

# DAIRY TECHNOLOGY MANAGEMENT

The Master of Dairy Technology Management (MDTM) graduate program offers opportunities for studies in Dairy Technology Management leading to the master's degree. The aim is to prepare highly qualified personnel who will lead the Ontario, Canadian, and international dairy industries into the future. The MDTM brings together global expertise for instruction and training on dairy science, dairy plant operations, dairy products, agri-food economics, food safety and quality management, operations management, and supply and value chain management.

## Administrative Staff

### Chair

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## Graduate Faculty

*This list may include Regular Graduate Faculty, Associated Graduate Faculty and/or Graduate Faculty from other universities.*

### Andreas Boecker

M.Sc., PhD Kiel - Associate Professor and Chair  
Graduate Faculty

### Lawrence Goodridge

B.Sc., M.Sc., PhD Guelph - Professor  
Graduate Faculty

### Getu Hailu

B.Sc., M.Sc. Alemaya, PhD Alberta - Professor  
Graduate Faculty

### Spencer Henson

B.Sc., PhD Reading - Professor  
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### Gisele LaPointe

B.Sc., PEI, M.Sc., PhD Quebec - Professor  
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### Alice Marciniak

B.Sc., M.Sc. Lille (France), PhD Laval - Assistant Professor  
Graduate Faculty

### Michael von Massow

BA Manitoba, B.Sc., M.Sc. Guelph, PhD McMaster - Associate Professor  
Graduate Faculty

## MDTM Program

### Admission Requirements

To be considered, applicants must have completed a four-year honours undergraduate degree (or its equivalent) from a recognized university or

college with an average standing of at least a 'B-' (70%) average in the last four semesters of study.

Applicants will be expected to have completed undergraduate courses that prepare them for participation in the core graduate courses of the program. Recommended preparation courses are FOOD\*2010 Principles of Food Science or equivalent, and MATH\*1030 Business Mathematics or equivalent.

The Graduate Program Committee examines each application before the student is proposed to the Office of Graduate & Postdoctoral Studies for admission into the program.

## Learning Outcomes

Upon successful completion of the Master of Dairy Technology Management program, graduates will be able to:

1. **Dairy Science and Technology**
  - a. Demonstrate a working knowledge of dairy science that integrates the chemistry, physics, and microbiology of milk and milk products.
  - b. Explain the engineering principles and unit operations used to manufacture dairy products.
  - c. Optimize processing of dairy products including formulation, composition control, and yield efficiency.
2. **Management of Operations, Food Safety Systems, and Quality Assurance**
  - a. Lead transformation of inputs into outputs; oversee designing, scheduling, operating, and controlling the production system.
  - b. Describe principles of food risk analysis and oversee development and performance of Preventive Control Programs.
  - c. Apply principles of statistical and qualitative process and quality control.
3. **Marketing and Business Management**
  - a. Analyze dairy markets in the context of socio-cultural, economic, regulatory and technological trends.
  - b. Perform economic/business evaluations of customer, operational and workforce/labour requirements in the context of dairy processing.
  - c. Lead innovation and continuous improvement through technology management in dairy processing.

## Program Requirements

The Master of Dairy Technology Management is an interdisciplinary program that blends three major overarching competencies needed to advance industry professionals, namely:

- Dairy Science and Technology
- Management of Operations, Food Safety Systems and Quality Assurance
- Marketing and Business Management

To satisfy the program requirements, students will successfully complete six required core courses, and a project course for a total of 3.50 credits. The seven required courses are:

Code	Title	Credits
FSQA*6600	Principles of Food Safety and Quality Assurance	0.50

FARE*6110	International Food Industry and Policy Analysis	0.50
FARE*6120	Assessment of Food and Agricultural Technologies	0.50
FARE*6130	Operations Management in the Agri-Food Sector	0.50
FOOD*6000	Dairy Chemistry and Microbiology	0.50
FOOD*6010	Dairy Products and Processes	0.50
FOOD*6020	Dairy Technology Management Project	0.50

## Food Safety and Quality Assurance

Code	Title	Credits
FSQA*6600	Principles of Food Safety and Quality Assurance	0.50

## Courses

### FOOD\*6000 Dairy Chemistry and Microbiology Fall Only [0.50]

This course introduces the science behind milk production and composition and covers topics including: the chemistry and physics of milk fats, caseins, whey proteins, lactose, minerals, and minor components; chemical analysis; nutritional and health aspects of dairy products; milk microbiology including endogenous lactic bacteria, spoilage and pathogenic microorganisms; and microbial analysis.

**Offering(s):** Offered through Distance Education format only.

**Department(s):** Department of Food Science

**Location(s):** Guelph

### FOOD\*6010 Dairy Products and Processes Winter Only [0.50]

The course begins with the engineering principles and computations of unit operations involved in dairy processing, and then explores formulation and processing of different dairy products. Video tours, simulations, processing, safety and quality control data and analysis are used to provide practical training.

**Prerequisite(s):** FOOD\*6000

**Department(s):** Department of Food Science

**Location(s):** Guelph

### FOOD\*6020 Dairy Technology Management Project Summer Only [0.50]

This capstone course is intended to give participants the opportunity to apply what they have learned in a realistic industrial scenario. Students prepare a technical report in the form of a case study that identifies and characterizes a food industry problem and describes and assesses ways to solve it. Proposals are based on literature reviews, concepts learned during the program, and discussions with academic and industry advisors.

**Prerequisite(s):** FARE\*6120, FARE\*6130, FOOD\*6000, FOOD\*6010, FSQA\*6600

**Department(s):** Department of Food Science

**Location(s):** Guelph

## Other Required Courses

### Food, Agricultural and Resource Economics

Code	Title	Credits
FARE*6110	International Food Industry and Policy Analysis	0.50
FARE*6120	Assessment of Food and Agricultural Technologies	0.50
FARE*6130	Operations Management in the Agri-Food Sector	0.50