The information in this handbook and other University catalogs, publications, or announcements is subject to change without notice. University offices can provide current information about possible changes.
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This handbook is prepared in an effort to provide a summary of the policies of the Graduate Faculty in Food Science regarding graduate study. Each graduate student is expected to be familiar with this handbook as well as the information contained on the University of Minnesota Graduate Student Services and Progress (GSSP) office website, One Stop and the Graduate Assistant Employment website. The material contained in these references is generally not reproduced in this handbook.

The Food Science Program Handbook is revised periodically to keep it up-to-date. However, students are urged to contact their advisor, the Director of Graduate Studies (DGS) or the Graduate Student Services Coordinator for the most current information. Suggestions for improvement of this handbook are welcomed at any time and should be submitted to the Director of Graduate Studies.
Food Science Graduate Program Overview

The Department of Food Science and Nutrition administers the Food Science Graduate Program. This program involves the application of the principles of chemistry, microbiology, processing technology, and consumer issues to the production of high quality, safe, and wholesome foods.

The specific objectives of the Food Science Graduate Program are: 1) to provide graduate level education for post-baccalaureate students interested in applying science and engineering principles to the theoretical and practical aspects of the entire food chain - from raw material production to product utilization by the consumer, 2) to provide a focus for graduate study and research in Food Science at the University of Minnesota, and 3) to aid in promoting interactions with other disciplines which relate to the study of food science.

While students in our Food Science Graduate Program may specialize in any one of the specific areas given above, they are also required to have a comprehensive knowledge of other areas.

• Food chemistry is concerned with the analytical, biochemical, chemical, physical, nutritional, and toxicological aspects of food and food ingredients.
• Food microbiology focuses on food safety (the prevention of foodborne disease and biosecurity), microbiological aspects of food production, food spoilage, food fermentations/biotechnology, genomics, processing, preservation, and storage.
• Food processing deals with the application of scientific, engineering, and economic principles to food processes and food processing equipment.
• Food technology involves the application of modern scientific and engineering principles to the preservation and distribution of food.
• The consumer issues area is concerned with the attributes of a food that influence its success or failure in the marketplace.

Degrees Offered

The program offers both the Master of Science and Doctor of Philosophy degrees. Qualified students with strong foundations in the sciences are eligible for admission. The Master’s program offers two plan options. Plan A entails producing a thesis. Plan B substitutes a special project and additional coursework for a thesis. A M.S. normally requires a minimum of two years of full time effort to complete. This depends on the student’s preparation, course of study, motivation, and research program. A Ph.D. would normally be completed in about four years based on similar criteria.

Plan A Master’s with Thesis
All Plan A Master's students must meet the minimum Graduate School requirements of 20 credits in the major and 10 thesis credits. Specific course requirements are listed under Degree Requirements. The student must pass a final oral examination that includes the defense of an acceptable thesis and general questions in food science.

Plan B Master’s Degree without Thesis
The general requirements for the Plan B Master's degree are the same as noted above, but 10 additional course credits are required in place of 10 thesis credits. (Only 4 credits of Independent Study or Research Topics are allowed on the Degree Plan.) The Plan B project is done in lieu of a Master's thesis. It is equivalent to 120 hours of work of research and writing. The student must pass a final oral examination.

Ph.D. Degree
The Doctor of Philosophy degree is granted, not on the basis of successful completion of a definite amount of prescribed work, but rather in recognition of the candidate’s notable accomplishments and abilities in a specialized field in food science. This is shown, first, by passing the required examinations covering both the general and the specialized fields of the candidate and second, by preparing a thesis. The degree requires a minimum of 48 credits (24 course and 24 thesis) and a maximum of 72 credits. Specific course requirements are listed under Degree Requirements.

Graduate Minor in Food Science
A student majoring in another field who wishes to complete a minor in Food Science must consult with the DGS in Food Science to establish specific requirements and goals for an acceptable minor program of study. FScN 4112 Food Chemistry and Functional Foods (3 cr), 4121 Food Microbiology (3 cr), and FSCN 4332 Food Processing Operations (3 cr.) must be taken for a MS minor totaling 9 credits. Doctoral students take the previous 3 courses, plus at least 3 more FScN credits at the 5000 or 8000 level for a total of 12 credits.

Entrance Requirements for the Food Science Graduate Program

The Food Science Graduate Program endorses the Graduate School’s commitment to diversity which states: “The Graduate School embraces the University of Minnesota’s position that promoting and supporting diversity among the student body enriches graduate education by providing a multiplicity of views and perspectives that enhance research, teaching, and the development of new knowledge. A diverse mix of students promotes respect for, and opportunities to learn from, others with the broad range of backgrounds and experiences that constitute modern society. Higher education trains the next generation of leaders of academia and society in general, and such opportunities for leadership should be accessible to all members of society. The Graduate School and its constituent graduate programs are therefore committed to providing equal access to educational opportunities through recruitment, admission, and support programs that promote diversity, foster successful academic experiences, and cultivate the leaders of the next generation.”

Requirements for admission and application instructions can be found at https://fscn.cfans.umn.edu/graduate-programs/food-science/prospective-students
Action Taken on Applications for Admission

The Graduate Studies Committee of the Food Science Graduate Program implements the rules and regulations of the graduate faculty in Food Science on all aspects of evaluation of applicants for admission to the program.

The evaluation of applicants includes:

1. Evaluation of scholastic record as an undergraduate (and graduate if appropriate).
   - Overall grade point average (GPA). The Food Science Graduate Program has a preferred performance level of 3.0.
   - Grades in basic sciences; general chemistry, organic chemistry, biochemistry, physics, mathematics, biology, microbiology, statistics, and others as appropriate. Any student with a bachelor’s degree or its international equivalent from a recognized college may apply for admission if they have completed the following coursework requirements:
     1) General Chemistry with lab
     2) Organic Chemistry with lab
     3) Physics with lab
     4) Biology with lab
     5) Calculus (college level or documented equivalent)

2. GRE / TOEFL Test Scores
   The applicant in Food Science is required to take the Graduate Record Examination (GRE). The results are advisory to the Food Science Graduate Studies Committee and no specific minimum scores are required. International applications must complete the TOEFL, MELAB, or IELTS if their native language is not English, except those who will have completed 24 quarter credits/16 semester credits (within the past 24 months) in residence as a full-time student at a recognized institution of higher learning in the United States before entering the University of Minnesota.

3. Evaluation of three recommendations.

4. Personal objectives and goals statement.

The application process has two steps. After an application is reviewed, the DGS reviews the remarks of the Graduate Studies Committee from each admission evaluation sheet and applicants that meet the basic admission criteria are notified they are “admissible” to the program. In order to be formally admitted, admissible applicants must acquire a faculty advisor. Those found admissible are not automatically assigned an advisor. Rather, a list of admissible students is sent to graduate faculty members every few weeks. Faculty interested in advising an applicant will contact them directly to discuss their interest and any availability of financial support. Applicants are also encouraged to contact a small number of specific faculty members with whom they would like to work, to discuss their background and why they are interested in working with them, but these contacts should be limited to the few faculty members whose work truly interests them. If an applicant is not able to find an advisor they can continue to be on the list of applicants looking for an advisor for an additional semester. If an applicant is unable to find an advisor the applicant is rejected for lack of an advisor.

Admission to the PhD Program

Admission to the Ph.D. program is possible under the following circumstances, subject to approval by the graduate studies committee and acquiring a faculty advisor.

- Direct Admission to the Ph.D. Program
   In addition to an exceptional coursework record and exceptional GRE scores, the student must have demonstrated research capabilities. Demonstration of research capabilities can take many forms, e.g., a published paper, senior thesis, undergraduate research project report, etc. In any case, something tangible must be present for evaluation.

- Change of Status to Ph.D. before completion of the MS
   The student and advisor must adequately document research capability.

- Change of Status to Ph.D. Program on completion of the MS
   A student may apply for admission to the Ph.D. program after obtaining the M.S. degree.

To apply for Change of Status see http://www.grad.umn.edu/admissions/cos/index.html. There is a $75 application fee. The applicant creates a new username and fills out a new application entering information in the required (starred) fields, a personal statement explaining the reasons the applicant seeks to change status to the PhD and at least one example of documented research. The department also requires a letter from the advisor indicating that he/she will advise the student in the PhD. Other letters of recommendation can be submitted but they are not required for the application to be reviewed. After the Food Science Graduate Studies committee reviews the application the applicant is notified of the result. This process may take up to one month.

Financial Support

Department funding is restricted and offered through a competitive process, based on applicant qualifications and program resources. If available, it is usually in the form of a research or teaching assistantship and obtained through a student’s advisor. Assistantships include an hourly wage, a full or partial tuition waiver, and reduced cost health care benefits. See Graduate Assistant Employment for more information on assistantship compensation and benefits.
Advisors and funding are limited, and not guaranteed to all applicants deemed admissible. There is no separate application to be completed for assistantships, or list of current advisee openings or faculty with funding, as these vary according to term and faculty member.

If a faculty member offers to advise you without financial support and you agree to those terms, you must not expect that graduate program funding will become available to you at some later date. Instead, you should seek to secure independent funding for the full duration of your graduate studies.

**Faculty Advisor**

The faculty advisor will assist the student with program planning, course selection, and the selection of a research project. Students do not often change advisors during the pursuit of a particular degree, but occasionally it is necessary to do so. If either the faculty member or the student wishes to initiate a change, this may be done by contacting the DGS who will consult with all concerned and arrange the change.

**Food Science Graduate Program Requirements**

Students are responsible for knowing all program requirements of their degree when they matriculate. If program requirements change, students may elect to continue under the requirements in effect when they matriculated, provided they have remained in good standing.

**Registration Requirement**

Students are required to enroll every semester (fall and spring) from the time of matriculation until degree conferral.

Students will be required to seek readmission if they do not register every fall and spring term. The Readmission Application http://www.grad.umn.edu/admissions/readmission/index.html must be filed by all students who have been admitted to and registered in the Graduate School and are seeking readmission or a change of major or degree objective.

Please see this link for registration options for students who have completed their coursework but have not yet passed their final exam (e.g. GRAD 999 and Advanced Status): https://onestop.umn.edu/academics/special-registration-categories-graduate-and-professional-students

*Please note: Graduate students may register for up to four semesters of GRAD 999 while continuing to work on a thesis or Plan B project. A hold will be placed on the student’s registration after four semesters of GRAD 999.*

Students who are not able to maintain active status are strongly encouraged to consult with their Director of Graduate Studies, advisor, and relevant offices to determine whether requesting a leave of absence is the most appropriate course of action. Students who do not have an approved leave of absence and are not continuously enrolled may experience negative consequences related to academic, visa, financial aid, and other student issues. For more information see http://www.policy.umn.edu/Policies/Education/Education/GRADSTUDENTLEAVE.html

**Graduate Degree Plan**

Students must submit a Graduate Degree Plan, in consultation with their advisor, to ensure that their course plan fulfills the minimum graduate education and program requirements.

**Steps:**

1. Complete the Food Science Graduate Degree Plan Worksheet in consultation with your adviser. It is found on the FSCN Department website under Departmental Graduate Forms here: http://fscn.cfans.umn.edu/graduate-programs/student-forms

2. After your adviser signs the form, submit it to Nancy Toedt, Graduate Program Coordinator, in FSCN 225J or ntoedt@umn.edu. She will forward it to the Food Science Graduate Studies Committee for review and then to the DGS for final approval.

3. Nancy will notify you when your plan is approved and email you a copy of the worksheet.

4. Enter your course plan into the Graduate Planning and Audit System (GPAS) and submit. GPAS consists of two parts that work together: the planner and the audit or advisement report. The planner allows you to map out the coursework you plan to complete while finishing your degree. The audit will show which courses have been completed, what you plan on taking, and what requirements are left to complete a degree. See instructions here: http://onestop.umn.edu/academics/how-use-gpas-planner and http://asr.umn.edu/applications-and-work-tools/gpas

5. After your GPAS submission is approved, a milestone will be added to your record indicating you can move to the next step in your degree completion checklist. See:

   - MS Plan A checklist: https://assets.asr.umn.edu/files/gssp/otr201g_Masters_PlanA_GPAS.pdf
   - MS Plan B checklist: https://assets.asr.umn.edu/files/gssp/otr202g_Masters_PlanBC_GPAS.pdf
   - PhD checklist: https://assets.asr.umn.edu/files/gssp/otr204g_Doctoral_Philosophy_Education_GPAS.pdf

MS students must submit their Degree Plan into GPAS no later than one semester before graduation. Doctoral students must submit it at least one semester prior to the Preliminary Oral Exam.
Grades and GPA

Grades of A, B, and C are permitted on the Degree Plan. No credit is allowed for work with a grade lower than a C minus, and the student is expected to maintain an average GPA in all coursework of better than 2.8 for the M.S. degree and 3.0 for the Ph.D. degree (A=4, B=3, C=2, D=1). Students may take any course on an S/N basis as per the University of Minnesota Graduate School regulations which specify that at least two-thirds of the credit hours on any official degree program must be in courses taken on an A/F basis. The Food Science Graduate Program permits a maximum of 4 credits of incomplete coursework on a student’s transcript. More than 4 credits of incomplete coursework will result in a hold on the student’s record. All grades received become a part of the student’s permanent record, whether or not they are satisfactory. While there may be unusual exceptions, no course may be retaken for the purpose of raising a low grade previously earned. In cases where the student has taken coursework beyond the minimum program requirements, the advisor and the Graduate Studies Committee in evaluating and approving the minimum program submitted, will also expect comparable standards of performance for all classes on the transcript. They may reject the minimum degree program if the total record falls below the academic standard for the degree and may also terminate candidacy. The DGS will monitor degree program progress to determine if any student falls below the required GPA for the degree program. A student’s registration may be put on hold if the calculated GPA falls below the degree standard. The DGS will forward such transcripts of students below acceptable academic performance to the Quality Control Committee who will then review the transcript with the advisor and make recommendations to the DGS whether or not to put a hold on the record or terminate.

Annual Review of Student Progress

Students are required to complete the Annual Food Science Graduate Student Progress Report each year in order to ensure the timely completion of degree requirements and that M.S. / Ph.D. quality research is being conducted which will meet thesis requirements. This form serves to summarize degree plan progress and to identify any concerns. When a student’s performance and/or progress does not meet program requirements, he/she shall be notified by the DGS or his/her advisor. If the deficiencies endanger the student’s status in the graduate program, he/she shall be promptly informed. A graduate student will be dismissed if his/her cumulative GPA is below 2.8 for three consecutive semesters.

Research expectations will be made clear to the graduate student by his/her faculty research advisor. The evaluation of research progress serves to keep the student and advisor focused on the timely completion of the degree. The faculty research advisor will determine satisfactory research progress; however, it is recommended that the student actively involve his/her Exam Committee. If satisfactory research progress is not being made, the advisor must inform the student in writing on the “Annual Food Science Graduate Student Progress Report” form and must indicate the conditions necessary for satisfactory progress.

The “Annual Food Science Graduate Student Progress Report” form will become a permanent record of accomplishment and will be maintained in the graduate student’s departmental file. A student’s continued participation in the Food Science Graduate Program is contingent upon submission of the Annual Food Science Graduate Student Progress Report each year. A student’s registration may be put on hold if this form is not submitted by the deadline.

Teaching Assistant Requirement

Students are required to serve as a Teaching Assistant for one class each year up to a minimum of 2 years for a M.S. student and a minimum of 3 years for a Ph.D. student. For more information see the Teaching Assistant Policy in the Appendix.

Proficiency in English

All international students must take the Teaching Assistant SPEAK test upon arrival and must pass before they TA any courses. The amount of remedial English study will be determined through testing by the University. English courses will have priority over other coursework until adequate proficiency is demonstrated. International students can also find more information at the International Student and Scholar Services Office. http://www.isss.umn.edu/

Safety Training

All graduate students must meet the University safety requirements for training as outlined by the Departmental Safety Committee for their work area. The laboratory safety coordinator for the student’s work area will have the necessary information on training required and forms for documentation of completing training. A copy of the Departmental Chemical Hygiene program is on file in FScN 225. This document provides the protocols for the safe handling and use of hazardous chemicals.

Requirements for the Master’s Degree in Food Science

Coursework

1) All Degree Plans must contain:

a. FSCN 4112 Food Chemistry and Functional Foods (3 cr)*
b. FSCN 4121 Food Microbiology (3 cr)*
c. FSCN 4332 Food Processing Operations (3 cr)*
d. One of the following: FSCN 5122 Food Fermentations and Biotechnology and FSCN 5123 Molecular Biology for Applied Scientists, FSCN 5131 Food Quality or FSCN 5312 Food Analysis *
e. FSCN 8318 Current Issues in Food Science
f. At least 3 FSCN course credits at the 5XXX or 8XXX level (from Graduate Program list of appropriate courses). (These credits are in addition to any credits release as a result of having taken course(s) form courses listed in a to d above.)
g. Additional 5XXX and 8XXX credits to reach minimum of 20 course credits
h. Ten credits of FSCN 8777 Thesis Credits: Master’s
If a student has taken these course(s) or their equivalents (the equivalence will be evaluated by the Graduate Studies Committee with DGS having final approval when the student files the Degree Program including transcripts and a course syllabus) to a, b, c, and/or d above, they can take other courses but must take an additional 5 FScN credits at the 5XXX and 8XXX level (from a Food Science Graduate Program list of appropriate courses) and rest are free to be used elsewhere.

2) Non-specified program courses are decided upon by the student and adviser.

3) For a Master’s Plan B degree 10 additional course credits are substituted for the 10 thesis credits. The courses to substitute are decided upon by the student and adviser. Only 4 credits of Independent Study or Research Topics are allowed on the Degree Plan and only 9 credits of 4XXX level courses are allowed on the Degree Plan.

The Degree Plan cannot exceed 36 total credits nor contain more than 9 credits of 4XXX level courses.

Students must have a 2.80 minimum GPA for courses included on the degree plan at the time of degree clearance.

Students can choose to pursue a minor in another field. The courses must be approved by the Director of Graduate Studies in the chosen department.

Master’s Thesis or Plan B Project

All students who complete a Plan A Master’s Thesis must file a digital copy of the thesis with the University in accordance with University standards. Students may request that the University embargo publication of the thesis for a limited period of time. For thesis formatting and submission guidelines see: https://onestop.umn.edu/academics/thesisdissertation-submission-and-formatting

The Plan B project, as required by the graduate faculty in the field of Food Science, is done by the candidate in lieu of a Master’s thesis. The intent of the Plan B project is to give the candidate some chance to do work (independent of courses) which should be of the quality of graduate study. It is equivalent to 120 hours of work or three full weeks of research and writing. It should consist of one of the following options which are intended to familiarize the candidate with the tools of research or scholarship in the field and serve to demonstrate the ability to work independently:

1. The student may do an equivalent amount of library or laboratory research and write a research report to satisfy the requirement as approved by the advisor. This may take the form of a research proposal.

2. The candidate may prepare one paper equivalent to 120 hours of work in one advanced course, over and above the normal course requirement as approved by the instructor in consultation with the advisor. This course must be from the major field of interest.

Master’s Final Examination

Final Examination Committee:
The final examination committee must consist of at least three members, including the advisor/s. The student, after consultation with their advisor, submits a suggested list of faculty to serve on the Master’s Final Exam Committee. At least two members of this Committee must be members of the Food Science graduate faculty and one additional outside member representing another graduate faculty department. If a student has chosen a minor field, the faculty member from that field will serve as the outside examiner for the final exam. The faculty suggested must have been contacted in advance by the graduate student to insure their willingness to participate (if selected) in the student’s examination. Committee assignments and updates are initiated by the student via an online request form at least one month prior to the examination. The Director of Graduate Studies and the College will make the final approval of Examination Committee members. To request or update your examination committee and for further information about committee rules and membership see https://onestop.umn.edu/academics/examination-committees

Final Examination Procedure:
The student’s advisor and other members of the Final Examination Committee must be notified at least two weeks in advance that the thesis or Plan B project will be delivered on a particular date. All Examining Committee members must have at least two weeks to read the thesis or Plan B project after it has been delivered. The Committee will determine if it is ready for defense.

The student schedules the exam date, time, and room in consultation with their advisor and committee members. The forms needed for the exam are included in the Graduation Packet which is requested online from the GSSP office up to one month before the final exam. Every member of the final examination committee must certify on the master’s thesis reviewer’s report that the thesis or project submitted in lieu of a thesis is ready for defense before the final examination may take place.

All members of the committee and the student must participate in the final examination. Committee members and/or the student may participate remotely as long as all conditions for remote participation in examination are met. http://www.policy.umn.edu/Policies/Education/Education/DOCTORALPERFORMANCE_APPA.html

For students submitting a Plan A thesis or Plan B project/paper, the final examination must contain an oral component. The final oral examination is a closed examination open only to the final oral examination committee and the student. The candidate for a Master’s degree,
Plan A or B, must pass the final oral examination of not more than 2 hours length. The oral presentation should not exceed 20 minutes, if given uninterrupted, and should cover, in the case of a Plan A these, research objectives, important results and the significance of the findings.

A majority vote of an examining committee is required to pass the master’s final examination. If revisions are required as a condition of passing, the advisor(s) must certify that the revisions have been completed before the degree is awarded. If the student fails the final examination, he or she may retake the examination only if all committee members, all committee members save one, approve this option. The second attempt to pass the master’s final examination must use the same committee members as the first examination unless an emergency situation necessitates a substitution. If the committee does not approve a retake, or if the student fails the second attempt, the student will be terminated from the program.

### Benchmarks for Food Science M.S. Degree Program

This is a list of benchmarks for a timely graduation. Students should meet with their advisor to convert the benchmarks into specific goals for their degree program. For the M.S. program, each student is required to be a Teaching Assistant in two classes.

#### First Semester
1. Complete required safety training. For further information, contact the FScN Department Safety Coordinator.
2. With assistance from advisor, determine course selection and selection of a research project.
5. Begin thesis research.

#### Second Semester
1. Continue coursework.
2. Continue thesis research.
3. Fulfill 1st Teaching Assistant (T.A.) responsibility.
4. After completing 10 credits of graduate course work, submit Degree Plan into GPAS.
5. Prepare final draft of literature review.

**Summer following First Year:** Continue thesis research

#### Third Semester
1. Continue coursework.
2. Continue thesis research.
3. Fulfill 2nd T.A. responsibility.
4. Submit abstract for presentation at national/international meeting.

#### Fourth Semester
1. Complete coursework.
2. Complete thesis research.
3. Assign committee members to Final Exam Committee (at least a month before exam)
4. Begin writing publication(s)/thesis.
5. Present research at Graduate Seminar

### Important Deadlines for MS Degree Completion

1. Register every fall and spring semester until your degree is awarded.
2. Turn in Annual Student Progress Report in March every year.
3. Submit Graduate Degree Plan into GPAS at least one semester prior to anticipated graduation.
4. Assign members to master’s final exam committee at least one month prior to exam.
5. Request Graduation Packet up to one semester before final exam.
6. Schedule final exam. Notify the advisor and other members of the final Oral Examination Committee at least two weeks in advance that the thesis or Plan B project will be delivered on a particular date. All Examining Committee members must have at least two weeks to read the thesis or Plan B project after it has been delivered.
7. Submit Graduate Application for Degree the first business day of anticipated month of graduation.
8. Obtain committee signatures on the Reviewer’s Report prior to the final exam.
9. Submit Final Examination Report and Reviewer’s Report to GSSP no later than the last business day of anticipated month of graduation.
10. After final exam, make corrections or revisions to the thesis or Plan B project. Submit thesis to GSSP Office and submit one bound copy of the thesis to FScN Student Services in 225J FScN. The Plan B paper does not require a hard cover, but must be in a securely bound material.
11. Perform required Departmental laboratory checkout. Turn in keys.
12. Students are encouraged to schedule an exit interview with the Department Head.

For links to the forms needed for these degree completion steps see:
Master’s Degree Plan A
https://assets.asr.umn.edu/files/gssp/otr201g_Masters_PlanA_GPAS.pdf
Time Limit for Earning the Master's Degree

All requirements for the master's degree must be completed and the degree awarded within the shorter of five calendar years after initial enrollment in the graduate program or the more restrictive time frame specified by the program. Students who are unable to complete the degree within the time limits described above due to extraordinary circumstances may petition the program and collegiate unit for an extension of up to 12 months. Students must obtain the approval of their advisor/s and program DGS and submit the petition by the deadline. If a petition is approved, the student is notified in writing of the expectations for progress and for the month/year of degree conferral. If the petition is denied, the student is notified in writing that he or she will be terminated from the graduate program upon expiration of the limit. Students who have been terminated under such circumstances may apply for readmission to the program; however, readmission is not guaranteed. For a petition form see https://onestop.umn.edu/sites/onestop.umn.edu/files/forms/um1779_masters_time_extension_request_form.pdf

Requirements for the Doctor of Philosophy Degree in Food Science

Coursework

1) All Degree Plans must contain:

   a. FSCN 4112 Food Chemistry and Functional Foods (3 cr)*
   b. FSCN 4121 Food Microbiology (3 cr)*
   c. FSCN 4332 Food Processing Operations (3 cr)*
   d. One of the following: FSCN 5122 Food Fermentations and Biotechnology and FSCN 5123 Molecular Biology for Applied Scientists, FSCN 5131 Food Quality or FSCN 5312 Food Analysis *FSCN 8318 Current Issues in Food Science
   e. At least 3 FSCN course credits at the 5XXX or 8XXX level (from Graduate Program list of appropriate courses). (These credits are in addition to any credits release as a result of having taken course(s) form courses listed in a to d above.)
   f. Additional 5XXX and 8XXX credits to reach minimum of 24 course credits
   g. 24 credits of FSCN 8888 Thesis Credits: Doctoral

   *If a student has taken these course(s) or their equivalents (the equivalence will be evaluated by the Graduate Studies Committee with DGS having final approval when the student files the Degree Program including transcripts and a course syllabus) to a, b, c, and /or d above, they can take other courses but must take an additional 5 FScN credits at the 5XXX and 8XXX level (from a Food Science Graduate Program list of appropriate courses) and rest are free to be used elsewhere.

2) Non-specified program courses are decided upon by the student and adviser.

Students who receive the MS Degree in Food Science at UMN and apply for and are granted the change of status to the PhD can use the majority of their MS coursework on their Degree Plan. However, they must take Current issues again.

The Degree Plan cannot exceed 72 total credits nor contain more than 9 credits of 4XXX level courses.

Students must have a 3.00 minimum GPA for courses included on the degree plan at the time of degree clearance.

Students can choose to pursue a minor in another field. The courses must be approved by the Director of Graduate Studies in the chosen department.

Doctoral Preliminary Written and Oral Examinations

Committee Selection

Each doctoral candidate must pass a written examination and a preliminary oral examination in the major field. The student, after consulting with their advisor, will choose his/her Committee in the first year of study. The Committee will consist of individuals on the graduate faculty of the University of Minnesota who have familiarity with the thesis subject area. The faculty suggested must have been contacted in advance by the graduate student to insure their willingness to participate (if selected) in the student’s examination. Committee assignments and updates are initiated by the student via an online request form at least one month prior to the examination. To request or update your examination committee and for further information about committee rules and membership see this link: https://onestop.umn.edu/academics/examination-committees

The doctoral preliminary written and oral committee must consist of at least five members, including the advisor/s. All members of the committee and the candidate must participate in the preliminary oral examination. Committee members and/or the student may participate remotely as long as all conditions for remote participation in the examination are met. See http://www.policy.umn.edu/Policies/Education/Education/DOCTORALPERFORMANCE_APPA.html
i. At least three members (including the advisor) must be from the student's major field.
ii. At least two members must represent a field outside the major
iii. If the student has declared a minor, at least one member must represent the minor field.
iv. Members cannot satisfy the requirement with respect to more than one field.

If the student is being coadvised and both advisors are serving on the Examining Committee, an additional committee member will be added to the Committee.

**Doctoral Preliminary Written Examination in Food Science**

The Preliminary Written Examination is a research proposal prepared by Food Science doctoral students. Purpose of the examination: 1) It is a requirement of the Graduate School 2) To examine the student’s ability to write a research proposal 3) To evaluate and enhance written communication skills.

Research proposal: The research proposal must be drafted by the student with only minor help from the advisor. Any detailed proposals on this research topic, written by the advisor (for example to acquire funding for the student's research), cannot be utilized. The research proposal is designed to emulate the USDA AFRI Grant Proposal Project Narrative format for Foundational grants (with modifications).

**Specific requirements:**
- The proposal needs to contain all elements listed in 1 – 6 below.
- The maximum page limit is 18 pages with standard 12-point font, line spacing not exceeding six lines of text per vertical inch, including all figures and tables. References are not included in the 18 page limit.

**Required Elements:**

1) **Project Summary/Abstract:** 250-word limit
   The summary should be self-contained, specific description of the activity to be undertake. It should focus on the project goal and the objectives, plan to accomplish the goals, and the relevance of the project.

2) **Introduction**
   Include a clear statement of the long-term goal(s) and supporting objectives of the proposed project. Summarize the body of knowledge or past activities that substantiate the need for the proposed project. Describe ongoing or recently completed activities significant to the proposed project including the work of key project personnel. Include preliminary data/information pertinent to the proposed project. All works cited should be referenced.

3) **Rationale and Significance**
   a) Concisely present the rationale behind the proposed project;
   b) Describe the specific relationship of the project’s objectives to improvement in some aspect of food science (safety, novel development/discovery, food and health, biotechnology, improving quality, fundamental chemical/physical/microbial characterization, method development, etc.)

4) **Preliminary Data. Can be included if appropriate.**

5) **Approach**
   The activities proposed or problems being addressed must be clearly stated and the approaches applied are to be clearly described. Specifically, this section must include:
   a) A description of the activities proposed and the sequence in which the activities are to be performed;
   b) Methods to be used in carrying out the proposed project, including the feasibility of the methods;
   c) Expected outcomes;
   d) Means by which results will be analyzed, assessed, or interpreted;
   e) How results or products will be used;
   f) Pitfalls that may be encountered;
   g) Limitations to proposed procedures;
   h) A timeline for attainment of objectives and for production of deliverables that includes annual milestones with specific, measurable outcomes.

6) **Bibliography and References Cited (no page limit)**
   All work cited in the text should be referenced in this section of the proposal. All reference must be complete, including titles and all co-authors: must conform to an acceptable journal format; and be listed in alphabetical order using the last name of the first author or listed in the order of citation.

**Examination Procedure:**
- The research proposal and this section of Food Science Graduate Student Handbook (Doctoral Preliminary Written Examination in Food Science) are to be given by the student to each of the members of the student’s Examining Committee.
At this same time these same documents and a list of the members of the Examining Committee must be given to the DGS (see below for contact information). The DGS will contact committee members to answer any questions about the procedures and confirm that they will be able to evaluate it within the appropriate timeline. If not, the DGS will work with the student to find an alternate examiner.

--The evaluation is to be completed within 30 calendar days of receiving the proposal. If this time line cannot be met by a committee member, she/he must inform the student and the DGS immediately. The DGS, in consultation with the student and the student’s adviser will select a replacement committee member who is able to complete the evaluation within 30 days.

-Each committee member will read the proposal, evaluate it and issue a score of either SATISFACTORY or NOT SATISFACTORY and email their score to the DGS and the Associate DGS. Three weeks after the exam was delivered to the committee members the DGS will contact any committee member who has not yet submitted their evaluation to determine whether or not they will be able to complete it within the required 30 days. If committee members cannot complete the evaluation within 30 days, the DGS, in consultation with the student and the student’s adviser will select replacement committee member(s). Those new committee member(s) will have 30 days in which to complete their evaluation. If a committee member’s evaluation has not been received by 30 day deadline, the DGS will assign a grade from that committee member as Satisfactory.

-If all members of the committee deem the proposal SATISFACTORY the student will have passed the Preliminary Written Examination and the result will be reported to the Graduate School, the committee, the advisor and the student ASAP.

-If any “NOT SATISFACTORY” evaluations are given, the Examining Committee will be convened by the student’s advisor to discuss the reason(s) for the “NOT SATISFACTORY” evaluation(s). At the end of the committee’s discussion the committee will cast a final written ballot.

-Following the final ballot at this meeting, the student will be considered to “PASS” the Preliminary Written Examination if no more than ONE Examining Committee member assigns a “NOT SATISFACTORY” grade. If a “Pass” is the result of the meeting, the advisor will communicate this to the DGS and the result will be sent to the Graduate School. Also, the advisor is responsible for immediately notifying the student of the “PASS.”

-If, however, TWO or more Examining Committee members assign a “NOT SATISFACTORY” grade, a letter stating the concerns of the committee must be drafted by the committee chair (the adviser) and circulated to the other members of the committee for their approval prior to sending it to the student. The DGS must be copied on this letter.

-Upon receipt of the letter the student must submit, to each member of the committee, a revised proposal within 30 calendar days of the date of the letter from the committee.

-Along with a revised proposal, the student must also submit a letter documenting how each of the points raised by the Committee members in their letter was addressed. (The student is encouraged to contact each of the Committee members during this period to get their feedback.)

– If the student does not submit a revised proposal and response to the points raised by the committee within the 30 day time limit, the student will Fail the Preliminary Written Examination. A notice of this will immediately be sent by the DGS Assistant to the Graduate School.

-Based on the final proposal and letter received within the 30 day requirement, each Examining Committee member must submit a second and final grade (within 30 calendar days) to the DGS, Associate DGS and DGS Assistant (see above for email addresses).

-Based on these grades, the student will be considered to pass the Preliminary Written Examination if no more than ONE Examining Committee member assigns a “NOT SATISFACTORY” grade.

-If the student obtains TWO or more “NOT SATISFACTORY” grades on the final proposal, he/she will be considered to have “FAILED” the Preliminary Written Examination and will be dismissed from the Food Science Ph.D. program.

-The final vote of the Examining Committee will be filed by the DGS Assistant with the Graduate School and each committee member including the adviser will be notified of the final vote. The adviser will be responsible for notifying the student.

Doctoral Preliminary Oral Examination
The preliminary oral examination is conducted as a closed examination, attended by only the student and the examining committee

At least one full academic semester before the degree is conferred, a preliminary oral examination of the student shall be given by a committee suggested by the student in consultation with the advisor and approved by the Graduate Studies Committee and Graduate School. This examination may not be taken until the written examination has been satisfactorily completed and until the student has completed most of the course work on their Degree Plan (i.e. 3 credits or less remaining).

Purpose of the examination:
1) It is a requirement of the Graduate School
2) To evaluate the student’s knowledge in food science
3) Evaluate the readiness of the student to conduct independent research

The student will give an oral presentation of the thesis plan in the examination not to exceed 15 minutes if given uninterrupted. This will form the basis for the research component of the examination.
The Examining Committee will report the results of the preliminary oral examination to the GSSP Office. If the Committee decides that a student passed the examination with reservations, it must inform the student immediately. The Committee has one week, however, to send the student a letter that clearly stipulates the reservations and the steps required to remove them. A copy of this letter must be forwarded to the GSSP Office. A second letter informing the student that the reservations have been satisfied is also required; again, a copy must be forwarded to the GSSP Office. The Chair of the Preliminary Oral Examination Committee should write both letters on the Committee’s behalf. The final oral examination cannot be scheduled until the Graduate School receives a copy of the second letter.

Publication Requirement

Before the student schedules the final oral examination, they will submit a first authored, peer reviewed paper on their doctoral research, in a journal pertinent to their research discipline (published or accepted for publication) to the graduate studies committee. Upon confirmation from the DGS that the publication requirement has been met the student can proceed with the final thesis defense.

Doctoral Final Oral Examination

Committee Selection

The student, after consulting with their advisor, will choose his/her Final Oral Examination Committee. The Committee will consist of individuals on the graduate faculty of the University of Minnesota who have familiarity with the thesis subject area. The faculty suggested must have been contacted in advance by the graduate student to insure their willingness to participate (if selected) in the student's examination. Committee assignments and updates are initiated by the student via an online request form at least one month prior to the examination. To request or update your examination committee and for further information about committee rules and membership see this link: https://onestop.umn.edu/academics/examination-committees

The doctoral preliminary written and oral committee must consist of at least five members, including the advisor/s. All members of the committee and the candidate must participate in the preliminary oral examination. Committee members and/or the student may participate remotely as long as all conditions for remote participation in the examination are met. See http://www.policy.umn.edu/Policies/Education/Education/DOCTORALPERFORMANCE_APPA.html

- At least three members (including the advisor) must be from the student's major field.
- At least two members must represent a field outside the major
- If the student has declared a minor, at least one member must represent the minor field.
- Members cannot satisfy the requirement with respect to more than one field.

If the student is being coadvised and both advisors are serving on the Examining Committee, an additional committee member will be added to the Committee.

Doctoral Final Examination Procedure

The doctoral final oral examination must include:
- A public presentation of the candidate's dissertation to the doctoral final oral examination committee and the invited scholarly community. (1 hour)
- A closed session (open only to the doctoral final oral examination committee and the candidate) immediately following the public presentation. (2 hours)

To be recommended for the award of the doctoral degree, all committee members, or all committee members save one, must certify that the student has passed the doctoral final oral examination. Students are not allowed to retake the final oral examination.

Submission of the Doctoral Dissertation

All students who complete a doctoral dissertation must file a digital copy of the dissertation with the University in accordance with University standards. Students may request that the University embargo publication of the dissertation for a limited period of time. For thesis formatting and submission guidelines see: https://onestop.umn.edu/academics/thesisdissertation-submission-and-formatting%20

Benchmarks for Food Science Ph.D. Degree Program

This is a list of benchmarks for a timely graduation. Students should meet with their advisor to convert the benchmarks into specific goals for their degree program. For the Ph.D. program, each student is required to be a Teaching Assistant in three classes.

First Semester
1. Complete required safety training. For further information, contact FScN Department Safety Coordinator.
2. With assistance from advisor, determine course selection and selection of a research project.
5. Begin thesis research.

Second Semester
1. Continue coursework.
2. Continue thesis research.
3. Fulfill first T.A. responsibility.
4. Work on literature review.

Summer following First Year
1. Continue thesis research.
2. Prepare final draft of literature review.

Third Semester
1. Continue coursework.
2. Continue thesis research.
3. Fulfill 2nd T.A. responsibility.
4. Submit Degree Plan into GPAS and Assign members to Written and Oral Preliminary Exam Committee
5. Submit abstract for presentation at national/international meeting.

Fourth Semester
1. Complete coursework.
2. Continue thesis research.
3. Take Written preliminary Exam
4. Take Oral Preliminary Exam after passing Written Preliminary Exam.
5. Begin writing publication(s).

Summer following Second Year
1. Continue thesis research.

Fifth Semester
1. Continue thesis research.
2. Fulfill 3rd T.A. responsibility.
3. Submit abstract for presentation at national/international meeting.

Sixth Semester
2. Assign members to Final Exam Committee (must be resubmitted even if committee has not changed).
3. Begin writing publication(s)/thesis.
4. Present research at Graduate Seminar

Important Deadlines for Ph.D. Degree Completion
1. Register every fall and spring semester until your degree is awarded.
2. Turn in Annual Student Progress Report in March every year.
3. Submit Graduate Degree Plan into GPAS and at least one semester prior to Preliminary Oral Exam.
4. Assign members to Preliminary Oral Exam Committee at least one month prior to exam.
5. Complete Preliminary Written Exam.
6. Schedule Preliminary Oral Exam at least one week in advance
8. Assign members to doctoral Final Exam committee at least one month prior to exam.
9. Request Graduation Packet up to one semester before Final Exam.
10. Notify DGS that you have completed the publication requirement for the Ph.D.
11. Schedule Final Exam. Notify the advisor and other members of the Final Examination committee at least two weeks in advance that the thesis or Plan B project will be delivered on a particular date. All Examining Committee members must have at least two weeks to read the thesis or Plan B project after it has been delivered.
12. Submit Graduate Application for Degree the first business day of anticipated month of graduation.
13. Obtain committee signatures on the Reviewer’s Report prior to the final exam.
14. Submit Final Examination Report and Reviewer’s Report to GSSP no later than the last business day of anticipated month of graduation.
15. After final exam, make corrections or revisions to the thesis. Submit thesis to GSSP Office and submit one bound copy of the thesis to FScN Student Services in 225J FScN.
17. Students are encouraged to schedule an exit interview with the Department Head.

For links to the forms needed for these degree completion steps see:
Doctoral Degree Completion Steps https://assets.asr.umn.edu/files/gssp/otr204g_Doctoral_Philosophy_Education_GPAS.pdf
Food Science Graduate Degree Plan Worksheet
https://fscn.cfans.umn.edu/graduate-programs/student-forms

Time Limit for Earning the Doctoral Degree
All requirements for the doctoral degree must be completed and the degree awarded within eight calendar years after initial enrollment to the graduate program. Students who are unable to complete the degree within the time limits described above may petition the program
and collegiate unit for one extension of up to 24 months. Students must obtain the approval of their advisor/s and program DGS and submit the petition for an extension at least six months prior to the end of the time limit. If a petition is approved, the student is notified in writing of the expectations for progress and of the month/year of degree conferral. If the petition is denied, the student is notified in writing that he or she will be terminated from doctoral candidacy and from the graduate program upon expiration of the time limit. Under extraordinary circumstances, students may file a second petition for an additional 24 month extension after the first 24 months have expired; however such petitions after the initial extension must be reviewed and approved by the advisor/s, program DGS, and Vice Provost and Dean of Graduate Education. Students who have been terminated under such circumstances may apply for readmission to the program; however, readmission is not guaranteed. For a petition form see https://onestop.umn.edu/sites/onestop.umn.edu/files/forms/um1777_doctoral_time_extension_request_form.pdf

Miscellaneous

Orientation
There is a fall semester graduate student orientation usually held the second week of classes. There is also an open door policy on the part of the DGS.

Payment of Student Travel to Scientific Meetings
The major criteria for funding any student meeting travel are participation in the meeting by delivering and (co)authoring a paper or doing something else of equivalent weight. If this requirement is met and project funds are available, travel expenses may be funded on the basis of the lowest airfare, actual registration cost, room cost at lowest student rate, and a Department set meal allowance. Availability of funds is always a criterion whether explicitly stated or not and project leaders are free to set lower amounts. Where the above concepts of student travel limitation and of an activity requirement are maintained, variations that are within the spirit or intent in terms of amount expended may be introduced, in recognition of particular circumstances (e.g., some meetings within driving distance, others not; sharing auto transportation to reduce cost and allow others to attend who might not otherwise qualify, etc.). The rationale for such variations must be communicated to and approved by the Department Head prior to any travel commitment being made or any travel document prepared.

Travel Fellowships
Funds may be available through the Graduate Studies Committee to award some travel fellowships to graduate students in the Food Science Program. The grant will not cover all of the expenses and current policy is that the student should be presenting a paper. If the student desires support, he/she will submit the form located on here under Graduate Travel Award Application: https://fscn.cfans.umn.edu/graduate-programs/student-forms

Contact Information / Resources

Director of Graduate Studies in Food Science
Dr. Joellen Feirtag
ifeirtag@umn.edu 612-624-3629 242 A B L M S, St. Paul campus Ph: 612.624.3629

Graduate Student Services
Nancy Toedt ntoedt@umn.edu or fscngrad@umn.edu 225J FScN, St. Paul campus Ph: 612.624.6753

Department of Food Science and Nutrition fscn.cfans.umn.edu
Sue Winkelman
Executive Administrative Specialist – general department information, keys, meeting room scheduling swinkelma@umn.edu 225A FScN, St. Paul campus Ph: 612.624.1290

Dorit Hafner
Administrative Director hafne005@umn.edu FScN 225C Ph: 612-624-4789

Undergraduate Student Services
Sara Cannon scannon@umn.edu Ph: 612.624.4787
Permission numbers, Independent Study, Course/classroom scheduling

Accounting Office:
Jackie Lee, Principal Accountant - budgetary matters leexx079@umn.edu 330 Haecker Hall Ph:612.624.3440

Sue Merrin, Accountant - payroll and health insurance smerrin@umn.edu 225A FScN St. Paul campus Ph: 612.624.4289

Graduate Student Services and Progress Office gssp@umn.edu
www.grad.umn.edu

International Student and Scholar Services www.isss.umn.edu
190 Hubert H. Humphrey Center, Minneapolis campus Ph: 612.626.7100
Opportunities for Student Involvement

- Student Representative for Food Science faculty meetings. See DGS if interested.
  - COGS [http://www.cogs.umn.edu/](http://www.cogs.umn.edu/)

Mutual Rights and Responsibilities of Faculty and Graduate Students: Guidelines
[http://www.policy.umn.edu/Policies/Education/Education/DOCTORALPERFORMANCE_APPD.html](http://www.policy.umn.edu/Policies/Education/Education/DOCTORALPERFORMANCE_APPD.html)


Office for Student Conduct and Academic Integrity [http://www.oscai.umn.edu/](http://www.oscai.umn.edu/)

Student Conflict Resolution Center [http://www.sos.umn.edu/](http://www.sos.umn.edu/)

Managing Nepotism and Personal Relationships [https://policy.umn.edu/hr/workplacelrelaionships](https://policy.umn.edu/hr/workplacelrelaionships)

FERPA regulations [http://asr.umn.edu/training-and-support/ferpa-resources](http://asr.umn.edu/training-and-support/ferpa-resources)
Introduction and Rationale
Graduate education is more than just taking courses, passing milestones and doing research for a thesis. One significant component of graduate education is graduate student participation in the educational endeavors of the Department of Food Science and Nutrition by acting as a Teaching Assistant (TA) in undergraduate courses. These experiences are invaluable for learning how to deal with people in meaningful ways and when confronted with difficult situations. The Department intends that serving as a TA will provide valuable educational benefits to graduate students. Graduate students should consider this experience as a way to improve their teaching and communication skills and as their contribution to the educational endeavors of the Department.

The TA Oversight and Assignment Committee is composed of the Directors of Graduate Studies (DGS) (Nutrition and Food Science), Undergraduate Program Chairs (Nutrition and Food Science), Student Services Coordinator, Undergraduate and Graduate Program Coordinators, and 2 graduate student representatives (1 each from Nutrition and Food Science). This committee (excluding the graduate student representatives) will meet to consider faculty and student requests for unpaid and paid TAs and to match available graduate students with the requests and available resources. This committee will also meet as needed to address other issues that arise regarding TA experiences. Graduate student representatives will serve for one term (one academic year). New representatives will be appointed by the DGS for each discipline in the fall of the academic year.

Unpaid and Paid TA Requirements
In this TA system, students either volunteer their time as a Teaching Assistant (unpaid TA) or are paid for their time as a TA (paid TA). Minimum requirements for the number of TA experiences are the same for unpaid and paid TAs, but the expectations for time are different based on whether the TA experience is unpaid or paid.

Each graduate student is required to complete 1 TA experience for each year they are in a graduate program up to a minimum of 2 TA experiences for an M.S. student and a minimum of 3 TA experiences for a Ph.D. student. Integrated BS-MS students are expected to complete 1 TA experience after completing their BS degree. A student completing both M.S. and Ph.D. degrees at the University of Minnesota would serve a minimum of 4 TA experiences for both degrees combined. A student who begins as an M.S. student and changes status to the Ph.D. without completing the M.S. would serve a minimum of 3 TA experiences.

All students are expected to meet the TA requirement as outlined for degree type. In situations where the student is working full time outside of the Department or where TA requirements present personal hardship, alternatives will be presented for meeting this requirement. Alternatives might include developing laboratories, giving guest lectures, grading papers and assignments, or developing course materials for Internet delivery. Students may submit a Contract for Alternative TA Experience to the Director of Graduate Studies for his/her discipline to request an alternative TA assignment, if desired.

This policy will be included in the Nutrition and Food Science Graduate Student Handbooks available on the FScN Department website. The Graduate Program Coordinator will also send a copy of this policy by email to all graduate students at the beginning of each semester.

Unpaid TA Experience
For unpaid TA experiences, each student will spend about 4 hours per week for a given class or 60 hours per course/semester. A graduate student may request that he/she contribute double this, about 8 hours per week or 120 hours per course/semester, to get 2 instead of 1 unpaid TA experiences per course. This request will be granted when it is consistent with course needs.

Paid TA Experience
A TA appointment is for 19.5 weeks per semester. Appointments are from late August to early January during fall term and early January to late May in the spring term. The exact dates will vary slightly from year to year and will be outlined in your appointment letter. The following outlines the effort expected for students holding a paid TA position per semester:

- 12.5% time = 5 hours per week for 19.5 weeks for a total of 97.5 hours per semester
- 25% time = 10 hours per week for 19.5 weeks for a total of 195 hours per semester
- 37.5% time = 15 hours per week for 19.5 weeks for a total of 292.5 hours per semester
- 50% time = 20 hours per week for 19.5 weeks for a total of 390 hours per semester

A student holding a paid TA position for 1 semester will be credited with 1 TA experience.

Total compensation for a TA appointment is based on a 19.5 week time period. TAs are expected to be available to assist instructors from the first day of the appointment through the last. Effort will vary from week to week, but at the end of the appointment the TA is expected to have worked the total hours they are compensated for. TA’s are not expected to work more hours or fewer hours than their appointment specifies over the course over the period of the appointment term.

Expectations
Expectations vary depending on the nature of the class, paid vs. unpaid appointment, and/or percent paid appointment. Each instructor will provide the TA(s) an itemized list of expectations at the beginning of the semester along with estimated time commitment for each task. Tasks may include (and are not limited to) grading assignments and exams, preparing for and conducting laboratory sessions, holding office hours and discussion sessions, attending lectures, giving guest lectures, and developing materials. Each TA is generally expected to attend the lectures for the class they are assigned. Attendance at lectures is considered necessary to provide meaningful help in the class. There

Appendix A
Food Science Teaching Assistant Requirements
FScN Department TA Policy Draft (Revised 4-5-17 waiting for final faculty approval)
are some classes or situations where lecture attendance may not be required; however, this decision rests with the course instructor.

Assignments
Faculty wishing to have a paid and/or unpaid TA must submit a TA request form to the TA Oversight and Assignment Committee by March 1 of the preceding academic year using the Instructor TA Request Form. Graduate students may request to assist in a specific course by completing the Student TA Request Form. The TA committee will try to accommodate all requests, but cannot guarantee specific placement. TA assignments will be made by the TA Oversight and Assignment Committee based on a formula to determine TA hours needed, student and instructor requests, and the amount of funding available for TA hours/positions. The Committee will make recommendations to course instructors regarding student assignments. Course instructors will approve the assignment in writing by sending an email to the Committee.

University policy requires that nonnative English speaking paid TAs provide TOEFL scores or take the SETTA test upon arriving at the University. Results from these exams will determine a student’s eligibility for a paid TA assignment. All new TAs are expected to participate in training as directed by course instructors and teaching workshops offered through the Department and University. More information about TA eligibility and teaching workshops can be found here: https://cei.umn.edu/courses-programs/international-teaching-assistant-program/testing-eligibility

Tracking Hours Worked During TA Experiences
Students should keep an accurate accounting of their time and activities, and time per activity per week, review this with the course instructor on a regular basis, and submit to the TA Oversight and Assignment Committee at the end of the semester. A tracking form will be used to account for hours worked. The TA(s) and course instructors will agree on an appropriate tracking form given the expectations for the specific course at the beginning of the semester. The form will be completed throughout the semester by the TA(s) and submitted to the Committee at the end of the semester.

If the time required from an individual graduate student is different from what has been estimated, the nature of the work is different from that promised, or any other TA-related conflicts arise, the student should first attempt to resolve the discrepancy as soon as possible with the course instructor. If that fails, the student should bring the issue to the Director of Graduate Studies who will work together with the TA Oversight and Assignment Committee, the student, the course instructor, and Department Head to correct the situation. If an issue arises regarding TA performance, the course instructor should bring the issue to the Director of Graduate Studies who will work together with the TA Oversight and Assignment Committee to correct the situation. If a TA fails to complete tasks according to the responsibilities outlined for the TA experience, he or she may need to complete another TA experience.

When issues regarding TA experiences arise, students or course instructors should send a description of the issue to the DGS by email. The DGS will call an ad hoc meeting of the TA Oversight and Assignment Committee to address the issue.

Evaluation of TA Experiences
Graduate student performance as TAs will be evaluated by the course instructor using the Instructor Evaluation of TA Performance form. TAs can request evaluation of their performance from students in the course as a part of the required student course evaluation. After completing their work as a TA, students will be asked to evaluate their experience using the Student TA Evaluation form provided to them at the start of the semester. These evaluations of student experiences and performance will be used to monitor the system and improve the experience for future TAs.

TA Oversight and Assignment Committee, April 2017
Appendix B

Policy and Practices Relating to Research Assistants and Paid Teaching Assistants

Selection
Notification of selection as a graduate Research and Teaching Assistant is by letter from the Head of the Department. Any assistantship still in effect at the end of the semester in which the student completes all requirements for the degree sought terminates automatically unless specifically reappointed in accordance with the provisions relative to shifting to a Ph.D. program.

Reappointment
All criteria used for the initial appointment are utilized to evaluate reappointment on a regular basis. The Department may elect not to reappoint a RA/TA for the next term of appointment on the basis of its evaluation of performance of the duties of the position, the student’s progress toward the degree, or budgetary constraints. Each RA/TA will receive notification by mid-July renewing his or her appointment as an RA for the academic year or for the next fiscal year. The renewal normally is in the same format as the notification of original appointment.

Responsibilities of the Graduate Student
Each appointment or reappointment to a graduate research assistantship carries responsibilities and activities that will be defined by and regulated by the project principal investigator or faculty advisor. The advisor should identify the source of funds to the RA. Whenever continuation involves a shift from M.S. to Ph.D. it should be emphasized that such continuation is contingent upon adequate research performance, satisfactory academic performance in graduate studies, and formal approval of a change in degree objective. Without such performance and approval, appointment to the assistantship will be terminated.

Relationship to the Department
The relationship of the graduate student to departmental and college governance is defined in the constitutions of the colleges, and graduate student representation at faculty meetings is defined in the departmental guidelines.

Student Rights
A graduate Research Assistant who is discharged prior to appointment termination, or is disciplined in any way, is entitled to a written explanation of the cause and of her/his avenues of appeal. Graduate Assistants are held responsible only for actions relating to or affecting their academic duties, and in appeal cases, assistants will be continued on salary until final decision.

Grievances
If there is a potential grievance, the student should first attempt resolution working with the advisor, second with the Director of Graduate Studies and third, with the Department Head. If the problem remains unresolved, the student should contact the Graduate Assistant Office. Graduate students with employment grievances are covered by the Regent's University Grievance Policy. For more information see www.umn.edu/conflictresolution
Appendix C

Food Science Graduate Committees/Officers

Director of Graduate Studies
Generally DGS terms are two years in length, with an option for term renewal. Elections are held in the spring for the following academic year. The Director of Graduate Studies (DGS) shall supervise and coordinate the administration of graduate studies within the graduate program or programs for which he/she is responsible. He/she shall perform such duties in the administration of graduate studies as the faculty of the graduate program may assign, normally including such functions as arranging for the review of graduate admissions, orienting and counseling graduate students with respect to program and degree requirements until they choose graduate advisors, assisting graduate students in choosing advisors, enforcing the regulations of the Graduate School and of the degree programs, receiving and arranging for review of petitions submitted by graduate students, maintaining graduate student records, initiating and providing data for evaluations of graduate students, referring to the graduate faculty in the degree program or to a committee on graduate admissions or graduate studies any of the matters which may require its attention and providing it with information or data it may need and providing guidance and information needed by graduate advisors in the degree programs. The DGS also serves as the programs representative to the Biological Sciences Policy and Review Committee of the Graduate School.

Associate DGS
The DGS is elected to a two-year term by the graduate faculty in Food Science. Associate DGS will serve as DGS when DGS is absent from campus. Associate DGS maybe past DGS or DGS elect. The DGS elect is elected by the program faculty no later than six months prior to the completion of the second year term of DGS.

Graduate Advisors
Each graduate student must secure the assistance and counsel of a graduate advisor who is a member of the graduate faculty of the program in which he/she is pursuing studies. When appropriate, one advisor may counsel the student during the period of graduate coursework, and another may supervise the student’s thesis or dissertation research; the latter shall have special competency in the area of the student’s concentration. Students may obtain help from the Director of Graduate Studies in identifying appropriate advisors or changing advisors. The provision of an advisor for each student is the responsibility of the faculty of the program. However, the individual advisor-advisee relationship rests upon mutual agreement. The advisor (a) shall assist the student in formulating a program of study and research, and his recommendation must accompany the program submitted; (b) shall review and attach a recommendation to any petition the student may make with respect to graduate status or requesting a waiver of normal requirements affecting graduate studies, examinations, or research; (c) shall direct the student’s research for and writing of any graduate thesis or dissertation; (d) from time to time shall provide the student with evaluations of academic progress. The advisor should normally be a member of the student’s committees for approval of dissertation and final oral examinations, and shall be responsible for having the reports signed by the members of the Examination Committee and returned to the Graduate School. In the discharge of these functions the graduate advisor is responsible to the faculty of the program and to the Dean of the Graduate School.

Graduate Studies Committee
The Graduate Studies Committee shall implement the wishes of the graduate faculty in Food Science on all aspects of evaluation of applicants for admission to the program and on the approval of graduate student programs, thesis titles and abstracts, petitions, and associated matters. Activities not explicitly identified with other standing committees of the Food Science Graduate Program also would be a responsibility of this Committee. The Committee shall be made up of the Director of Graduate Study (Chair), the Associate Director of Graduate Study, the Affirmative Action Officer for the program, and the Chair of the Quality Control Committee. The Graduate Faculty of Food Science may add other individuals to the Graduate Studies Committee or modify the Committee by an appropriate motion at a regular graduate faculty meeting.

GOVERNANCE: OFFICERS, COMMITTEES AND STUDENT REPRESENTATIVES

Food Science Graduate Program Committee Members as of January 27, 2017
Director of Graduate Studies: Dr. Joellen Feirtag

Graduate Studies Committee: David E. Smith, Gary Reineccius, Tonya Schoenfuss
Appendix D

List of Food Science Graduate Faculty
https://fscn.cfans.umn.edu/faculty-staff/faculty/food-science-faculty

Graduate Faculty Membership Categories and Responsibilities
https://netfiles.umn.edu/cfans/Intranet/Grad/Process/CFANS_Grad_Faculty_Status.pdf?uniq=-yw85ww

Criteria for Maintaining Membership on the Food Science Graduate Faculty
The Food Science graduate member contributions will be reviewed by the Food Science Graduate Program Quality Control Committee every three years. This Committee will forward its recommendations to the DGS for a full graduate faculty vote on continuation or termination of membership for each member. Senior Members, Advising Members, or Members must satisfy at least one requirement in each of the four categories listed under section I in the three-year period under review. Affiliate Senior Members, Affiliate Advising Members, or Affiliate Members must satisfy at least one requirement in two of the three categories (Seminar, Teaching, and Research) listed under section I in the three-year period under review. It will be the responsibility of each graduate faculty member to communicate in writing his or her contributions, with documentation, to the DGS at the time of the review.

Section I. Participation in Food Science Graduate Program Activities
-Seminar
  Present a seminar at the Food Science graduate seminar series
  Regularly attend the Food Science graduate seminar series or special Food Science Graduate Program seminars
  Invite and host an outside speaker sponsored by the Food Science Graduate Program
-Governance
  Regularly attend Food Science graduate faculty meetings
  Serve on a Food Science Graduate Program committee
-Teaching
  Coordinate or co-coordinate Food Science graduate seminar series
  Write a question for the Ph.D. written prelim and grade the responses
  Teach or co-teach a food science course (FScN designation) for graduate credit
-Research
  Serve on examination committees for Food Science M.S. or Ph.D. students
  Advise Food Science M.S. or Ph.D. students
  Contribute to writing a successful grant to support a Food Science graduate student
  Publish at least 2 peer-reviewed research/review papers in field of Food Science

Section II.

I no longer wish to remain a member of the Food Science Graduate Program.

Signed: ______________________________ Date: ________________
CFANS Best Advising Practices for Graduate Student Success

CFANS wants graduate students to be successful and recommends the following Best Practices for graduate students and their advisers. Please contact your graduate program office for requirements specific to your program.

<table>
<thead>
<tr>
<th>Best practice</th>
<th>Student's and adviser's joint responsibility</th>
<th>Adviser's responsibility</th>
<th>Student's responsibility</th>
</tr>
</thead>
</table>
| Establish milestones for academic and research progress | • Within 60 days: Discuss and agree upon milestones to track student progress  
• By 2nd semester for M.S. student and no later than 2nd year for Ph.D. student: Establish advisory and/or exam committee(s) (program dependent) and develop a course work plan  
• Annually: Document and review student progress | • Communicate expectations with respect to independence, and how student is to function in the fairly unstructured graduate school environment  
• Clarify availability of continued funding (e.g., Assistantship or Fellowship) | • Clearly understand your own motivations for going to graduate school!  
• Seek alternative or supplemental funding, as needed  
• Consult Director of Graduate Studies (DGS) or Graduate Program Coordinator (GPC) to ensure that program requirements are met on time |
| Maintain open lines of communication and provide timely feedback | • Discuss an optimum meeting frequency and meet regularly  
• Establish written expectations and schedules; update as necessary as the degree program progresses, or with changing circumstances | • Comment on student's work (reports, draft posters, seminar presentations, manuscripts, etc.) within 30 days  
• Communicate developments that may impact time to degree (e.g., planned absences or sabbaticals, or termination of funding) | • Submit progress reports, draft posters or seminar presentations, manuscripts, thesis drafts and other research work in a timely manner  
• Inform adviser of changes in schedule, including any paid or unpaid leave  
• Seek help from adviser or from other sources |
| Understand the terms and conditions of Graduate Assistant employment | • Ensure that offer letters and terms of employment are understood  
• Comply with business practices of the department | • Understand graduate student rights (see next page)  
• Provide a safe work environment free from intimidation, humiliation, or harassment | • Complete any required training (e.g., safety, responsible conduct of research, ethics) in a timely manner |
| Develop research ideas and graduate student career goals | • Agree on the scope and sequence of thesis research (thesis proposal) and engage at all stages  
• Clarify expectations for multiple tasks (e.g., teaching, work/life balance)  
• Develop student career goals; revisit and revise periodically | • Give constructive feedback on student's research ideas  
• Mentor students as they apply for jobs and advise on effects to their degree plan | • Keep a journal of research ideas and activities  
• Seek professional development opportunities |
| Connect with the larger campus and professional community | • Recognize and respect cultural differences  
• Seek opportunities for leadership and professional development skills such as: public speaking, research ethics, working across differences, collaboration, conflict resolution and data management | • Help students network with colleagues at other institutions  
• Support student participation in scientific conferences, campus seminars and on committees within the U of M and CFANS | • Attend campus seminars and events  
• Serve on committees within the U of M and CFANS  
• Participate in graduate student orientation and recruitment activities  
• Participate in scientific conferences (find...
Graduate Student Rights

- An academic environment that is free from intimidation, humiliation, and harassment
- Working within the number of hours appropriate for your appointed position
  - The standard 50% assistantship requires an average of 20 hours of work per week at the discretion of the faculty advisor when school is in session (U.S. Department of Homeland Security, UMN Graduate Assistant Employment Policy - policy.umn.edu/hr/gradstudentemployment and policy.umn.edu/hr/gradstudentemployment-appg). This work requirement is in addition to time spent on coursework and/or thesis work.
- Timely review and return of manuscripts and thesis drafts (i.e., 30 days)
- Paid and unpaid leaves (i.e. parental, holiday, sick, bereavement, military, court appearance, jury duty, voting) (Policy: http://policy.umn.edu/sites/policy.umn.edu/files/appendix/gradstudentemployment_appf.pdf)
- Leave of absence in emergency situations (Policy: http://policy.umn.edu/education/gradstudentleave)
- Completion of an agreed upon CFANS Scholarly Work Agreement, to resolve issues with regard to research or academic performance
- Assistance when dealing with difficult situations, without concern for retaliation or punishment

Additional Help for Students

Use available resources if you have concerns about your academics, faculty adviser, or work environment. Do not wait to seek help. In case of an emergency, call 911 or UMN Police (612-624-2677).

- Speak to your faculty advisor first if you are comfortable doing so; address problems directly and honestly.
  - To discuss a matter confidentially, please contact the Student Conflict Resolution Center.
- When you feel it is inappropriate to contact your faculty advisor, consult your Director of Graduate Studies (DGS), Program Level Coordinator (GPC), College Coordinator, or the Student Conflict Resolution Center for assistance. Use your best judgment in deciding which course of action is right for you.
- International students should consult with International Student and Scholar Services when dealing with conflicts or concerns.

Counseling and Mental Health Services:
University Counseling and Consulting Services
http://www.mentalhealth.umn.edu/ (612) 624-3323
Boynton Mental Health Clinic
http://www.bhs.umn.edu/east-bank-clinic/mental-health-services.htm (612) 624-1444

Disability Resource Center
drc@umn.edu (612) 626-1333

Graduate Assistant Employment Services
http://www1.umn.edu/ohr/gae (612) 624-8647
Graduate Student Services and Progress (GSSP) Office
http://www.grad.umn.edu/current-students/gssp (612) 625-3490

International Student and Scholar Services
http://www.isss.umn.edu/ (612) 626-7100

Reference Guides
Preparing for a Difficult Conversation – http://gradvising.umn.edu/difficult-conversations.html
Resources for RAs & Supervisors – http://wbt.umn.edu/pdf/RAs%20and%20Research%20Faculty.pdf

SafeU (Safe Walk & Ride Service)
Walking Escort Service (612) 624-9255
Gopher Chauffeur (612) 388-6911

Student Conflict Resolution Center
http://www.sos.umn.edu/ (612) 624-7272

Office of Equal Opportunity and Affirmative Action (612) 624-9547
https://diversity.umn.edu/eoaa/