FOOD SAFETY AND QUALITY ASSURANCE

The interdepartmental MSc program is the focal point for graduate teaching and research in food safety and quality assurance. The FSQA program is intended to prepare food scientists, food engineers, microbiologists and others with appropriate scientific backgrounds for participation in food safety monitoring and management in the food industry and in government food regulatory roles. Students wishing to undertake graduate studies at the MSc level with an emphasis on food safety and quality assurance will be working on a project with an approved advisor.

Administrative Staff

Chair
Lisa Duizer (112 Food Science, Ext. 53410)
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Graduate Faculty

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

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B.Sc. Hebrew (Jerusalem), MS, PhD UW Madison - Professor
Graduate Faculty

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B.Tech. Argentina, M.Sc., PhD MIT - Associate Professor
Graduate Faculty

Lisa Duizer
B.Sc., M.Sc. Guelph, PhD Massey - Associate Professor
Graduate Faculty

H. Douglas Goff
B.Sc. (Agr) Guelph, MS, PhD Cornell - Professor
Graduate Faculty

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Graduate Faculty

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

Iris Joyce
M.Sc. Leuven, PhD Leuven/Ghent (Belgium) - Associate Professor
Graduate Faculty

Gisele LaPointe
B.Sc.,PEI, M.Sc., PhD Quebec - Professor
Graduate Faculty

Loong-Tak Lim
B.Sc. Acadia, PhD Guelph - Professor
Graduate Faculty

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

Massimo F. Marcone
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Graduate Faculty

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Graduate Faculty

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Graduate Faculty

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Graduate Faculty

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Graduate Faculty

Michael Rogers
B.Sc., M.Sc., PhD Guelph - Associate Professor
Graduate Faculty

Paul Spagnuolo
B.Sc., M.Sc. Guelph, PhD Waterloo - Associate Professor
Graduate Faculty

Keith Warriner
B.Sc. Nottingham, PhD Aberystwyth - Professor
Graduate Faculty

MSc Program

Admission Requirements

The program is most suitable for those with an undergraduate degree in food science or microbiology and for those currently employed in the food safety and quality assurance fields in government regulatory work or in the food industry who desire upgrading of skills and knowledge. Applicants for admission to this program must meet the admission requirement of a baccalaureate in an honours program (or the equivalent) in a relevant field of study from a recognized university or college with an average standing of at least a 'B' average.

Prospective students indicate whether they wish to complete the program in “Hybrid Delivery” (on-campus and online learning) or “Distance Delivery” (fully online) mode at the time of application.

“Distance Delivery” applicants are required to submit an additional (third) letter of support from an individual (such as a supervisor and/or manager) in an organization indicating a willingness to oversee the applicant’s workplace project, should they be accepted to the program.

Applicants will be expected to have completed undergraduate courses that prepare them for participation in the core graduate courses and electives of the program. Undergraduate upgrading prior to applying...
may be necessary to ensure sufficient background in topics such as microbiology, toxicology, statistics, and analytical methods.

**Program Requirements**

Completion of the MSc FSQA program requires a minimum of seven courses (or 4.0 credits) acceptable for graduate credit.

**Hybrid Delivery**

Students must complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSQA*6000</td>
<td>Food Safety and Quality Assurance Seminar</td>
<td>0.50</td>
</tr>
<tr>
<td>FSQA*6500</td>
<td>Food Safety and Quality Assurance Research Project¹</td>
<td>1.00</td>
</tr>
<tr>
<td>FSQA*6600</td>
<td>Principles of Food Safety and Quality Assurance</td>
<td>0.50</td>
</tr>
<tr>
<td>FSQA*6150</td>
<td>Food Quality Assurance Management</td>
<td>0.50</td>
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</tbody>
</table>

At least three additional courses

¹ This project, equal to 1.00 credit, is one of the seven courses required to complete the program.

² Suitable courses are listed in the courses section. Other courses, not listed here, also may be considered. Up to two senior undergraduate courses can be taken. The courses selected will depend upon the student’s background, specialty, interest and area of project research. The normal duration of the program is three to four full-time semesters.

**Distance Delivery**

Students must complete:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FSQA*6150</td>
<td>Food Quality Assurance Management</td>
<td>0.50</td>
</tr>
<tr>
<td>FSQA*6400</td>
<td>Workplace Project in Food Safety</td>
<td>1.00</td>
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<tr>
<td>FSQA*6600</td>
<td>Principles of Food Safety and Quality Assurance</td>
<td>0.50</td>
</tr>
</tbody>
</table>

At least four additional courses by distance education

The normal duration of the program is three full-time semesters.

**Graduate Diploma**

**Admission Requirements**

The program is most suitable for those with an undergraduate food science or microbiology background and for those currently employed in food safety and quality assurance fields in government food regulatory work or in the food industry who desire upgrading of skills and knowledge. Applicants for admission to this program must meet the admission requirement of a baccalaureate in an honours program (or the equivalent) in a relevant field of study from a recognized university or college with an average standing of at least a ‘B’ average. Applicants will be expected to have completed undergraduate courses that prepare them for participation in the core graduate courses and electives of the program. Undergraduate upgrading may be necessary to ensure sufficient background in topics such as microbiology, toxicology, statistics, and analytical methods.

**Program Requirements**

All students must complete the following five courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FSQA*6100</td>
<td>Food Law and Policy</td>
<td>0.50</td>
</tr>
<tr>
<td>FSQA*6150</td>
<td>Food Quality Assurance Management</td>
<td>0.50</td>
</tr>
<tr>
<td>FSQA*6200</td>
<td>Food Safety Systems Management</td>
<td>0.50</td>
</tr>
<tr>
<td>FSQA*6600</td>
<td>Principles of Food Safety and Quality Assurance</td>
<td>0.50</td>
</tr>
<tr>
<td>POPM*6350</td>
<td>Safety of Foods of Animal Origins</td>
<td>0.50</td>
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</tbody>
</table>

**Collaborative Specializations**

**Toxicology**

The MSc in Food Safety and Quality Assurance participates in the collaborative specialization in toxicology. Two Toxicology graduate level courses must be completed as part of the course work. Please consult the Toxicology listing for a detailed description of the master’s collaborative specialization.

**Courses**

**FSQA*6000 Food Safety and Quality Assurance Seminar Fall Only [0.50]**

Provides experiential training in forms of communication that are likely to be required in professional or academic careers in food science and technology.

**Restriction(s):** This course is open only to students in the MSc FSQA program.

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

**Location(s):** Guelph

**FSQA*6100 Food Law and Policy Fall Only [0.50]**

Provides experiential training in forms of communication that are likely to be required in professional or academic careers in food science and technology.

**Restriction(s):** This course is open only to students in the MSc FSQA program.

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

**Location(s):** Guelph

**FSQA*6150 Food Quality Assurance Management Winter Only [0.50]**

Provides experiential training in forms of communication that are likely to be required in professional or academic careers in food science and technology.

**Restriction(s):** This course is open only to students in the MSc FSQA program.

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

**Location(s):** Guelph

**FSQA*6200 Food Safety Systems Management Winter Only [0.50]**

Provides experiential training in forms of communication that are likely to be required in professional or academic careers in food science and technology.

**Restriction(s):** This course is open only to students in the MSc FSQA program.

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

**Location(s):** Guelph
FSQA*6300 Leadership in Food Safety Fall Only [0.50]
This course prepares students for food safety leadership roles in the global food industry by developing core problem-solving, management, and communication competencies. Students are exposed to industry based and governmental based food safety leadership initiatives at both the regional and international levels.
Offering(s): Offered through Distance Education format only.
Department(s): Department of Food Science
Location(s): Guelph

FSQA*6400 Workplace Project in Food Safety Winter and Summer Reg Required [1.00]
A major project of relevance to a host employer related to food safety and quality assurance, which includes the preparation of a written and an oral presentation to the graduate faculty.
Offering(s): Offered through Distance Education format only.
Department(s): Department of Food Science
Location(s): Guelph

FSQA*6500 Food Safety and Quality Assurance Research Project Summer, Fall, and Winter [1.00]
An original research project related to food safety and quality assurance which includes the preparation of a written report suitable for publication and an oral presentation of the findings to the graduate faculty.
Department(s): Department of Food Science
Location(s): Guelph

FSQA*6600 Principles of Food Safety and Quality Assurance Fall Only [0.50]
An integrated approach to factors affecting food safety and quality including microbial and chemical contamination is provided. Major foodborne disease outbreaks are studied as examples. Modern methods of quality management to minimize contamination of processed foods is discussed.
Offering(s): Offered through Distance Education format only.
Department(s): Department of Food Science
Location(s): Guelph

Other Graduate Courses Suitable for Credit in this Program

Food Science

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FOOD*6190</td>
<td>Advances in Food Science</td>
<td>0.50</td>
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<tr>
<td>FOOD*6710</td>
<td>Special Topics in Food Chemistry</td>
<td>0.25</td>
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<tr>
<td>FOOD*6720</td>
<td>Special Topics in Food Microbiology</td>
<td>0.25</td>
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<tr>
<td>FOOD*6730</td>
<td>Special Topics in Food Physics</td>
<td>0.25</td>
</tr>
<tr>
<td>FOOD*6740</td>
<td>Special Topics in Food Processing</td>
<td>0.25</td>
</tr>
<tr>
<td>FOOD*6750</td>
<td>Special Topics in Food for Health</td>
<td>0.25</td>
</tr>
<tr>
<td>FOOD*6760</td>
<td>Special Topics in Food Quality</td>
<td>0.25</td>
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Human Heath and Nutritional Sciences

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HHNS*6400</td>
<td>Functional Foods and Nutraceuticals</td>
<td>0.50</td>
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<tr>
<td>HHNS*6410</td>
<td>Applied Functional Foods and Nutraceuticals</td>
<td>1.00</td>
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</table>

Pathobiology

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PABI*6000</td>
<td>Bacterial Pathogenesis</td>
<td>0.50</td>
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<tr>
<td>PABI*6550</td>
<td>Epidemiology of Zoonoses</td>
<td>0.50</td>
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Population Medicine

<table>
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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>POPM*6200</td>
<td>Epidemiology I</td>
<td>0.50</td>
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<tr>
<td>POPM*6210</td>
<td>Epidemiology II</td>
<td>0.50</td>
</tr>
<tr>
<td>POPM*6350</td>
<td>Safety of Foods of Animal Origins</td>
<td>0.50</td>
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Plant Agriculture

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<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>PLNT*6110</td>
<td>Fruit and Vegetable Technology</td>
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Other Undergraduate Courses Suitable for Credit in this Program

Food Science

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>FOOD*3030</td>
<td>Food Chemistry I</td>
<td>0.50</td>
</tr>
<tr>
<td>FOOD*4190</td>
<td>Advanced Food Analysis</td>
<td>0.50</td>
</tr>
<tr>
<td>FOOD*4090</td>
<td>Functional Foods and Nutraceuticals</td>
<td>0.50</td>
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</table>

Human Health and Nutritional Sciences

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NUTR*4510</td>
<td>Toxicology, Nutrition and Food</td>
<td>0.50</td>
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Population Medicine

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<tr>
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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>POPM*4040</td>
<td>Epidemiology of Food-borne Diseases</td>
<td>0.50</td>
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</tbody>
</table>