examples on the next page.

Successful completion of Basic Certificate Track, Advanced Core Courses, and appropriate Advanced Course required for Advanced Certification. Certificate valid for 3 years. 15 hours every 3 years of approved course work or meeting attendance required for renewal.
## Certificate Program – Examples

### Example 1: I want to earn an Advanced Science of Cheese Certificate. What courses should I take?*

<table>
<thead>
<tr>
<th>Core Courses</th>
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</thead>
<tbody>
<tr>
<td>Basic Dairy Science and Sanitation</td>
<td>HACCP</td>
<td>Vat Pasteurizer</td>
</tr>
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### Specialized Courses

<table>
<thead>
<tr>
<th>Science of Cheese (Basic Level)</th>
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</table>

### Advanced Core Courses

<table>
<thead>
<tr>
<th>Environmental Monitoring Programs</th>
<th>SOP and Technical Writing</th>
<th>Leadership Skills for Success</th>
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</thead>
</table>

### Advanced Specialized Courses

<table>
<thead>
<tr>
<th>Science of Cheese (Advanced Level)</th>
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</thead>
</table>

### Example 2: I need to renew my Basic and/or Advanced Certificate. How do I do that?**†

<table>
<thead>
<tr>
<th>Attend Association Meeting</th>
<th>Attend Dairy Foods Extension Workshop</th>
<th>Attend State and Federal Regulatory Webinar, Training or Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYS Association for Food Protection</td>
<td>Any Dairy Foods Workshop</td>
<td>Processing Plant Superintendent</td>
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<tr>
<td>NYS Cheese Manufacturers</td>
<td>Any track</td>
<td>Dairy Lab Seminar</td>
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<tr>
<td>Northeast Dairy Foods Association</td>
<td>Other Dairy Foods workshops outside of the Certificate program</td>
<td>CMI School</td>
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<tr>
<td>American Cheese Society</td>
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<td>CMI Update</td>
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<tr>
<td>IAFP</td>
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<td>NCIMS</td>
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<td>IFT</td>
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<td>NADRO</td>
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<td>AFDQ</td>
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<td>SQF</td>
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<tr>
<td>Dairy Practices Council</td>
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<tr>
<td>Other meetings (pending approval)</td>
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</tbody>
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*Example progression. Our team will work with you to customize your progression.
†Must complete 15 hours every 3 years for Basic Certification and/or Advanced Certification renewal.
Core Courses

Basic Dairy Science and Sanitation
Available in English and Spanish
Online (Self-Paced), 2 CEUs – The Dairy Science and Sanitation Workshop is tailored to dairy processing personnel and is designed to help participants understand the basic principles of dairy science and safety, as well as emphasize dairy processing establishment needs related to dairy sanitation to ensure that proper programs are conducted in their establishments.

The course consists of online lectures that cover basic dairy science, including composition of milk, dairy microbiology, dairy food safety, as well as an overview of dairy regulations. Participants will also learn the basics of cleaning and sanitizing principles, unit operations—both raw milk production and receiving, and dairy processing, plant equipment and design, general control of pathogenic and spoilage microorganisms, in depth information on cleaning and sanitizing chemicals, their properties and applications, and a discussion on CIP and COP systems and common errors seen in the industry.

Learning Outcomes
• Basic dairy microbiology/food safety overview
• Good manufacturing practices/dairy sanitation
• Milk composition and unit processing operations
• Dairy regulations/Food Safety Modernization Act

High Temperature Short Time (HTST) Pasteurizer Operator Workshop
Multiple Delivery Styles (Live via Teleconference or On-Campus)
3 Day Course, 3 CEUs – This workshop is designed for pasteurizer operators, but should be beneficial to all involved with milk pasteurization, including production, QA/QC and maintenance personnel. The course is instructed by industry experts and representatives from NYS Agriculture & Markets and provides an overview of the design, operation, cleaning and maintenance of HTST systems. All required regulatory tests for HTST pasteurizers will be discussed and/or presented in a hands-on format to meet the training requirements for performing HTST system testing under the NY State Broken Seal Policy. Information on HTST/UHT systems will be covered. Background in dairy microbiology, product safety & quality will also be provided.

Learning Outcomes
• HTST and UHT operation components
• Regulatory requirements for HTST operation
• Cleaning and sanitizing HTST programs
• Requirement as part of NYS Broken Seal Program
Core Courses

**Vat Pasteurizer**

**Online (Self-Paced), 1 CEU** – This course may be used to fulfill the pasteurization component requirements for the Dairy Foods Certificate Program in all certification tracks but can also be taken as an individual course by people interested in vat pasteurization methods, rules, and regulations.

**Learning Outcomes**

- Basic dairy microbiology/food safety overview
- Good manufacturing practices/dairy sanitation
- Milk composition and unit processing operations
- Dairy regulations/Food Safety Modernization Act

**Advanced Core Courses**

**Environmental Monitoring Programs**

**Hybrid Course, 2 CEUs** – This course will prepare participants to develop and implement an effective Pathogen Environmental Monitoring program that will achieve greater product safety and quality. The course will focus on pathogens of concern and the importance of environmental sampling programs. Potential sources of contamination will be identified and control steps outlined. Participants will work in small groups to develop an Environmental Monitoring Plan and discuss mitigation steps and corrective actions to control microbial contamination in a food processing facility.

**SOP and Technical Writing**

**Multiple Delivery Styles (Live via Teleconference or Online, Self-Paced)**

**Hybrid Course, 2 CEUs** – This course presents the process of writing and maintaining Standard Operating Procedures for both regulatory compliance and everyday employee usage.

**Learning Outcomes**

- Outline regulatory requirements
- Determine which processes to document
- Evaluate the relationship between process documents
- Identify the audience
- Explain systems, activities, and processes
- Tense and word choice
- Writing effective documents
- Review and revision process
- Document compliance
Leadership Skills for Success

Live via Teleconference

3 Half-Day Course, 2 CEUs – Master critical communication and leadership skills to effectively manage employees, establish priorities and delegate responsibilities while building awareness of team dynamics and how to engage employees through group problem-solving and decision making. Gain the commitment of others and add value to your organization by being clear about the results you want to achieve, the environment you want to create, and how you will develop and deploy talent. Become an effective leader with the ability to build relationships and manage workplace communications to be heard and understood by others while enhancing employee engagement and ensuring alignment and collaboration amongst members.

Specialized Courses (Basic & Advanced)

The Science of Cheese (Basic Level)

Hybrid Course, 2 CEUs – This workshop is designed for cheese manufacturers or others interested in the basic concepts of cheese making and is a required part of the Dairy Extension Basic Science of Cheese Certificate.

The course may also be taken as a stand-alone training. The course begins with an online lecture component covering the key areas related to vat pasteurization and basic cheese making techniques, cheese culture basics, milk defects, and cheese defects. The course will also include cheese making activities.

Learning Outcomes

• Foodborne pathogens resulting from unpasteurized milk
• Components of vat pasteurization
• Thermometer requirements
• Chart recorders and chart requirements
• Milk quality which impacts cheese making
• Cheese culture and chemistry and microbiology
• Cheese-making unit operations and techniques and hands-on cheese making

The Science of Cheese (Advanced Level)

2 Day Course, 2 CEUs – This workshop is designed for advanced level cheese manufacturers or others interested in the advanced concepts of cheese and is a required part of the Dairy Extension Advanced Science of Cheese Certificate.

The course may also be taken as a stand-alone training. The workshop will provide attendees with a review of information in key areas related to the complex chemistry of cheese, cheese styles and
Specialized Courses

standards of identity, advanced microbiology, advanced cheese problems and defects, and food safety challenges in the cheese industry. It is expected that the attendee has a variety of applied experience as this course is designed to test overall knowledge and problem-solving as it relates to cheese. This course assumes the attendee understands applied concepts and science as it relates to cheese before arrival.

Learning Outcomes
• Milk components and advanced chemistry of cheese
• Cheese styles and standards of identity
• Cheese defects during process and affinage

The Science of Yogurt and Cultured Dairy Products (Basic Level)

Hybrid Course, 2 CEUs – This workshop is designed for yogurt and fermented dairy product manufacturers and is a required part of the Dairy Extension Basic Yogurt and Fermented Dairy Products Certificate. The course may also be taken as a stand-alone training. The workshop will provide attendees with information in key areas related to milk quality and its impact on finished dairy products, product evaluation and defects, ingredients in cultured dairy products, and product processing and formulation.

Learning Outcomes
• Milk quality and impact on cultured dairy products
• Culture microbiology and hands-on cultured dairy making
• Unit operations and sanitation in cultured dairy production
• Formulation utilizing different ingredients

The Science of Yogurt and Cultured Dairy Products (Advanced Level)

2 Day Course, 2 CEUs – This workshop is designed for advanced level yogurt and fermented dairy product manufacturers and is a required part of the Dairy Extension Advanced Yogurt and Fermented Dairy Products Certificate. The course may also be taken as a stand-alone training. The workshop will provide attendees with information in key areas related to advanced microbiology, chemistry in fermented milk and dairy product production, along with advanced sensory product evaluation, safety and quality assurance.

Learning Outcomes
• Milk components and advanced chemistry of cultured-dairy making
• Innovations in cultured dairy production
• Advanced sensory characteristics
Specialized Courses

Fluid Milk Processing/Testing for Quality and Safety Workshop

Hybrid Course, 2 CEUs – This workshop is designed for those involved and/or interested in fluid milk processing and testing with the intent of providing the tools to support and improve on quality assurance/ control and food safety programs for bottled milks. While the course design assumes participants have some prior knowledge of dairy microbiology and processing (e.g., Dairy Science & Sanitation Course), critical concepts will be reviewed and expanded on for those who do not have prior knowledge.

Learning Outcomes

• Basic microbiology in relation to milk quality and safety
• Influence of raw milk quality on pasteurized milk quality and shelf-life
• Fluid milk processing parameters
• Tools for assessing milk quality and shelf-life

Membrane Filtration, Evaporation, and Drying Technology

2 Day Course, 2 CEUs – This workshop is designed for those involved and interested in the fractionation, separation, concentration, and drying of dairy products and ingredients. Quality, processing, food safety and cleaning are aspects of the courses. While the course design assumes participants have some prior knowledge of dairy processing, critical concepts will be reviewed and expanded on for those who do not. This course can be taken as a stand-alone program.

Introduction to Artisan Ice Cream and Frozen Desserts

Hybrid Course, 2 CEUs – This course is designed for the artisan ice cream manufacturer and will focus on select types of frozen desserts, including their composition and physical properties, ingredients, sensory, as well as equipment and the manufacturing process.

Learning Outcomes

• The composition of ice cream and origin of the ingredients within the food system
• The physical and chemical changes that occur during ice cream production
• The equipment involved in making ice cream and product development
• The sensory properties of ice cream
Food Safety Courses

Accredited HACCP Training Course

Available in English and Spanish

Online (Self-Paced), 2 CEUs – This course is designed for individuals who have responsibility for building, maintaining, and updating plant HACCP programs that will meet customer and third-party requirements. This course is accredited under the International HACCP Alliance and is designed to meet the requirements set for GFAI, NCIMS, FSIS, and the FDA.

Implementing SQF Systems Course

3 Day Course – This workshop is designed to give participants an understanding of the SQF Code, how to implement requirements in food production, manufacturing, storage, distribution, or packaging to achieve or maintain SQF Certification. It is required that students have completed a HACCP Course of at least 16 hours prior to taking this course.

Artisan Dairy Food Safety Plan Coaching

Hybrid Course, 2 CEUs – This coaching workshop is intended for Artisan Dairy Food Producers who are preparing to create, or are already developing, a FSMA compliant preventive control (PC)-based food safety plan for their facility. The goal of this workshop is to provide Food Safety Plan review and coaching sessions that guide attendees through each step in development process. PCQI lead trainers will be present to review topics and answer questions. Templates (digital and paper) will be provided to facilitate plan development, attendees are encouraged to bring their current or in-progress plans.

Note: This course is NOT intended to provide PCQI certification, it is strongly recommended that attendees complete an FSPCA PCQI certification course or similar program before attending this workshop. Attendees are also encouraged to enroll and complete the Food Safety for Artisan/Farmstead Cheesemakers prior to taking this workshop. The link to this online training will be provided upon registration.
Food Safety & Regulatory Courses

Applied Food Safety Plans – An Advanced Refresher Course

2 Day Course, 2 CEUs – This course is designed for anyone that has had HACCP and/or PCQI training and has worked in a role that has been part of a Food Safety team in a plant environment.

Most third-party auditing schemes recommend that HACCP and/or PCQI training be updated every 5 years. This course will meet these criteria. The other benefit of this course is a more advanced understanding of Food Safety Plans. The goal of this workshop is to explain and clarify the differences between programs that your facility may have already had as prerequisite programs (i.e., Allergen programs, Sanitation programs, etc.), and the “new” expectations of Preventive Controls that are required by FSMA.

The workshop will include a hands-on group activity that includes a risk analysis and a group discussion on best practices. We will also address how to perform a thorough Root Cause Analysis and Food Safety Culture including strategies to implement it in your facility.

Successful completion of this workshop will provide attendees with a review of the tools necessary to build a new or update outdated HACCP/Food Safety Programs.

This course will be taught by Lead Instructors trained by the FSPCA, SQF, and HACCP Alliance. The attendees will earn a certificate that will meet third-party requirements for training.

Regulatory Courses

FSMA Preventive Controls Qualified Individual Training*

Multiple Delivery Styles (Live via Teleconference or On-Campus)

3 Day Course, 2.5 CEUs – The Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food regulation is intended to ensure safe manufacturing/processing, packing and holding of food products for human consumption in the United States. The regulation requires that certain activities must be completed by a preventive controls qualified individual who has successfully completed training in the development and application of risk-based preventive controls. This course developed by the FSPCA is the standardized curriculum recognized by FDA; successfully completing this course is one way to meet the requirements for a preventive controls qualified individual.

These courses are taught by Lead Instructors trained by the FSPCA, who have been instructed in how to teach the FDA-recognized standardized curriculum.

*Course description provided by the Food Safety Preventive Controls Alliance
Regulatory Courses

Intentional Adulteration Vulnerability Assessments (IAVA)

1 Day Course – This course will provide participants with the knowledge to implement the requirements of conducting a vulnerability assessment under the Mitigation Strategies to Protect Food Against Intentional Adulteration (IA) regulation of the U.S. Food and Drug Administration (FDA). This regulation is one of a number of regulations and guidance that implement the provisions of the 2011 Food Safety Modernization Act (FSMA), which focuses on safe food practices.

The Mitigation Strategies to Protect Food Against Intentional Adulteration regulation (referred to as the IA rule) is aimed at preventing intentional adulteration from acts intended to cause wide-scale harm to public health, including acts of terrorism targeting the food supply. The regulation requires that certain activities must be completed by a “food defense qualified individual” who has successfully completed training in the conduct of a vulnerability assessment. This course developed by the FSPCA is the “standardized curriculum” recognized by FDA; successfully completing this course is one way to meet the requirements for a “food defense qualified individual” responsible for conducting a vulnerability assessment. These courses are taught by Lead Instructors trained by the FSPCA, who have been instructed on how to teach the FDA-recognized standardized curriculum.

Foreign Supplier Verification Programs

Live via Teleconference

2 Day Course, 2 CEUs – This course will provide participants with the knowledge to implement the requirements of the “Foreign Supplier Verification Programs (FSVP) for Importers of Food for Humans and Animals” regulation of the U.S. FDA. This regulation is one of a number of regulations and guidance that implement the provisions of the 2011 Food Safety Modernization Act (FSMA), which focuses on safe food practices. This course is designed for U.S. based importers who meet the definition of “importer” in the FSVP rule, which includes those who own or are the consignee of food at the time of entry, or, if no owner or consignee exists, the U.S. agent or representative of the foreign owner. Others who have an interest in ensuring that the requirements of the FSVP rule are met, including brokers, exporters, foreign suppliers of food that will be exported to the U.S., persons/business owners who currently buy food from foreign sources, and representatives of foreign governments.

The FSVP curriculum was designed by regulatory, academia, and industry professionals and developed with funding from FDA as part of the FSPCA. In contrast to the Preventive Controls rules, the FSVP rule does not require you to attend a training program following a “standardized curriculum” recognized by FDA. Attending this course, however, will help you understand the FSVP requirements and how those requirements can be met in your particular circumstance. These courses are taught by Lead Instructors trained by the FSPCA, who have been instructed on how to teach the FDA-recognized standardized curriculum.
Regulatory Courses

Dairy Processing Plant Superintendent
1 CEU – Annual update provides dairy plant personnel with regulatory and extension updates. Offered at 4 locations each spring. Required update for all NY State Dairy Processing Plant Superintendents (PPS).

Dairy Laboratory Regional Workshops
1 CEU – Provides dairy laboratory personnel with regulatory, procedural and scientific updates.

Certified Milk Inspectors Training School
2.5 CEUs – Provides detailed instruction of required dairy farm inspections and is a required course for Certified Milk Inspectors (CMI), those who inspect dairy farms. Offered once each summer.

Certified Milk Inspectors Annual Update
Provides regulatory and extension updates on farm inspection & milk quality. Offered at 4 locations each fall. Required update for licensed Certified Milk Inspectors (CMIs).

New York State Fair Dairy Judging and Awards Program
Provides dairy plants the opportunity to receive awards and recognition for product quality at New York State Fair. Coordination and judging of dairy products for state fair competition occurs each summer at Cornell.
Specialty Training Programs

In addition to our Regulatory and Certificate program Training Courses, we also offer a selection of specialty courses in both food safety topics and advanced level hands-on training programs.

**Dairy Basics**

Four hour in-plant training in Milk Chemistry, Dairy Science, and Dairy Sanitation.

**Cheese Grading**

**1 Day Course** – This course will focus specifically on cheddar and mozzarella grading in accordance with USDA standards. USDA experts will discuss the USDA standards for grade, cheese defects as well as hands-on exercises with defective cheeses. This is an opportunity to compare and calibrate your skills with actual federal graders. The course is designed for people who currently grade or would like to learn how to grade cheese.

**Food Safety Principles**

Available in English and Spanish

**Online (Self-Paced)** – This introductory course is tailored to processing personnel and is designed to help participants understand the basic principles of food safety in a processing plant. The benefit of using this course is to quickly train your frontline employees in the importance of Food Safety.

The half-day (four hour) course consists of self-paced online modules with knowledge checks at the end of each module that will cover basic food safety including Good Manufacturing Practices, Basic Microbiology and Foodborne Illness, and Food Safety Programs. The course is ideally suited for:

- Production line personnel
- Sanitation personnel
- Maintenance Personnel

This course provides baseline knowledge and is not intended to be a comprehensive training. We are offering this course based on a subscription price. Companies are granted access to the course through Canvas for the designated time purchased. Companies have unlimited access to the content and can train unlimited employees through the subscription period. Contact Louise Felker (lmf226@cornell.edu) for subscription pricing information.
## Course Calendar

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date Offered</th>
<th>Location</th>
<th>Category</th>
<th>Training Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORE COURSES</strong></td>
<td></td>
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<tr>
<td>Basic Dairy Science and Sanitation</td>
<td>Rolling Admission, On-Demand</td>
<td>Online</td>
<td>Certificate Program</td>
<td></td>
</tr>
<tr>
<td>HTST Pasteurizer Operator Workshop</td>
<td>April 12 – 14</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program, Food Processing</td>
<td></td>
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<tr>
<td>HTST Pasteurizer Operator Workshop</td>
<td>October 11 – 13</td>
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</tr>
<tr>
<td>Vat Pasteurizer</td>
<td>Rolling Admission, On-Demand</td>
<td>Online</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td><strong>ADVANCED CORE COURSES</strong></td>
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<tr>
<td>Environmental Monitoring Programs</td>
<td>October 7 – November 3</td>
<td>Online</td>
<td>Certificate Program, Food Safety</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>November 3</td>
<td>Cornell University (Ithaca, NY)</td>
<td>Certificate Program, Food Safety</td>
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<tr>
<td>SOP and Technical Writing</td>
<td>October 3 – November 15</td>
<td>Online</td>
<td>Food Processing</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>November 15</td>
<td>Live via Teleconference (Zoom)</td>
<td>Food Processing</td>
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<tr>
<td>Leadership Skills for Success</td>
<td>September 14 – 16</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program</td>
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<tr>
<td><strong>FOOD SAFETY COURSES</strong></td>
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<tr>
<td>Accredited HACCP Training Course</td>
<td>Rolling Admission, On-Demand</td>
<td>Online</td>
<td>Certificate Program, Food Processing, Food Safety, Regulatory</td>
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<tr>
<td>Applied Food Safety Plans – An Advanced Refresher Course</td>
<td>September 7 &amp; 8</td>
<td>Cornell University (Ithaca, NY)</td>
<td>Food Safety</td>
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</tbody>
</table>
## Course Calendar

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date Offered</th>
<th>Location</th>
<th>Category</th>
<th>Training Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPECIALIZED COURSES</strong></td>
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<tr>
<td><strong>SCIENCE OF CHEESE</strong></td>
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<tr>
<td>The Science of Cheese (Basic Level)</td>
<td>September 23 – October 19</td>
<td>Online</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>October 19</td>
<td>Cornell University (Ithaca, NY)</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td><strong>SCIENCE OF YOGURT</strong></td>
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<tr>
<td>The Science of Yogurt and Cultured Dairy Products (Basic Level)</td>
<td>April 12 – May 3</td>
<td>Online</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>May 3</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td><strong>FLUID MILK PROCESSING</strong></td>
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<tr>
<td>Fluid Milk Processing/Testing for Quality and Safety Workshop</td>
<td>February 1 – March 2</td>
<td>Online</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>March 3</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td><strong>ICE CREAM AND FROZEN DESSERTS</strong></td>
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<tr>
<td>Introduction to Artisan Ice Cream and Frozen Desserts</td>
<td>March 9 – April 6</td>
<td>Online</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>April 6</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program, Food Processing</td>
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<tr>
<td><strong>SPECIALTY TRAINING PROGRAMS</strong></td>
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<tr>
<td>Cheese Grading</td>
<td>October 20</td>
<td>Cornell University (Ithaca, NY)</td>
<td>Food Processing</td>
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<tr>
<td>Food Safety Principles</td>
<td>Rolling Admission, On-Demand</td>
<td>Online</td>
<td>Food Safety</td>
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**Trainings Delivery Options:**
- **ON-CAMPUS**
- **ONLINE**
- **ZOOM**
- **HYBRID**
## Course Calendar

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<tbody>
<tr>
<td><strong>REGULATORY COURSES</strong></td>
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<tr>
<td>FSMA Preventive Controls Qualified Individual Training</td>
<td>August 9 – 11</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program, Food Safety, Regulatory</td>
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<tr>
<td>FSMA Preventive Controls Qualified Individual Training</td>
<td>November 8 – 10</td>
<td>Live via Teleconference (Zoom)</td>
<td>Certificate Program, Food Safety, Regulatory</td>
<td></td>
</tr>
<tr>
<td>Intentional Adulteration Vulnerability Assessments (IAVA)</td>
<td>June 7</td>
<td>Cornell University (Ithaca, NY)</td>
<td>Regulatory, Food Safety, Food Defense</td>
<td></td>
</tr>
<tr>
<td>Dairy Laboratory Regional Workshop</td>
<td>April 20</td>
<td>Live via Teleconference (Zoom)</td>
<td>Regulatory, Food Safety</td>
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<tr>
<td>Certified Milk Inspectors Training School</td>
<td>June 27 – July 27</td>
<td>Online</td>
<td>Regulatory, Food Safety</td>
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<tr>
<td>(Both Sessions Required)</td>
<td>July 26 &amp; 27</td>
<td>Cornell University (Ithaca, NY)</td>
<td>Regulatory, Food Safety</td>
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</table>

**On-Campus Trainings** take place at the Cornell University Stocking Hall Conference Center, unless otherwise noted. All courses listed are open to the public.*

**Online (Self-Paced) Trainings** are completed online using eCornell or the Canvas Learning Management System.

**Zoom Courses** are hosted via live teleconference (Zoom).

**Hybrid Courses** include online as well as hands-on sessions.*

*Course delivery subject to change due to public health guidance from Cornell University.
Extension Services

Industry Workshops (On-Site or Virtual)
Contact Louise Felker (lmf226@cornell.edu) for price quote and scheduling.

• Dairy Science & Sanitation (2.5 days)
• Preventive Controls Qualified Individual (2–2.5 days)
• HACCP Training (2 days)
• GMPs Training (2 days)
• Internal Audit Training (1 day)
• Sensory Training (1 day)
• Food Defense Training (2 days)
• Foreign Supplier Verification Programs Training (1.5 days)

Consulting Services
Contact Louise Felker (lmf226@cornell.edu) for price quote and scheduling.

Dairy Process Authority
Dairy Process review and validation available for dairy products. Fees charged for initial review, research, and on-site review. Submission options include the following:

• Product and Process Review/ Scheduled Process
• Reduced Oxygen Packaging (ROP)/ Vacuum Packing
• Lab Analysis
• Deviation Evaluation

Cornell’s Process Authority works with food manufacturers to validate products for safety and stability. The Scheduled Process is a document that can be submitted to regulatory agencies, such as state or federal inspectors, to support safe food processing practices and ensure minimal risk of microbial pathogenic growth.

Pre-Audit Consulting
Preparing for a third-party audit and want to make sure that you’re ready? Our team can visit your facility and conduct pre-audit consulting.

Document Review
Food safety plan and document review available, on-site and remotely.

Validation Sampling
Validation sampling of environmental monitoring programs available.
The Cornell University Food Processing and Development Laboratory (FPDL) is a highly flexible pilot plant that allows industry access to equipment and expertise to facilitate the development of new dairy products and/or to produce prototype products on a small-scale. The ‘plug and play’ design means that the FPDL can emulate your plant processing parameters for accurate product development projects while the company can get product trials completed without stopping actual production. Because the facility is a licensed dairy plant permitted by NY State, our products can be used for sensory or consumer acceptance studies.

The 6,000 sq. ft. main processing area is directly adjacent to Cornell’s fully licensed dairy plant. The pilot plant houses a small-scale HTST system capable of continuous pasteurization of batches as small as 100 gallons with up to a 12 minute extended hold. The facility has multiple cheese vats from 50–500 gallon capacities (with associated equipment such as cheddar milling equipment, cheese presses, a variety of moulds, etc.). For yogurt and cultured products production, the facility has a Greek yogurt separator, fermentation vats from 50-500 gallons, several filling capabilities as well as fermentation rooms to 110°F. The FPDL has continuous and batch ice cream freezing capability as well as a walk-in hardening freezer (~40°F). The pilot plant also has access to very high-quality milk from Cornell’s Vet School farm located less than a mile away. This combination allows for scaling up of production in order to provide a variety of products for consumer demonstrations, food shows and exhibitions.

The facility has experienced full-time staff professionals who are able to assist in all aspects of food product development and processing. Companies/individuals can visit the facilities and work collaboratively or the staff of the FPDL can process products to your specifications and ship it to you overnight. Customized small product development runs can be conducted with our established access to suppliers of ingredients, cultures and raw materials or if a company prefers, with their supplied ingredients.

For more information visit the FPDL website or contact Robert Ralyea (rdr10@cornell.edu) with questions.
For More Information

TO CONTACT US

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Ithaca, NY 14853
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607.255.7098

cals.cornell.edu/dairy-extension

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Photography: Sasha Israel, CALS (cover) | Allison Usavage (cover, p. 1, 3, 12 & 21) | Jason Koski, UREL (cover, p. 1, 3, 12 & 21) | Robyn Wishna (cover & p. 12) | Anahita Verahrami, CALS (inside cover & p. 3) | Riccardo Mojana (inside cover) | Olesia Shadrina (inside cover) | Justin James Muir (inside cover) | John Munson, MRN (p. 1) | Lindsay France, UREL (p. 3 & 21) | Alex Solla, CALS (back cover)