# Food Safety

**Program Director:** Paul Schwarz (Paul.Schwarz@ndsu.edu)
**Phone Number:** (701)231-7732
**Degrees Offered:** Ph.D., M.S., Certificate
**Application Deadline:** March 15th for fall semester; October 15th for spring semester
**Testing Requirements:** GRE
**English Proficiency** TOEFL ibT 71
**Requirements:** IELTS 6

## Program Description

The Food Safety graduate programs are interdisciplinary and many NDSU graduate faculty participate in advising graduate students in these programs. For more information about faculty involved with these programs and their activities within the Great Plains Institute of Food Safety see www.ag.ndsu.edu/foodsafety or **www.ag.ndsu.edu/foodsystems/** .

**Background.** The lack of individuals with food safety expertise is becoming increasingly evident in government, business, and academia. This food safety expertise gap is widespread and exists in many professions. For these reasons the graduate degrees in Food Safety and the Graduate Certificate in Food Protection were initiated in 2001.

**Degrees Offered and the Graduate Certificate** The GPIFS offers several programs at the graduate level. Research project based degrees include the Doctor of Philosophy (Ph.D.) and the thesis based Master of Science (M.S.). The thesis based M.S. degree is preparatory for students who may wish to advance to Ph.D. programs. Individuals earning a Ph.D. degree will be educated as independent researchers, expanding their potential to become principal investigators of food safety research in various arenas, including business, academia, and government. The M.S. degree is offered as a thesis based option or a non-thesis option (see Comprehensive Study Option) and will prepare students for supervisory roles in the food industry, in regulatory agencies, or in public health. The Graduate Certificate in Food Protection is aimed at professionals looking to augment their skills, as well as graduate students in other programs wishing to add a credential to their degree programs.

**Administration** The interdisciplinary Food Safety graduate programs are administered through the GPIFS in the School of Food Systems. The GPIFS is primarily composed of faculty participants from the Colleges of Agriculture, Food Systems, and Natural Resources; Arts, Humanities, and Social Sciences; Engineering and Architecture; Human Development and Education; and Science and Mathematics. The GPIFS graduate students and supervisory committees report to the School of Food Systems Director for program level policies and to the College of Graduate and Interdisciplinary Studies as the academic college.

## Admissions Requirements

### Admission, Advisor Assignment and Assistantships

Admission requirements for the Food Safety programs are based on the minimum NDSU requirements for degree programs and graduate certificates, with additional requirements for the research based degree programs (Thesis based M.S. and Ph.D.) including:

### Thesis based M.S.

A relevant baccalaureate degree from an accredited institution of recognized standing. Appropriate degrees might be in food science, food safety, meat science, cereal science, microbiology, veterinary science, economics, engineering, dietetics, nutrition, agricultural policies or communication.

- The Graduate Record Examination General Test scores are required for evaluation purposes. Scores that are lower than the 50th percentile will generally weaken an applicant's chance of being accepted. In all cases, other forms of evidence for academic success will be considered and may supersede the GRE score for evaluative outcomes.

### Dissertation Based Ph.D.

A relevant baccalaureate degree from an accredited institution of recognized standing. Appropriate degrees might be in food science, food safety, meat science, cereal science, microbiology, veterinary science, economics, engineering, dietetics, nutrition, agricultural policies or communication. Applicants with a completed M.S. degree (in any related field of study) are generally regarded as more prepared for the Ph.D. program than applicants with only a Bachelors degree.

- For students that have not already completed an M.S. degree at an institution in the United States, the Graduate Record Examination General Test scores are required for evaluation purposes. GRE scores that are lower than the 50th percentile will generally weaken an applicant's chance of being accepted. In all cases, other forms of evidence for academic success will be considered and may supersede the GRE score for evaluative outcomes.

### Non-thesis option and Certificate

The non-thesis M.S. option and the Graduate Certificate in Food Protection do not require the GRE.

**Applications for summer or fall admittance should be received by March 15. Applications for spring admittance should be received by October 15. The Graduate School does not forward applications for review to the program until the application package is complete. Failure to meet these program deadlines may result in rejection or postponement of admission. Common errors resulting in late applications include missing letters of recommendation and late payment of application fees.**

Applications completed by the deadlines are forwarded to the GPIFS Executive Committee for review shortly after the deadline. The committee reviews all applications for acceptability. Applications for research based programs (thesis-M.S. and Ph.D.) are then distributed to faculty to determine tentative advisor placements. Acceptance of the applicant will be judged by a committee of faculty using a combination of factors including those presented above and on applicant's recommendations and statement of purpose. No one faculty member can judge an applicant's qualifications and thus we discourage random request to faculty about their qualifications for entrance into the program. Only prospective students that have submitted an application will be evaluated. Applications for research based programs of acceptable quality may still be rejected if there is not an assistantship available to support the student with, and are therefore the most competitive programs for admission.

Assistantships are reserved for students in the research based programs. Amounts and types of assistantships vary. Research assistantships generally are available through grants obtained by research faculty members and are subject to requirements of the funding source and the

NDSU Graduate School assistantship policies. Teaching assistantships are occasionally available to qualified students.

Applications of acceptable quality for the non-research based programs (non-thesis M.S. and Graduate Certificate) will generally be accepted into those programs, unless enrollment caps are being enforced. All applicants will be notified about final decisions as soon as possible, however, applicants should understand that processing may take several weeks after the deadlines.

## Doctor of Philosophy (Ph.D.)

The Ph.D. is awarded in recognition of satisfactory completion of advanced studies, written and oral preliminary examinations, performance of novel research in the area of food safety, and development and defense of an acceptable dissertation detailing the student's research. For each doctoral student admitted to the program, an advisory committee will be established. This committee will consist of the major adviser who will chair the committee, and two other selected graduate faculty. Additionally, the Graduate School will appoint an outside member of the committee. The student and major adviser will prepare the plan of study, which is subject to the approval of the committee, the GPIFS director, and the Graduate School dean. The plan of study, which must be filed in the Graduate School, will include not less than 90 semester credits. Fifteen of these credits must be at the 700-789 level. An overall grade point average of 3.0 must be maintained on the required course work.

The plan of study for the Ph.D. will be multidisciplinary. All plans will include sufficient course work to demonstrate a minimum proficiency in food safety. The plan of study should be signed off by the Graduate School by the end of the first semester of enrollment in the program.

## Master's of Science (M.S.)

Students may choose a non-thesis M.S. degree or opt for the research-oriented, thesis-requiring program. The non-thesis option is available for students seeking a broad range of knowledge and skills suitable to the workplace. This degree can be obtained by taking a combination of online and on-campus courses or completely online. This degree will not prepare students for careers in research. Students will be required to compose a novel, comprehensive paper, which is a synthesis of the literature regarding some aspect of food safety. The coordinator of the program, under the direction of the Director of the Great Plains Institute of Food Safety and the Advisory Board, will review the student’s choice of courses and progress as outlined in the program requirements. Based on the performance of the student in the required and optional courses and the required paper, the coordinator will approve whether the student has met all the requirements to receive the M.S. degree with final approval by the Graduate School.

The thesis-requiring degree is a research degree and, as such, can prepare the student for future study at the doctoral level. The student will perform a novel research project designed to contribute to the body of knowledge in some area pertinent to food safety, prepare a thesis on this research, and defend it in a final oral examination administered by the advisory committee. The advisory committee will be composed of the major adviser who will chair the examining committee, two additional graduate faculty, and a Graduate School appointee. The student and major adviser, in consultation with the committee, will design the student's plan of study. The plan of study should be signed off by the Graduate School by the end of the first semester of enrollment in the program.

1. Non-Thesis Option: Of the 30 graduate credits required, a minimum of 21 must be in courses approved for graduate credit (601-689 or 700-789). The paper credits must not be fewer than two hours nor more than four. The paper's topic and scope will be determined by the student in consultation with the program coordinator and the Food Safety Master’s Paper Course (Safe 797) instructors who will serve as the student’s advisory committee.
2. Thesis Option: Of the 30 graduate credits required, a minimum of 16 credits must be approved for graduate credit (see above), and thesis credits must not be fewer than 6 nor more than 10 credits. In this case, the student, under the guidance of a major adviser and with the approval of the graduate committee, will perform a novel research project designed to contribute to the body of knowledge in some area pertinent to food safety, prepare a thesis on this research, and defend it in a final oral examination administered by the examining committee.

## Graduate Certificate in Food Protection Requirements

To be admitted to this program, students must demonstrate that they have a baccalaureate degree in an area pertinent to food safety from an accredited educational institution of recognized standing. To obtain a Graduate Certificate in Food Protection, students must successfully complete the 9 semester credits of core curriculum and earn a grade of B or better in each course.

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| SAFE 601 | Food Safety Information & Flow of Food | 1 |
| SAFE 602 | Foodborne Hazards | 1 |
| SAFE 603 | Food Safety Risk Assessment | 1 |
| SAFE 604 | Epidemiology of Foodborne Illness | 1 |
| SAFE 605 | Costs of Food Safety | 1 |
| SAFE 606 | Food Safety Crisis Communication | 1 |
| SAFE 607 | Food Safety Risk Management | 1 |
| SAFE 608 | Food Safety Regulatory Issues | 1 |
| SAFE 609 | Food Safety Risk Communication & Education | 1 |
| Total Credits | | 9 |

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