Membrane Filtration, Concentration, and Separation Tech Syllabus

Instructors:
Tristan Zuber, Dairy Processing Extension Associate; email: tjz2@cornell.edu; phone (607) 227-7398
Carmen Moraru, Associate Professor; email: cim24@cornell.edu; phone (607) 255-8121
Additional instructors and contributors to this course include guest instructors from industry.

Course Contact:
Louise Felker; e-mail: lmf226@cornell.edu ; phone: (607) 255-7098

Overview:
This course is a required as part of the Dairy Membrane Filtration, Concentration, and Separation Tech Option, but can also be used as a stand-alone training program. This is a 3-day course that is offered at least once a year on the Cornell campus.

Learning Outcomes:
This course will provide attendees with information in key areas that are listed below, along with key learning outcomes in each area:

Filtration, Evaporation & Drying Technology Processes
• Identify different applications for filtration, evaporation & drying technologies within the dairy industry
• Define terminology surrounding these different processes
• Understand design, construction and controls for filtration, evaporation & drying technologies
• Describe different types of membranes, filtration systems, drying and evaporation systems
• Identify issues within these different systems and describe ways to troubleshoot
• Explain potential and future uses within the dairy industry for these technologies

Cleaning Technologies
• Identify performance parameters for effective cleaning systems
• Describe proper procedures for cleaning filtration, membrane & drying systems

Quality & Safety of Value Added Dairy Ingredients
• Describe effects that processing may have on finished value-added dairy products
• Identify quality issues that may arise with ingredients that will go through these different processes
• Know raw material defects that may affect finished product defects
• Describe different analytical methods for compositional analysis

Evaluation:
Attendees that would like a certificate for successful completion of this course, will need to pass a test (≥ 70%) that is administered at the end of the course; this test is an open book test, but is timed such that there is only limited time to search for information. This course also includes a pre-course test to determine the knowledge of all attendees before the start of the course. Test questions will include multiple choice, short answer, and true/false questions.