



Dairy Foods Extension

2019 Course Catalogue

*Providing cutting-edge research and support to
New York State's dairy industry*

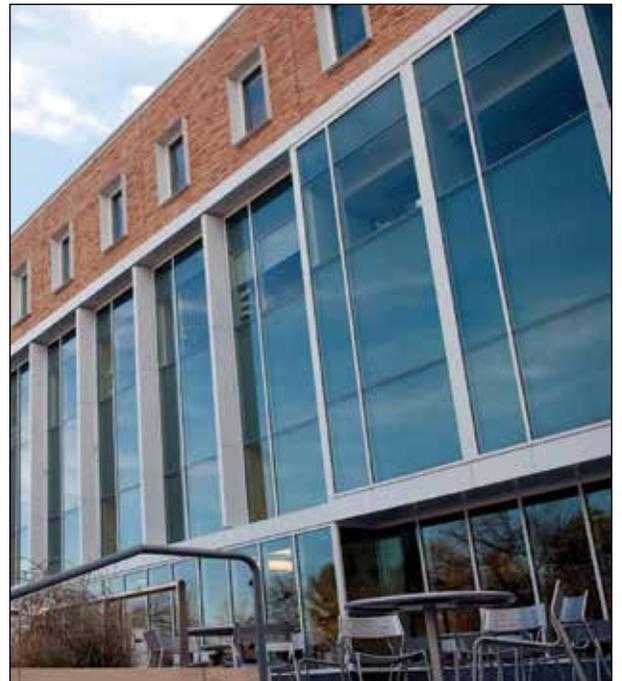
Cornell **CALS**
College of Agriculture and Life Sciences



The Department of Food Science at Cornell University is one of the premier programs worldwide for collaborative research and extension programming. 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 businesses in New York State and beyond with the implementation of new technologies and production strategies which will improve the quality, safety, nutrition, and marketability of their product. Extension personnel, located at the Cornell University Campus in Ithaca, NY and at the NY State Agricultural Experiment Station (NYSAES) 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.



Visit us at: <http://foodscience.cals.cornell.edu/>

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Training Delivery Types

-  **On-Campus Training** takes place at the Cornell University Stocking Hall Conference Center, unless otherwise noted. All courses listed are open to the public.
-  **On-Site Plant Training** these workshops can be offered off campus and at industry sites; courses at company sites can be limited to attendees from the hosting company. On-site courses are charged a flat fee (see page 15 for details).
-  **Online, Self-Paced Training** includes background material to review prior to the start of the workshops and self-assessment quizzes.
-  **Partnership Courses** are conducted in partnership with other organizations, including the New York State Department of Agriculture and Markets, Oregon State, Harvest NY, Penn State and Vermont Department of Health.
-  **Multi-modal Courses** are online and hands-on.



The Cornell Dairy Foods Extension Certificate program offers comprehensive training for dairy processors of all sizes within New York State and beyond. In New York State alone, dairy processing represents 18% of manufacturing jobs within 350 regulated plants. Together with dairy farmers that represents nearly 20,000 employees—and employees need to be trained.

Our Dairy Extension program provides training and certificates in four areas including:

- The Science of Yogurt and Fermented Dairy Products (Basic and Advanced)
- Fluid Milk Processing for Quality and Safety
- Membrane, Evaporation and Drying Technology
- The Science of Cheese Making (Basic and Advanced)

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.

Processing courses such as The Science of Cheese, The Science of Yogurt, and Fluid Milk Processing combine science with hands-on in-plant experiences utilizing equipment found in actual plant environments. Each participant receives a reference manual on the subject matter for later use.

To increase the amount of time dedicated to these hands-on experiences, several of the courses taught by the Cornell Dairy Foods Extension Program are taught in a hybridized style which include readings and lectures are on-line and self-paced prior to an on-campus hands-on session. This innovative system allows employees to do courses work at a time that is convenient to their schedule and reduces the number of hours away from the plant.

Dairy Science and Sanitation, Food Safety Plans/HACCP, and Preventive Controls Qualified Individual courses are also available as site-specific in-plant trainings and our team will occasionally offer or host stand-alone classes or courses at Cornell that are not part of our certificate program and that cannot be used towards the certificates offered.

While our mission is to provide information and training programs to the dairy production and processing sectors, consumer questions and concerns are addressed as well. The Dairy Foods Extension team is available to assist Cornell Cooperative Extension (CCE) in their training and outreach needs at the county level.



Meet the Team



Sam Alcaine

Assistant Professor of Dairy Fermentations

E-mail: sda23@cornell.edu

Areas of Expertise: Dairy cultures and fermentation, Antibiotic Resistance in

Salmonella; Good Manufacturing Practices, FSMA Preventive Controls for Human Food.



Louise M. Felker

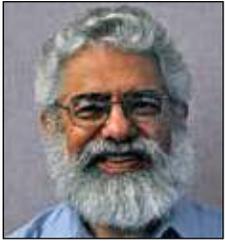
Extension Support Specialist

Phone: (607) 255-7098

E-mail: lmf226@cornell.edu

Areas of Expertise: Workshop/short course organization and planning, food safety systems,

Good Manufacturing Practices, social media/web development.



Dave Barbano

Professor of Food Science

E-mail: dmb37@cornell.edu

Areas of Expertise: Dairy processing technologies, cheese chemistry and functionality, chemical and infrared analysis

of milk and dairy products, farm management technologies and milk quality, milk synthesis metabolism.



Nicole Martin

Associate Director

Milk Quality Improvement Program

E-mail: nhw6@cornell.edu

Areas of Expertise: The transmission, control

and detection of dairy associated spoilage microorganisms and pathogens.



Carmela Beliciu

Extension Aide

Phone: (607) 255-2912

E-mail: clb352@cornell.edu

Areas of Expertise: Working with business owners to facilitate their use of FPDL

facilities, small-scale dairy production, specialty cheese instruction and manufacture, Good Manufacturing Practices.



Robert D. Ralyea

Sr. Extension Associate

Phone: (607) 255-7643

E-mail: rdr10@cornell.edu

Areas of Expertise: Dairy systems environmental microbiology, product

processing and regulations; small-scale dairy production, general food security & risk assessment; FSMA Preventive Controls for Human Food.



Kimberly Bukowski

Extension Professional

Phone: (607) 254-3313

E-mail: krb14@cornell.edu

Appointment: Extension

Areas of Expertise: Dairy plant auditing; food safety systems;

GFSI-Safe Quality Foods; Good Manufacturing Practices; dairy manufacturing; ice cream; FSMA Preventive Controls for Human Food.



Alex Solla

Extension Support Specialist

Phone: (607) 255-3459

E-mail: ahs24@cornell.edu

Areas of Expertise: Course coordination and data management.



Monika Crosby

Extension Aide

Phone: (607) 255-6806

E-mail: mlc258@cornell.edu

Areas of Expertise: Course coordination and data management.



Martin Wiedmann

Gellert Family Professor in

Food Safety,

Institute for Food Safety

Phone: (607) 254-2838

E-mail: mw16@cornell.edu

Areas of Expertise: *Listeria*

monocytogenes, pre-harvest food safety, molecular pathogenesis, microbial ecology and epidemiology.

**Barb Williams**

*Regional Dairy Processing and Marketing Specialist,
Cornell Cooperative Extension (CCE)*

Phone: (315) 813-1250

E-mail: bw495@cornell.edu

Areas of Expertise: Working with regulatory agencies, workforce development agencies and suppliers to help members of the dairy foods manufacturing community reach their goals.

**Anika Zuber**

*Regional Dairy Processing and Marketing Specialist,
Cornell Cooperative Extension (CCE), Harvest, NY,
Western New York*

Phone: (585) 813-3539

E-mail: adz8@cornell.edu

Areas of Expertise: Working with regulatory agencies, workforce development agencies and suppliers to help members of the dairy foods manufacturing community reach their goals.

Registration and Confirmation

Please visit the Cornell Dairy Foods Extension website to register for courses: dairyextension.foodscience.cornell.edu.

Please contact Louise Felker at: 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.

The certificate of achievement and the graded post-test will be mailed to each attendee upon completion of the course.



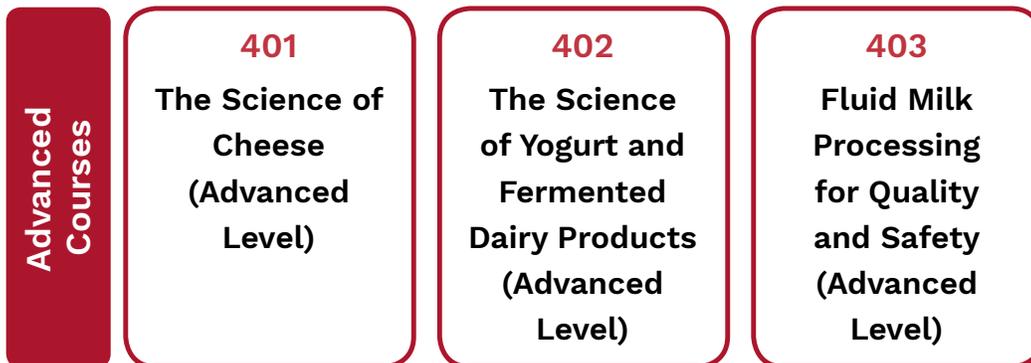
The Cornell University Dairy Foods Extension team, with the Department of Food Science in the College of Agriculture and Life Sciences, is a diverse group of faculty and staff with extensive knowledge that spans nearly all aspects of dairy science and technology.

Steps to Earning a Certificate

Pasteurization Courses:



Successful completion of Core Courses and appropriate Specialized Course required for Certification. Certificate valid for 3 years, requires 8 CEUs for renewal.



Certification as an Advanced Cheese Maker and/or Advanced Yogurt Maker requires related specialized certification, completion of the Course, completion of an oral exam, and more than 3 years experience in respective field (supported by 2 references). Certificate is valid for 3 years, requires 16 CEUs for renewal.

Course Information

Core Courses

These courses are required to complete any chosen track for the specialized Certificate Programs.

Dairy Science and Sanitation

(On-line lectures/1.5 days hands-on, 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 on-line lecture sessions that will 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. The course also provides hands-on sessions where both CIP and COP principles will be applied.

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
-

UHT/High Temperature Short Time (HTST) Pasteurizer Operator Workshop

(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 & 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 HHST/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

Specialized Courses

The Science of Cheese (Basic Level) and Vat Pasteurization

(On-line lectures/2 days hands-on, 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 on-line 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 2 days of hands-on pasteurization and 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 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 Fermented Dairy Products (Basic Level)

(On-line lectures/1.5 days hands-on, 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 course begins with an on-line lecture component and is followed by hands-on sessions on-campus. 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 Fermented 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

Fluid Milk Processing/Testing for Quality and Safety Workshop

(2 day 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 & processing (e.g., Dairy Science & Sanitation Course), critical concepts will be reviewed and expanded on for those who do not. This course can be taken as a stand-alone.

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

Food Safety Courses

Accredited HACCP Training Course

(2 day course)

This workshop 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

(1 day course)

This workshop is designed to give participants an understanding of the SQF Code; how to implement these requirements in a food processing plant, as well as food ingredient and food packaging plants 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.

SQF Quality Management Systems for Food Manufacturing

(1 day course)

This one-day course is ideal for those already familiar with quality management principles, such as SQF quality practitioners or SQF Quality auditors, but who need to understand how to apply quality tools in the implementation of the SQF Quality Code. The course will address the impact of quality parameters on the site's product and operation, assist sites in understanding how the SQF Quality Code aligns with food safety and allow learners to apply quality tools and techniques to implementation of the SQF Quality Code.

Candidates must have successfully completed a HACCP training course meeting the SQFI definition, and either Implementing SQF Systems training (minimum: edition 7), or Auditing SQF Systems/Lead SQF Auditor training (minimum: edition 7).

**Course description provided by Safe Quality Food Institute.*

Artisan Dairy Food Safety Plan Coaching

(2 day 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.

Regulatory

FSMA Preventive Controls Qualified Individual Training

(2.5 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*

Preventive Controls for Animal Food

(2.5 day course, 2.5 CEUs)

The Current Good Manufacturing Practice, Hazard Analysis, and Risk-based Preventive Controls for Animal Food regulation is intended to ensure safe manufacturing/processing, packing and holding of food products for animal 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, or is otherwise qualified through job experience to develop and apply a food safety system. 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 and co-taught with Cooperative Feed Dealers, who have been instructed in how to teach the FDA-recognized standardized curriculum.

**Course description provided by the Food Safety Preventive Controls Alliance.*

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.

Specialty Cheese Making

This course is an advanced level hands-on course. Participants will apply scientific principles to craft four varieties of cheese from pasteurization through curing. In addition to making cheese, the course will also focus on milk quality, affinage, and sensory evaluation of cheese. It is recommended that participants have experience in cheese making. Enrollment is limited to the first 20 participants. Offered periodically.

Pathogen Environmental Monitoring

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.

Enrollment is limited to the first 40 participants. Offered periodically.

Introduction to Artisan Ice Cream and Frozen Desserts

This course is designed for the artisan ice cream manufacturer and will focus on types of frozen desserts, composition and physical properties, equipment, ingredients, sensory, as well as frozen dessert manufacture.

Learning Outcomes

- The composition of ice cream, and the 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

Accurate Labeling to Reduce Recall Risk

This workshop is designed to provide participants with the necessary knowledge and skills to reduce the risk of product recalls and negative implications due to mislabeling.

Taught in partnership with Merieux NutriSciences.

Introduction to Statistical Process Control

Designed as an introductory course to discuss statistical methods and where they may be employed in a processing operation. The SQF Quality Code requires certified companies to be competent in SPC to reduce process variation and drive root cause analysis.

Food Defense

This workshop is designed to assist companies with the establishment of a food defense plan that will help them prevent, protect against, mitigate, and respond to an intentional adulteration incident.

Improving Audit Outcomes

This workshop is designed to give participants the tools on how to prepare and run their best GFSI audit. The training includes tips on how to set the stage for the audit, including prep time, record review and facility readiness. The workshop also includes investigation and follow-up on root cause analysis and corrective actions.

Fees

Course	NYS Early Fee	Out of State Early Fee	NYS Late Fee	Out of State Late Fee
Dairy Science & Sanitation	\$650	\$725	\$725	\$880
HTST	\$725	\$880	\$880	\$1,100
VAT Pasteurization	\$150	\$180	\$180	\$225
PEM	\$650	\$725	\$725	\$880

Fees: Specialized Courses—Basic

Course	NYS Early Fee	Out of State Early Fee	NYS Late Fee	Out of State Late Fee
Basic Cheese Making	\$650	\$725	\$725	\$880
Basic Yogurt/Fermented Products	\$650	\$725	\$725	\$880
Fluid Milk Processing	\$650	\$725	\$725	\$880
Specialty Cheese Making	\$725	\$880	\$880	\$1,100
Membrane Evaporation	\$800	\$960	\$960	\$1,150

Fees: Specialized Courses—Advanced

Course	NYS Early Fee	Out of State Early Fee	NYS Late Fee	Out of State Late Fee
Advanced Cheese Making	\$800	\$960	\$960	\$1,150
Advanced Yogurt/Fermented Products	\$800	\$960	\$960	\$1,150
Qualified Individual	\$725	\$880	\$880	\$1,100
HACCP	\$750	\$880	\$880	\$1,100
SQF	\$750	\$750	\$750	\$750
SQF Quality	\$750	\$750	\$750	\$750
HACCP/SQF	\$1,400	\$1,400	\$1,400	\$1,400
SQF/SQF Quality	\$1,400	\$1,400	\$1,400	\$1,400
HACCP/SQF/SQF Quality	\$2,000	\$2,000	\$2,000	\$2,000
Intro to Ice Cream and Frozen Desserts	\$650	\$725	\$725	\$880
Food Defense	\$650	\$725	\$725	\$880
Accurate Labeling			\$750	
Improving Your Audit Outcomes			\$400	
Statistical Process Control			\$400	
Certified Milk Inspectors School			\$200	

Calendar

 On-Campus
  On-Site
  Online
  Partnership
  Multi-modal

Topic	Date Offered	Location	Category	Training Delivery
Dairy Science and Sanitation				
Dairy Science and Sanitation	2/12–13/19	Cornell University	Core Course, Certificate Program	 
Dairy Science and Sanitation	8/20–21/19	Cornell University	Core Course, Certificate Program	 
Fluid Milk Processing				
Fluid Milk Processing for Quality and Safety	5/8–9/19	Cornell University	Core Course, Certificate Program	
Food Safety and Food Quality				
Accurate Labeling	5/21–22/19	Cornell University	Food Safety	 
Artisan Dairy Food Safety Plan Coaching	2/26–27/19	Plattsburgh, NY	Food Safety	 
Food Defense	2/19–20/19	Cornell University	Food Safety	
HACCP	4/9–10/19	Cornell University	Core Course, Certificate Program, Regulatory, Food Safety	
HACCP	8/12–13/19	Cornell University	Core Course, Certificate Program, Regulatory, Food Safety	 
Implementing SQF Systems	8/14–15/19	Cornell University	Food Safety	 
Improving Your Audit Outcomes	1/23/19	Cornell University	Food Safety	
SQF Quality Management Systems	8/16/19	Cornell University	Food Quality	 

Topic	Date Offered	Location	Category	Training Delivery
Food Safety and Food Quality				
Statistical Process Control	6/20/19	Cornell University	Food Quality	
High Temperature Short Time/Ultra High Temperature Pasteurizer Workshop				
HTST	4/23–25/19	Cornell University	Core Course, Certificate Program, Food Processing	
HTST	7/16–18/19	Cornell University	Core Course, Certificate Program, Food Processing	
HTST	10/8–10/19	Cornell University	Core Course, Certificate Program, Food Processing	
Introduction to Artisanal Ice Cream and Frozen Desserts				
Introduction to Artisanal Ice Cream and Frozen Desserts	3/12–13/19	Cornell University	Food Processing	
NYS Department of Agriculture and Markets Trainings				
Certified Milk Inspector School	7/8–11/19	Cornell University	Regulatory, Food Safety	
Preventive Controls for Animal Food				
Preventive Controls for Animal Food	7/10–11/19	Cornell University	Regulatory, Food Safety	
Preventive Controls for Human Food	1/7–9/19	Watertown, NY	Regulatory, Food Safety	
Preventive Controls for Human Food	4/2–4/19	East Aurora, NY	Regulatory, Food Safety	
Preventive Controls for Human Food	5/14–16/19	Brooklyn, NY	Regulatory, Food Safety	
Preventive Controls for Human Food	9/10–12/18	Cornell University	Regulatory, Food Safety	

Topic	Date Offered	Location	Category	Training Delivery
Science of Cheese				
The Science of Cheese (Basic Level)	10/22–23/19	Cornell University	Certificate Program, Food Processing	 
Science of Yogurt				
The Science of Yogurt (Advanced Level)	6/18–19/19	Cornell University	Certificate Program, Food Processing	
Vat Pasteurizer School				
Vat Pasteurizer School	1/29/19	Duryea Farm and Dairy, Monsey, NY	Core Course, Certificate Program, Food Processing	 
Vat Pasteurizer School	10/22/19	Cornell University	Core Course, Certificate Program, Food Processing	 

Rates—Cornell Dairy Extension Services

Industry On-Site Workshops

Workshop	New York State	Outside NY State
Dairy Science & Sanitation (2.5 days)	\$12,500 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$15,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
Preventive Controls Qualified Individual (2–2.5 days)	\$15,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$18,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
HACCP Training (2 days)	\$10,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$12,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
GMPs Training (1 day)	\$5,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$6,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
Internal Audit Training (1 day)	\$5,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$6,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
Sensory Training (1 day)	\$5,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$6,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees

Workshop	New York State	Outside NY State
Food Defense Training (2 day)	\$10,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$12,500 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
Sanitary Transport Training (1 day)	\$5,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$7,500 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees
Foreign Supplier Verification Programs Training (1.5 days)	\$7,500 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees	\$10,000 plus travel/ accommodation for 2 instructors as needed—up to 30 attendees



The Food Processing and Development Laboratory (FPDL)—*Pilot Plant*

Experienced full time staff professionals are able to assist in all aspects of food product development and processing.

You can visit our facilities and work collaboratively with our personnel, or the staff of the FPDL can process your product to your specifications and ship it to you overnight. Customized pilot plant product runs can be conducted with our established access to ingredients and raw materials.

Our 6,000 square foot main processing area is located adjacent to our fully licensed operating dairy plant. This combination allows for scaling up of production in order to provide a variety of products for customer demonstrations, food shows, and exhibitions.

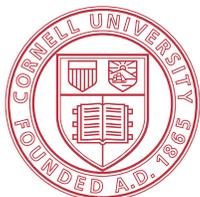
Cornell University's research and extension staff provides our clients a resource to find answers to tough research and development problems.

To learn more about the FPDL, contact:

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