School of Food Science

Graduate Student Handbook

Prepared and updated by Graduate Curriculum Committee

Updated January, 2023

WELCOME FROM THE DIRECTOR

Welcome to the School of Food Science!

The SFS Graduate Curriculum Committee has developed a manual to help you have a rewarding graduate student experience in the School of Food Science. This manual supplements the WSU Graduate School documents on policies and procedures you will need to consult during your graduate studies at Washington State University. I encourage you to read and familiarize yourself with these guidelines to help ensure that your graduate study is a positive experience. Certain policies help maintain a high-quality graduate program in Food Science, but you play the most important role in determining the depth and quality of your training. The graduate study allows you to become fully immersed in a discipline and experience a growing professional awareness and confidence. Many students form lasting personal and professional relationships during this time.

The School of Food Science supports you in your pursuit of scholastic excellence and welcomes the opportunity to be partners with you during your graduate studies and beyond.

Sincerely,

Dr. Soo-Yeun Lee, Director
School of Food Science
Washington State University

TABLE OF CONTENTS

INTRODUCTION

SFS GRADUATE PROGRAM ADMINISTRATION

The administration of the SFS Graduate Program is vested in the SFS Director Graduate Program Director with advice from the SFS Graduate Affairs Committee (GAC) which supports and conducts many functions of the SFS Graduate Program.

The SFS Graduate Program is governed by official bylaws, approved by the Graduate Faculty in the School of Food Science, the WSU Graduate School, and the WSU Faculty Senate and are published on the SFS website. The SFS bylaws define the qualifications for membership on the SFS Graduate Faculty, administration of the SFS Graduate Program, composition of graduate student committees, and participation of SFS graduate students in the administration of the SFS Graduate Program. In addition, the College of Agricultural, Human, and Natural Resource Sciences (CAHNRS) Academic Programs Graduate Center team provides Graduate Academic Coordinator support to assist with administration of the SFS Graduate Program.

Graduate Program Director:
Dr. Soo-Yeun Lee, Director, School of Food Science

Graduate Affairs Committee (GAC) 2022-23:
Dr. Meijun Zhu (Chair), Dr. Charles Edwards, Dr. Minto Michael, Dr. Carolyn Ross, Dr. Thuy Bernhard. *Ex officio: Debra Marsh.*

Graduate Academic Coordinators (CAHNRS Graduate Center):

Debra Marsh
(SFS general student support)
509-335-2615
Hulbert Hall 213 Office Hours: Mon-Thurs 8am-Noon
Remote: Afternoons and Fridays
marshdj@wsu.edu

Lisa Lujan
509-335-9542
llujan@wsu.edu

Jill Staab
509-335-0691
jill.staab@wsu.edu

CAHNRS Graduate Center
PO Box 646423
Pullman, WA 99164-6423 USA

STANDARDS OF CONDUCT

Plagiarism and misconduct in research will NOT be tolerated. Students failing to follow standards of conduct dictated by the Center for Community Standards may face dismissal from Washington State University (WSU). If you are not sure what constitutes plagiarism, consult the WSU Plagiarism Information site. If you are unsure what constitutes academic integrity, please review the Academic Integrity Policy. Related, all graduate students are required to complete the web-based CITI Responsible Conduct of Research and Conflict of Interest trainings upon admission.

PROGRAM OUTCOMES

The School of Food Science requires all graduate students to demonstrate satisfactory progress by completing required coursework; conducting original research; presenting research findings both orally and in writing; and demonstrating satisfactory defense of their research.

A graduate with an advanced degree in food science will be expected to:

1. Demonstrate a fundamental understanding of food science knowledge and principles;
2. Identify, comprehend, and analyze key research issues, needs and trends central to the field of food science;
3. Utilize, apply and manage acquired scientific knowledge to assess and solve real-world issues, needs, and problems within the field;
4. Exhibit oral and written communication skills needed to accurately and efficiently convey technical information and defend scientific findings in both scientific and lay settings;
5. Appropriately design and conduct research experiments, and objectively analyze, interpret, organize, and evaluate research findings;
6. Contribute towards an effective learning environment in formal and informal teaching settings;
7. Work within a team setting and provide leadership to integrated groups of individuals to achieve a common goal.

DEGREE OPTIONS

Master of Science (MS) Thesis Option

The School of Food Science (SFS) offers a program of study leading to the Master of Science (Thesis) degree in Food Science. Because research is an integral part of science, most students complete the thesis degree program. The thesis describes a research project conducted by the student. The thesis typically has three sections: a background or literature review that sets the

stage for the research; a section with one or more chapters describing the actual research and containing data and analysis; and a general conclusion. Each of these parts may be contained within each chapter of the thesis when the chapter is formatted as a publication. The thesis should be formatted in a style that is consistent throughout, according to Graduate School guidelines. The final exam is in two parts. The first is a seminar presenting the results of research project. This is a public presentation. The second part is an oral exam that focuses on defense of the research project.

Doctor of Philosophy (PhD)

The PhD degree is awarded in recognition of excellence in scholarship and for making an original contribution to the advancement of science in one's field. The degree is awarded for originality and creative scholarship rather than for an accumulation of academic credits. The PhD program is separated into the "initial" period preceding the preliminary examination and the "candidate" period following the preliminary examination. During the initial period, the student acquires knowledge and skills needed for his/her research program. Most of the academic program is completed during the initial period. The preliminary exam should be completed during the fourth semester of the PhD degree program. After passing the preliminary examination, the candidate concentrates on research, including original research, and preparation of the dissertation. The final oral examination should reflect that students have developed into mature scientists, which includes the ability to conceive and design research projects, to critically evaluate the literature, to gain knowledge of acceptable scientific behavior, and to think and discern outside the area of the dissertation.

EXPECTED TIMETABLE FOR DEGREES

M.S. Candidates

First Semester:	-Discuss proposed courses and research area with graduate advisor. -In consultation with advisor, select thesis/dissertation committee and ask members to serve. -Schedule a committee meeting to approve the *Program of Study* and discuss the research area. Prepare a research proposal, if applicable.
Second Semester:	-Submit *Program of Study* to the Graduate Academic Coordinator.
Third Semester:	-Schedule a committee meeting to discuss research progress. -Complete the 'Application for Degree' in myWSU (depending on progress towards degree).
Fourth Semester:	-Complete research, courses, and any other requirements. -*Schedule research seminar and thesis defense. -Schedule Exit Interview with SFS Director.

Ph.D. Candidates

First Semester:	-Discuss courses and research area with graduate advisor. -In consultation with advisor, select committee and ask members to serve.
Second Semester:	-Schedule a committee meeting to discuss the *Program of Study* and area of research.
Third Semester:	-Submit *Program of Study* to the Graduate Academic Coordinator.
Fourth Semester:	-Complete Preliminary Examinations. These examinations shall take place at the convenience of the student and the Research and Dissertation Committee for Food Science.
Semester Before Final:	-Schedule a committee meeting to discuss research progress. -Complete the 'Application for Degree' in myWSU (depending on progress towards degree).
Final Semester:	-Complete final Graduate School and SFS requirements. -Schedule research seminar and dissertation defense. -Schedule Exit Interview with SFS Director.

GRADUATE PROGRAM PROCESS

GRADUATE ADVISOR

In the letter notifying the student of admission to the program, the applicant is informed of faculty who have either accepted them as their advisee, or if multiple names, they have research interests that closely relate to his or her own. The advisor(s) is/are responsible for academic and research advising and for the provision of laboratory space and research supplies.

THESIS/DISSERTATION COMMITTEE

The thesis/dissertation committee must be chosen as soon as possible in accordance with the rules of the Graduate School and School of Food Science (SFS) requirements. Normally, the areas of expertise required to complete the desired research or project will guide committee selection. If needed, students may change their committee and/or *Program of Study* upon consultation with the advisor and/or SFS Director.

PROGRAM OF STUDY

Preparation of the *Program of Study* is the responsibility of the student in consultation with his/her advisor and the student's thesis/dissertation committee. Once approved by the student's advisor and thesis/dissertation committee, the *Program of Study* for M.S. in Food Science or Ph.D. in Food Science is submitted to the Graduate Academic Coordinator by the second semester for M.S. students and by the third semester for Ph.D. students. Specific procedures for completing your *Program of Study* are the following:

1. Bring a rough draft of proposed courses to your advisor using the *SFS Graduate Student Handbook* as a guide.

   The WSU Graduate School's transfer credit policy is detailed in full here for your review: https://gradschool.wsu.edu/chapter-six-g2/. In brief, no more than half the graded credit on a Program of Study can be transferred credit (including UI COOP coursework); credits must be 500 level (graduate) with a grade of B or better.

2. Prepare the *Program of Study* using the forms that are available from the Graduate School website under the 'Forms' link.

3. After consultation with your advisor to identify other committee members, schedule a thesis/dissertation committee meeting to review your *Program of Study* and discuss potential research areas.

4. After the thesis/dissertation committee has approved and signed the *Program of Study*, submit (email) **one** copy with committee and student signatures to the Graduate Academic Coordinator.

5. Once the *Program of Study* is reviewed by the Graduate Academic Coordinator and signed by the SFS Director, it will be submitted electronically to the Graduate School for final approval and the student will be notified of the results (in approximately 3 months from submission).

DOCTORAL PRELIMINARY EXAMS (PH.D. ONLY)

See Ph.D. degree requirements later in this handbook.

THESIS/DISSERTATION

At least one to two semesters **before** you expect to graduate, you are responsible to obtain copies of the *Dissertation and Thesis Guidelines* for WSU students and the *Deadline and Procedures for Graduation* from the Graduate School website. Studying these forms in a timely manner affords the student an opportunity to complete deficiencies, forms, and/or applications.

Do not use the format of existing theses for preparing your thesis. You may be copying mistakes and/or the rules may have changed. The following style formats are suggested by the SFS for the preparation of a thesis:

M.S./Ph.D. in Food Science – *Journal of Food Science*

The SFS allows M.S. (thesis) and encourages Ph.D. students to prepare a thesis in manuscript format, *i.e*., a publishable paper(s). Theses written in this format must contain an introduction, a comprehensive literature review, and a summary/conclusion section. If a thesis/dissertation is written in manuscript format, a minimum of 1 (M.S.) or 2 (Ph.D.) manuscripts suitable for submission to a refereed journal(s) is suggested.

The numbers and types of copies of thesis/dissertation required are as follows:

- Graduate School: A digital copy of the thesis/dissertation draft must be submitted to Proquest no less than 10 working days in advance of the exam date for formatting review by the Graduate School. Then, a digital copy of the final thesis/dissertation must be submitted to Proquest within 5 working days following your final examination.
- School of Food Science: One copy, hardbound, for placement in the SFS's Library. Submit on regular or 100% cotton paper. Include name, degree, and year on front and spine. Submit within two months after the defense date.
- Graduate Advisor/Committee: It is a courtesy to consult with your graduate advisor and also members of your committee to determine if they wish either a spiral bound or hardbound copy – or perhaps only a PDF copy. Faculty desiring a hardbound copy should reimburse the student. Include name,

degree, and year on front and spine. Submit within two months after the defense date.

SCHEDULING GRADUATE DEFENSE

1. Review the *Graduate School Academic Policies and Procedures, Digital Dissertation and Thesis Guidelines* and the *Deadlines and Procedures for Graduation*, which are available from the Graduate School's website at http://www.gradschool.wsu.edu/Forms.

2. Students **must** enroll for a minimum of two semester hours of the applicable 700 or 800 course during the final exam semester or summer session. Consult the *Graduate School Academic Policies and Procedures* for specifics.

3. **Submit your 'Application for Degree' via myWSU in the term** before final defense. You must have an approved Program of Study on file with the Graduate School and have at least a 3.0 cumulative graduate GPA to apply for graduation. This will notify the Graduate School of your intention to graduate in the specific term and will prepare a to-do list which outlines final graduation requirements, including outstanding coursework. You can find your to-do list in myWSU, usually within a couple of weeks after you submit the application. Be sure to review it closely.

   Graduation ceremonies and Commencement are in May and December. Registration is required. For specific information, check the WSU Commencement website at http://commencement.wsu.edu.

4. Submit your Final Exam scheduling form at least **ten working days** before final defense. The form is available from the 'Forms' link on the Graduate School's website. Email the completed and signed form to your Graduate Academic Coordinator who will review the details and submit the form via myWSU to the Graduate School for processing. Also at this time, you will also need to submit a pdf copy of your thesis/dissertation to Proquest; from there the Graduate School will review the thesis/dissertation for format and notify you of any required changes. Reserve the SFS Conference Room (FSHN 104A) and equipment (laptop, projector, pointer) from the SFS Front Desk for the seminar, defense, and practice times.

5. At least **ten working days** before the final defense, send a pdf copy of your final draft thesis/dissertation to the Graduate Academic Coordinator who will make this document available for public inspection and also share the document with the faculty via Sharepoint. The Graduate Academic Coordinator will also include a copy of your abstract with your final exam announcement to the department.

6. The student is responsible for furnishing refreshments and/or beverages for their final defense.

7. Within 5 working days of final examination:

   Immediately after successful examination, the student should upload their title page, abstract page(s), and BLANK signature page into myWSU for electronic routing approval by their committee. Instructions are here. The Graduate Academic Coordinator will be alerted and will initiate the routing with instructions to committee members.

   Navigate to http://www.dissertations.wsu.edu/ to upload the FINAL version of your thesis or dissertation in PDF format to ProQuest. Your signature page must be BLANK. Hold Harmless and Copyright Agreement – fill this out, sign, and then send it to gradschool@wsu.edu (include your WSU ID#) from your WSU email account; the Graduate School staff will 'witness' the form.

   Those requesting an embargo must complete the bottom of this form as well - your embargo selection must match between this form and your library submission (masters) or ProQuest (doctoral). For those using copyrighted or previously published material in the thesis/dissertation, you must provide documentation granting permission to reproduce the material in your document.

   DOCTORAL ONLY: Completed the Survey of Earned Doctorates (SED) online and submit a printed completion certificate. Email this to gradschool@wsu.edu. Include your WSU ID#.

8. Within 10 working days of final exam, complete the departmental exit requirements (exit survey, exit interview, post-graduation information, departure checklist) sent to you by the Graduate Academic Coordinator.

DEGREE REQUIREMENTS

GENERAL REQUIREMENTS

The following sections describe the specific requirements (coursework, research credits, examinations, etc.) for the M.S. in Food Science, and Ph.D. in Food Science. These requirements supplement the *Graduate School Admission Policies and Procedures*, which should also be consulted for specific rules and regulations applying to your graduate studies. If you have any questions regarding degree requirements, consult your graduate advisor or the Academic Coordinator.

Safety

Safety is an important issue within the SFS and Washington State University. As such, all new graduate students must complete the *Mandatory Completion of Training: Responsible Conduct of Research Education* at https://myresearch.wsu.edu. You are also required to attend the SFS Orientation/Safety Training session on equipment usage, safety regulations, and waste disposal procedures before being allowed to use the facilities. This session will be scheduled during the first couple of weeks in the fall semester and a CD is available for those who arrive in the spring. Before the first day you work in a lab, you will have a safety orientation with the lab supervisor or your graduate advisor to complete the *WSU Safety Checklist*.

During your graduate study, any safety concerns should be brought to the attention of the SFS Safety Committee and/or graduate advisor. You will receive electronic safety minutes from this committee to help you keep current regarding regulations. One graduate student will be asked each year to participate on this committee. You will be notified who the graduate representative is and you can also bring up any safety issues to that individual. The SFS facilities are subject to inspection at any time by the WSU's safety authorities and every attempt should be made to avoid potentially hazardous situations.

OTHER EXPECTATIONS

Assistance to Faculty and Staff

Regardless of the type of appointment, all graduate students may be asked to help with SFS tasks such as recruitment events with prospective students/parents, proctoring course examinations, participating in open houses and group tours, and or/occasional "odd" jobs.

Attending Seminars

Graduate students are expected to attend oral seminars presented in the SFS, including those given as part of FS 518, research proposals presented by Ph.D. Food Science candidates, final defenses by M.S. and Ph.D. candidates, and faculty seminars.

Expectations for Graduate Students

Graduate Students will turn in the signed and dated *Expectations for Graduate Students Document* (see Appendix) to the Graduate Academic Coordinator where it will be placed in your permanent file.

SUGGESTED COURSEWORK

These are examples and is not all inclusive of courses that could possibly be taken in pursuit of the MS or PhD in Food Science.

Food Chemistry:

FS 460 Food Chemistry (3 cr) Fall

Food Microbiology/Safety:

FS 416 Food Microbiology (3)
FS 531 Advanced Food Safety and Quality (3 cr) Spring
FS 532 Advanced Food Microbiology (3 cr) Spring

Food Processing/Engineering:

FS 432 Food Engineering (3 cr) Spring (UI COOP)
FS 433 Food Engineering Lab (1 cr) Spring
FS 529 Dairy Processing (3 cr) Fall
FS 530 Dairy Processing Lab (1 cr) Fall
FS 565 Wine Microbiology and Processing (3 cr) Fall
FS 570 Advanced Food Technology (3 cr) Spring
BSYSE 582/583 Food Process Engineer I and II (3 cr each) Spring
BSYSE 584 Thermal and Nonthermal Processing of Foods (3 cr) Fall

Food Nutrition, Sensory, and Analysis:

FS 350 Instrumental and Sensory Analysis of Food (5 cr) Spring
FS 510 Functional Foods and Health (3 cr) Spring
VIT_ENOL 422 Sensory Evaluation of Food and Wine (3 cr) Spring
VIT ENOL 423 Sensory Evaluation of Food and Wine Lab (1 cr) Spring
NEP 580 Advanced Topics in Exercise Physiology and Nutrition (3 cr) Spring
CHEM 546 Spectroscopic Identification of Organic Compounds (3 cr) Fall
E_MIC 586 Special Projects in Electron Microscopy (Variable credit, 2-3, may be repeated) Fall
E_MIC 587 Special Topics in Electron Microscopy (1 cr, may be repeated) Spring
PSYCH 514 Psychometrics (3 cr) Fall
AFS 505 Topis in Computational and Analytical Methods for Scientists (V 1-6 cr) Spring

General Food Science Courses:

FS 516 Food Laws (2 cr) Summer *not covered by tuition waiver*
FS 517 Scientific Writing (2 cr) REQUIRED Fall (UI COOP)
FS 518 Oral Seminar (1 cr) REQUIRED Fall (UI COOP)

General Science Courses:

MBIOS 513 General Biochemistry (3 cr) Fall
MBIOS 305 General Microbiology (3 cr) Fall
MBIOS 540 Immunology (3 cr) Fall
MBIOS 550 Microbial Physiology (3 cr) Spring

Statistics:

STAT 412 Stat Methods in Research I (3 cr) Fall, Spring
STAT 419 Introduction to Multivariate Statistics (3 cr) Fall
STAT 435 Statistical Modeling for Data Analytics (3 cr) Fall
STAT 512 Analysis of Variance of Designed Experiments (3 cr) Fall and Spring
STAT 519 Applied Multivariate Analysis (3 cr) Spring
STAT 530 Applied Linear Models (3 cr) Spring
STAT/AFS 511 Statistical Methods for Graduate Researchers (4 cr) Fall and Spring

Horticulture:

HORT 513 Advanced Viticulture (3 cr) Spring
HORT 516 Advanced Horticultural Crop Physiology (3 cr) Spring
HORT 518 Post-harvest Biology and Technology (3 cr) Fall
HORT 535 Chemistry and Biochemistry of Fruit and Wine (3 cr) Fall
HORT 545 Statistical Genomics (3 cr) Spring
HORT/VIT_ENOL 440 Winery Operations and Equipment (3 cr) Spring
HORT/VIT_ENOL 441 Winery Operations and Equipment Lab Field Trip (1 cr) Spring

M.S. IN FOOD SCIENCE (THESIS)

The School of Food Science (SFS) offers a program of study leading to the Master of Science (Thesis) degree in Food Science. The following policies and procedures have been established as a guide to students and advisors. This document is intended to be a supplement to the *Graduate School Academic Policies and Procedures* established by the WSU Graduate School. Faculty and prospective students should be familiar with both documents.

Undergraduate Preparation

A. Chemistry	• Two semesters including general/inorganic chemistry • One semester of organic chemistry • One semester of biochemistry
B. Biological science	• Two semesters including general microbiology
C. Mathematics	• One course in calculus
D. Nutrition	• One course
E. Physics	• One course

Courses listed above that are not taken, as part of the student's undergraduate education will be considered deficiencies after admission for graduate education in Food Science and must be corrected early in the graduate program.

The Graduate School requires students meet minimum English proficiency scores for non-English speaking applicants prior to admission: https://gradschool.wsu.edu/international-requirements/. However, the student may be required by their advisor or thesis/dissertation committee to take additional English courses and/or arrange for tutoring, if needed.

Minimum Food Science Course Requirements

Area†	Equivalent Courses	Credits
Food chemistry/analysis	FS 460	3
Food microbiology/safety	FS 416	3
Food processing/engineering	FS 529, 565, 570 or BSysE 581, 582, 583, or 584	3

†Prior equivalent coursework may be used to satisfy minimum course requirements. Students may elect to also take companion laboratory courses depending on academic background and interest.

General Graduate Course Requirements

(1) Food science courses (500-level; minimum 9 credits):
- Scientific writing (FS 517; 2 credits).
- Oral seminar (FS 518; 1 credit).
- Other food science courses (500-level; 6 credits).

(2) Statistics (minimum 400-level; 3 credits).

(3) Total graded course + research (minimum 31 credits):
- Total graded courses (non-research; minimum 21 credits; a maximum of 6 credits of 400-level coursework may be counted toward this total).
- Thesis Research FS 700 (minimum 10 credits).
- The maximum number of transfer course credits is limited to half the total graded credits.

M.S. Student Committee

(1) A minimum of three WSU faculty will comprise a M.S. committee, two from the School of Food Science and one additional member. Additional committee members can be added as jointly agreed upon by the student and major advisor. All committee members must also hold a comparable level degree to that sought by the student. The majority of committee members must be active SFS graduate faculty.

(2) The third faculty committee member may come from outside the School of Food Science (*i.e.*, statistics, horticulture, chemistry, microbiology, business, etc.) and will be selected based on the interests and needs of the student and major advisor.

(3) To nominate an external (4^{th}) committee member, a CV explaining the value added must be included with the Program of Study, and the advisor must provide the rationale for the value added on the Program of Study form.

M.S. Final Defense

(1) In preparation for the Final Defense, students will provide an open seminar (approximately 40 minutes) describing and summarizing their thesis research. All committee members must be present for this seminar. The examination portion of oral exam should not exceed two-and-one-half hours.

(2) The Final Defense Oral Examination will be conducted by the student's graduate committee and is scheduled through the Graduate School. Students must check with the Graduate School for additional regulations regarding scheduling of the examination (enrollment requirements, etc.). A copy of the thesis must be available to the School of Food Science seven days prior to the defense.

(3) The Final Defense Oral Examination will primarily focus on the content of the thesis, but might also address food science competencies related to the thesis research.

PH.D. IN FOOD SCIENCE

The School of Food Science (SFS) offers a program of study leading to the Doctor of Philosophy degree in Food Science**.** The program shares teaching and research activities with the School of Food Science at the University of Idaho**.** The following policies and procedures have been established as a guide to students and advisors**.** This document is intended to be a supplement to the *Graduate School Academic Policies and Procedures* established by the WSU Graduate School**.** Faculty and students should be familiar with both documents.

Undergraduate Preparation

A. Chemistry	• Two semesters of general/inorganic chemistry • One semester of organic chemistry • One semester of biochemistry
B. Biological science	• Two semesters including general microbiology
C. Mathematics	• One course in calculus
D. Nutrition	• One course
E. Physics	• One course

Courses listed above that are not taken as part of the student's undergraduate or M.S. education will be considered deficiencies after admission for graduate education in Food Science. These deficiencies must be corrected early in the graduate program.

The Graduate School requires a minimum TOEFL score for non-English speaking applicants prior to admission: https://gradschool.wsu.edu/international-requirements/. However, the student may be required by his/her advisor or thesis/dissertation committee to take additional English courses and/or arrange for tutoring, if needed.

Bypassing the Master's Degree

A Master of Science (M.S. thesis) degree demonstrates the ability to conduct and report research and is generally required for admission into the Doctor of Philosophy (Ph.D.) program in Food Science**.** However, ***in exceptional cases***, a student admitted into the M.S. degree program may apply to by-pass the M.S. degree once a strong academic record and potential research ability is demonstrated**.** Contact the Graduate Academic Coordinator for the bypass application. After completion of at least two (2) semesters of courses at WSU and a minimum of four (4) courses from the approved MS Program of Study, the student can request admission into the Ph.D. program. Faculty who consent to serve on the Ph.D. dissertation committee will provide a single recommendation to the GAC and SFS Director who will confer and make a decision to approve or deny admission.

Minimum Food Science Course Requirements

Area[†]	Equivalent Courses	Credits
Food chemistry/analysis	FS 460 or 462	3
Food microbiology/safety	FS 416	3
Food processing/engineering	FS 432, 529, 565, 570 or BSysE 581, 582, 583, or 584	3

[†]Prior equivalent coursework may be used to satisfy minimum course requirements. Students may elect to also take companion laboratory courses depending on academic background and interest.

General Graduate Course Requirements

(1) Food science courses (500-level; minimum 17 credits):
- Scientific writing (FS 517; 2 credits).
- Oral seminar (FS 518; 1 credit).
- Other food science courses (500-level; 14 credits).

(2) Non-food science courses (minimum 6 credits):
- Statistics (minimum 400-level; 3 credits).
- Other non-food science courses (500-level; minimum 3 credits).

(3) Total graded course + research (minimum 78 credits).
- Total graded courses (non-research; minimum 34 credits; a maximum of 9 credits of 400-level coursework may be counted toward this total).
- Research (minimum 45 credits per SFS policy).
- The maximum number of transfer course credits is limited to half of the total graded credits.

Food Science Competency Areas

- Chemistry/analysis.
- Microbiology/safety.
- Processing/engineering.
- Nutrition, toxicology, sensory, and other related areas (such as statistical analysis)

Students will be tested in these competency areas at preliminary exam. Please refer to the preliminary exam section of this handbook to learn more. Students should select coursework to support examination in these areas.

PhD Student Committee

A minimum of four committee members will comprise a PhD committee: three SFS WSU graduate faculty, two of which must be tenured/tenure-track, and one additional committee member.

The fourth committee member may come from outside the School of Food Science (*i.e.*, statistics, horticulture, chemistry, microbiology, business, etc.) and will be selected based on the interests and needs of the student and major advisor.

Experts outside of WSU and faculty from other institutions may also be nominated to serve as a fourth or fifth committee member; the nomination requires a CV and the advisor must provide the rationale for the value this person adds to the committee/research on the Program of Study form. The dean of the Graduate School makes the final decision.

All committee members must hold a comparable level degree to that sought by the student, and the majority of committee members must be graduate faculty in the program.

Doctoral Preliminary Examination Guidelines for the School of Food Science

The purpose of a preliminary examination in the School of Food Science (SFS) is to determine the fitness of a doctoral student to get a Ph.D. in Food Science. A preliminary examination is required for all Food Science doctoral students to advance to their Ph.D. candidacy. The preliminary examination ensures that the students advancing to the Ph.D. candidacy have strong knowledge in general food science, but specifically in the area of their research. All doctoral students should complete the preliminary examination soon after the majority of course requirements are fulfilled or by the end of their second year in the Food Science doctoral program.

The preliminary examination in Food Science involves both a program-required written examination and a Graduate School-required oral examination, which follows the guidelines established by the Graduate School in the *Graduate School Policies and Procedures Manual*. Both written and oral examinations will be administered by the student's Advisory Committee headed by the student's Major Advisor. The conditions for each set of written exams (i.e., what external resources are permitted, the length of the exam, etc.) are determined by the individual Advisory Committee member and may differ among the committee members. The pre-determined conditions for the written examination should be clearly conveyed to the student taking the examination. The written examination follows the oral portion of the preliminary exam. There is no time limit for either the written or oral portions of the examination, but all aspects of the examination (i.e., the evaluation of any written component, the oral presentation, and/or the balloting meeting) must be completed within 30 calendar days. Students should work with their Major Advisor to determine the complete schedule for both the written and oral portions of the examination before beginning the examination.

The students are responsible for working with their Major Advisor and Graduate Committee to schedule both the written and oral sections of the preliminary examination. The students must be registered for a minimum of 2 hours of FS 800 as a regular graduate student at the beginning of the semester or summer session in which the examination is to be taken and have at least a cumulative 3.0 GPA for the courses taken on approved Program of Study. The oral exam should be scheduled through the Graduate School using the Preliminary Examination Scheduling Form or *Interim Examination Scheduling Form for Preliminary Exams* (in exceptional circumstances) but only:

1. after the Program of Study has been approved,

2. after all, or a substantial portion of the required coursework has been completed (six or fewer graded credits remaining on the approved Program of Study), and

3. when the student and their Major Advisor think the student is prepared for the exam.

Successful completion of the coursework outlined in the Program of Study does not guarantee successful passage of the written or oral examinations. Unsatisfactory performance by a student on the written or oral portions of the preliminary examination may result in the delay of overall completion of the preliminary examination or failure to complete the preliminary examination.

Procedure for Preliminary Examination

1. The student consults with their Major Advisor and members of their Graduate Committee to determine dates and times for both the written and oral examinations.

   (**Note:** Preliminary examinations are normally not allowed between semesters or during final examination weeks, except under extenuating circumstances.)

2. The student completes Preliminary Examination Scheduling Form *(or Interim Examination Scheduling Form for Preliminary Exams—for extenuating circumstances only)* from the Graduate School and obtain signatures from all members of their Graduate Committee. The student then submits the completed form to their Graduate Academic Coordinator.

   (**Note:** The Program of Study must have the approval of the WSU Graduate School prior to scheduling the preliminary exam.)

3. The Graduate Academic Coordinator obtains the signature of the SFS Director on the scheduling form, places a copy in the student's file, and sends the completed form to the Graduate School.

   (**Note:** The Preliminary Examination Scheduling Form must be returned to the Graduate School at least 10 working days before the exam begins.)

4. The Major Advisor requests written questions from each member of the student's Graduate Committee, indicating the date/time questions are due back to them.

5. The Graduate Committee members submit questions with complete examination instructions to the Major Advisor. The Major Advisor reviews and may discuss the questions with each member of the Graduate Committee to assure their appropriateness and that there is no duplication.

6. The Major Advisor (or any designated staff that the Major Advisor wishes to appoint in their place) coordinates the scheduling of the written examination with the student, including the venue for the examination (if required).

7. The Major Advisor (or designated staff member) administers the written questions, one set at a time from each Graduate Committee member, according to the examination instructions provided with the questions. The answers to the questions are due back to the Major Advisor (or designated staff) at the time specified in the instructions.

   (**Note:** The designated staff member proctoring the exam should return the answers to the Major Advisor.)

8. The Major Advisor routes the answers to the appropriate Graduate Committee member after each set of questions is completed.

9. The Graduate Committee members, after grading the answers to their questions as **Satisfactory (S) or Unsatisfactory (U)**, return a copy of their evaluations of the answers to the Major Advisor. Each committee member should grade the answers to their questions in a timely manner, but in not more than **5 working days**.

10. The Major Advisor should meet with the Graduate Committee members to discuss the overall performance of the student in the written examination. The c**ommittee then decides whether the student passed or failed the examination.**

11. The Major Advisor discusses the results of the written examination with the student prior to the scheduled oral exam. If the student **satisfactorily passes** the questions on the written examination from all Graduate Committee members, they may then proceed to the scheduled oral examination.

    However, if the student is judged to have performed **unsatisfactorily** overall on a set of questions from one or more members of the Graduate Committee, the student must cancel their oral preliminary examination and prepare for a re-examination for the written portion. **In the case of an unsatisfactory written examination**, the student will be given sufficient time, but **not more than 90 calendar days**, to prepare for re-examination on that (those) portion(s) of the written examination in which they performed unsatisfactorily. **The re-examination must be completed within the 90-day period.** For the re-examination, the questions upon which the student is being re-examined should not be identical to the questions that the student performed unsatisfactorily on during the first examination. If the student preforms satisfactorily on the re-examination, then they should re-schedule their oral preliminary examination. **If the student performs unsatisfactorily on the second written exam, they will be either dropped from the Ph.D. program or given the option to continue for an M.S. degree instead.**

    (**Note:** If the initial unsatisfactory written exam and the repeat exam span two semesters, the Major Advisor will give the student an "X" grade for FS 800 (per WSU Academic Regulation 90j), rather than an "S" grade, in the semester in which the unsatisfactory written exam occurred. Upon successful completion of the repeated written exam, the Major Advisor will convert the "X" grade for FS 800 to an "S" grade.)

12. The Graduate Committee headed by student's Major Advisor should administrate the oral preliminary examination. After the examination, the Graduate Committee should discuss

student's overall performance in both written and oral preliminary examinations and **vote pass or fail**. If the student passes, they will become a Ph.D. candidate and will be eligible to take their final dissertation defense examination.

However, in accordance with Graduate School policy, in the event of a **failed oral preliminary examination, the student can be re-examined only one more time**. **In the event that a student passes their written examination and then fails the oral examination, the student does not need to repeat the written examination.** At least **3 months** must elapse between a failed oral exam and re-examination. A minimum of **4 months** must elapse between the successful completion of the preliminary examination and scheduling of a final dissertation defense examination. A member of the Graduate Mentor Academy will be appointed by the Graduate School and must be present for an oral re-examination. The entire committee must be present and vote. A student who has failed two preliminary examinations **may not become a candidate for the doctorate and the student's enrollment in the Graduate School will be terminated**. The only exception to this re-examination policy is if a member of the Graduate Mentor Academy (appointed by the Graduate School) presided over the student's first exam and agrees that a re-examination is not an appropriate disposition of the case.

Written Preliminary Examination

For the written preliminary examination, the student should be tested for all Food Science competency areas (established by the Institute of Food Technologists) consisting of:

1. Food chemistry/analysis
2. Food microbiology/safety
3. Food processing/engineering
4. Food nutrition, toxicology, sensory, or other related areas (such as statistical analysis)

The content and conduct of the preliminary examination are the responsibility of the student's Graduate Committee and should be administered by the student's Major Advisor. Each Graduate Committee member can pick one or multiple competency areas to test the student. The Graduate Committee members can also pick the competency area outside their research/teaching interests. Each Graduate Committee member submitting questions for a written preliminary examination will also submit clear instructions specifying the conditions under which the examination should be administered. There is no set format for the questions; therefore, the format and number of questions in each set depends on the Graduate Committee member. However, the format of the examination should be such that the student can reasonably answer all questions in the specified time.

Oral Preliminary Examination

The content and conduct of the oral preliminary examination are the responsibility of student's Graduate Committee and should be administered by the student's Major Advisor. The student should give an open seminar (~40 minutes) presenting their research proposal/progress, followed

by an open Q&A session for the public. After the public presentation and Q&A, the student will have a closed-door Q&A session with their Graduate Committee. The Major Advisor is responsible for conducting a fair and thorough oral examination and offering a reasonable opportunity for all members of the student's Graduate Committee to question the student. The Graduate Committee should try to complete the oral preliminary examination between **2 and 4 hours** in duration (**although Graduate School policy states there is no time limit for either the written or oral portions of the exam**) and must be completed within **30 days** from the beginning of the written examinations.

All members of the student's Graduate Committee must be present at the oral examination, which must be held during regular working hours either on the Pullman or branch campuses, Research and Extension Centers, or by videoconference, if not all members of the Graduate Committee cannot be physically present. If held over videoconference, at least one Graduate Committee member must be physically present with the student (unless encountered with exceptional circumstances). At the conclusion of the oral examination, the student's total performance on the examination should be discussed and evaluated by the Graduate Committee for:

1. demonstrating a comprehensive understanding of the primary literature, scientific principles, and methodologies relevant to their research focus,

2. demonstrating an ability to synthesize knowledge from courses and primary literature, and apply this knowledge to problem-solving,

3. demonstrating an ability to apply the principles and technical knowledge of food science and related disciplines to problem-solving,

4. demonstrating a broad understanding of the scientific principles and methodologies of related disciplines relevant to food science

All members of the student's Graduate Committee must vote to pass or fail. Ballots must be cast on the basis of the entire examination, including both written and oral. Any other members of the Food Science Faculty or minor program may be present during the presentation and ask questions during public Q&A but may not vote, except with the prior permission of the Director of the Food Science Program. **In any case, faculty wishing to vote must be in attendance during the entirety of the examination and must have participated in the assessment of the student's examination work**. If a faculty member who wishes to vote must leave the room or the online session during the examination or balloting discussion, the examination or discussion is to be recessed until said member returns. The student shall pass if a minimum of **three-fourths** of those voting so indicate. All ballots and evaluations should be signed by the Advisory Committee members in accordance with the *Graduate School Policies and Procedures Manual*.

Upon successful completion of the preliminary exam, the candidate should apply for the "All But Dissertation" (ABD) Waiver offered by the Graduate School. This program offers numerous benefits for faculty and students, but most specifically, it encourages the use of extramural grants in support of students seeking their doctoral degrees. Students will be reminded of this opportunity by the Graduate Academic Coordinator.

Final Defense

1. In preparation for the Final Defense, students will provide an open seminar (approximately 40 minutes) describing and summarizing their dissertation research. All committee members must be present for this seminar. The examination portion of oral exam should not exceed two-and-one-half hours.

2. The Final Defense Oral Examination will be conducted by the student's graduate committee, and is scheduled through the Graduate School. Students must check with the Graduate School for additional regulations regarding scheduling of the Final Examination (enrollment requirements, etc.). A copy of the dissertation must be available to the School of Food Science seven days prior to the defense.

3. The Final Defense Oral Examination will primarily focus on the content of the dissertation but might also address food science competencies related to the dissertation research.

FINANCIAL SUPPORT

ASSISTANTSHIPS

The two types of financial support available to graduate students are Research Assistantships (RA) and Teaching Assistantships (TA) funded by state or grant sources. Despite the funding source, each **requires** students to work 20 hours/week by performing research duties or assisting faculty to teach courses. These appointments are usually for the academic year (August 16 to May 15), are subject to maintenance of a minimum 3.0 cumulative grade point average, have continued regular enrollment in the Graduate School, make adequate research progress, and have no outstanding 'incomplete' grades for more than one semester. Students must enroll full-time (10-12 credits per semester), and students must reside in the state of Washington to be eligible for the tuition waiver. For domestic students to receive the NR tuition waiver beyond the first year (2 semester), WSU requires beginning residency procedures upon arrival to WSU. Review residency requirements at http://residency.wsu.edu/residency-requirements/.

The admission of graduate students into SFS and assignment of state-funded assistantships is performed by the SFS Director with recommendations from the Graduate Admissions Committee (GAC). State-funded RAs will be offered to students with continual attention to the balance of RA support for each faculty member. The GAC recommends to the Director the assignment of students with TAs to courses for the upcoming year (fall and spring semesters). Individual faculty members may recruit students for assistantships funded from grants. The principal investigator(s) shall inform the GAC of student appointments to grant supported assistantships.

Guidelines for Assigning State-Funded Assistantships

1. RAs will be offered to graduate students with the best credentials including GPA, GRE's, TOEFL, previous experience, letters of recommendation and other information available.

2. To advise a graduate student on a RA, the faculty member must have an approved Agricultural Research Project or a Cooperative Extension project.

3. Assistantship offers are normally made in writing during the spring semester.

4. Faculty are generally eligible to advise only one graduate student on a state funded RA at a given time.

5. RAs that are funded by the WSU Creamery will be provided to faculty conducting dairy-related research. These RAs will be considered equivalent to other state-funded RAs and will be restricted to one advisee per faculty member. Selection to receive these assistantships rests with the creamery manager, creamery advisor, GAC Chair, and SFS Director.

6. International students being considered for a teaching assistantship **MUST** complete the WSU International Teaching Assistant examination (ITA). The purpose of this examination is to ensure that all non-English teaching assistants have adequate English skills necessary for effective teaching. For those students not on a state-funded TA or RA, and want to be considered for one in the future, you must take the ITA exam at least one semester before applying for one of the SFS assistantships. Please see the Graduate Academic Coordinator for further information.

Time Limitation for Assistantship Appointments

Awarding of grant or state-funded assistantships will generally not exceed four (4) semesters B.S. to M.S., six (6) semesters M.S. to Ph.D., or eight (8) semesters B.S. to Ph.D. provided that adequate progress towards the degree is met. Re-appointments beyond these suggested Graduate School time limitations will be made only by majority approval of the SFS Faculty and will be allowed only under acceptable extenuating circumstances.

All appointments are reviewed on an annual basis and subject to satisfactory progress.

Work and Vacation Time

Students on an assistantship are expected to devote an average of 20 hours/week on teaching or research duties for which the stipend is provided. Students who register for thesis or doctoral research (FS 700, 800) should devote an average of three hours per week for each credit hour. State-funded research assistantships provide nine months of salary from Aug. 16 to May 15. Summer salary is at the discretion of the graduate advisor.

Graduate students on appointments do not earn annual or sick leave. Students are entitled to designated university holidays that occur during the period of their appointments, but are expected to work even when classes are not in session. Since you are getting paid, get permission from your advisor and instructor to take leave during student breaks (Thanksgiving, Winter, Spring, etc), and or University Holidays. See the approved WSU Holiday Schedule at http://hrs.wsu.edu/Holiday-Schedule.

EMPLOYMENT PROCEDURES

Students accepting an assistantship must contact the SFS Administrative Manager no later than mid-July for the fall semester and mid-November for the spring semester, preferably prior to arrival at the university. If a student does not have an assistantship, but is hired instead on an hourly wage called 'Time-Slip, the student must see the Administrative Manager before beginning to work. All new employees must complete required employment eligibility verification (I-9) prior to their first date of employment followed by Workday onboarding to include proof of vaccination, W4 payment elections and other tasks in the Workday onboarding process.

As noted in the Graduate School Appointment Processing Document 'Leave and Vacations section J' it states, "During the term of their appointments, all graduate student service appointees are expected to be at work each normal workday, including periods when the University is not in session with the exception of the legal holidays designated by the Board of Regents". All University holidays are designated by the Board of Regents and are published in the *WSU Week* and posted on the Web at http://hrs.wsu.edu/Holiday-Schedule.

STUDENT EVALUATION

GRADUATE SCHOOL

The Graduate School reviews records at the end of every semester to be sure students have a cumulative grade point average of at least 3.00.

When the cumulative GPA drops below 3.00, re-instatement is needed for continued enrollment. Such students will receive a letter of deficiency from the Graduate School indicating that continuance in graduate studies will not be allowed without a letter of support from the advisor and SFS Director. Students must discuss plans to increase grades, to make adequate progress with their advisor and a strong case for reinstatement should include reasons for the poor performance and a specific plan for improvement. Once a favorable letter is sent to the Associate Dean of the Graduate School for reinstatement, students will be sent a formal letter of reinstatement. If a student is not reinstated, the Graduate School will send a notice of termination.

SCHOOL OF FOOD SCIENCE

The Graduate School requires an annual evaluation of each student as a means of assessing progress towards his/her degree. This evaluation is intended to provide constructive advice to the student and enhance the training experience. An *Annual Evaluation* form is given to all students to be filled out by the student and advisor. The student's thesis/dissertation advisory committee reviews, evaluates, and signs the completed form and then submitted to the Graduate Academic Coordinator, and then forwarded to the GAC/Director who notifies the student of the review results. Unsatisfactory progress toward degree objectives could lead to termination of enrollment and/or loss of assistantship through action by the Director.

FACILITIES AND SERVICES

LABORATORY SPACE

Each graduate student working in SFS will be assigned laboratory space (if applicable), generally near the advisor. Each research laboratory is under the control of a specific faculty member and any student using a laboratory is subject to the rules and regulations applying to it. Before a student can work in a laboratory, they must complete departmental safety training and a more specific training with the lab supervisor or advisor. Cleanup of work areas and proper care of equipment is the responsibility of the person using the work area and equipment, even if that person is not working in his/her own lab.

Some equipment is purchased by the SFS and is available for general use, but most instruments are purchased with grant funds by individual faculty members and are under their control. It is SFS policy to maximize the use of equipment, since it is often not feasible to duplicate items. Equipment in your graduate advisor's laboratory will be generally available to you but the use of any other equipment or facilities **must be negotiated with the faculty member in charge**. Broken and/or non-functioning equipment **MUST** be reported immediately to the student's advisor and the person in charge of the particular instrument. If the problem is due to misuse, the student and/or advisor will be held responsible for repairs or replacement. No items (lab supplies, equipment, dishes, etc) may be taken from teaching laboratories (FSHN 103/155 and 140) without permission from the laboratory supervisor.

DESK SPACE

Desk (office) space is usually available first to students being financially supported by state or grants funds, and then to those supported by scholarships, fellowships or self-paying. To request desk space other than what you are assigned, please have your graduate advisor submit a request to the SFS Space Committee.

OFFICE SUPPLIES/EQUIPMENT

Office supplies kept in the SFS workroom are not to be used for any purpose except activities authorized by advisors or the course instructor whom the student is assisting. Once the advisor or instructor authorizes you to get/use SFS supplies, inform the office personnel before taking any items. Also, please notify office personnel if you need assistance, or if you take the last item.

Laptop Computers and Projectors – available for loan to students for seminars. Reserve them in advance from the SFS Front Desk to ensure availability. Make sure all cords are replaced and stored in their proper place.

Copy Machine – for departmental use only and available if you have TA duties. Personal copies are not allowed, including copying lecture notes, theses, books, or reference material. Food Science is not a vendor department and cannot bill for copies**.**

Scanning – The copy machine has the capability to scan a document for university business. Contact the Front Desk for directions to scan using the copy machine.

COMPUTER

It is your responsibility to be familiar with the WSU policies on computer usage http://public.wsu.edu/~forms/HTML/EPM/EP4_Electronic_Communication_Policy.htm, and the CAHNRS policies on virus protection, computer support for graduate students, and software updates http://cwr.wsu.edu/. When using WSU computers and bandwidth, it is illegal to download television, movies, music, and games.

KEYS

All outside door keys and keys to specific rooms to which a student may require access can be obtained from the SFS Administrative Manager by request of your advisor. The keys are stamped with a code and you will be responsible for your assigned keys. **Do not lend your keys to anyone**. You will be required to sign for the keys you receive and you **MUST** return them when you graduate or when you no longer need access to the room. The university reserves the right to impose sanctions for keys that are not returned.

MAILBOXES

All graduate students have a mailbox located in the SFS copy room and is accessible by the outside hallway. It is against WSU policy to use the departmental address to receive personal mail.

TELEPHONE

On campus telephone numbers are 509-335-XXXX. To make a call from a campus phone to another campus phone, dial 5-XXXX. To dial off-campus local numbers, dial 7-33X-XXXX or Moscow 7-885-XXXX. To call a toll free number, dial 7-1-800-XXXX.

INFORMATION BOARD

Information boards are located near rooms FSHN 102 and104A, and in the hallway (near the elevator) where pertinent information for food science graduate students is displayed, including seminar announcements, courses, special events, scholarships, and Food Science Club.

THESES/DISSERTATIONS

Theses/Dissertations written by SFS graduate students are housed in FSHN 106. These may be examined and/or checked out from the SFS Front Desk. Return them to the SFS Front Desk. While in your possession, take care to not lose or damage to avoid having to pay for replacement copy.

ROOM 103/155

FSHN Room 103/155 is a food preparation laboratory that has 14 small-scale kitchens, two of which are demonstration kitchens. If you need to reserve these rooms for a food function, meeting, or class, contact the SFS Front Desk. Make reservation early to ensure room availability. If the room is needed for a food function, pick-up the room policies and procedures, and collect any equipment needed (in advance). Follow the clean-up procedures as directed by the form.

ROOM 150

FSHN Room 150 is a sensory training room, and is part of the Sensory Evaluation Laboratory. It may be closed if being used for conducting research or meetings. If available, this room can be used by faculty, staff and graduate students. To reserve, get permission from the Faculty responsible for this room (see Appendix 3). Do not remove any items from this room, including the tables and chairs.

ROOMS 104A AND 106G (CONFERENCE ROOMS)

FSHN 104A is the large conference room (seats 30) and FSHN 106G is a small conference room (seats 6). They are both available for meetings, seminars, or club events. To reserve the room(s), sign-up at the SFS Front Desk.

COMPLAINTS AND GRIEVANCES

If a problem that cannot be resolved develops between a student and the advisor or other personnel, discuss the issue first with the SFS Director. The WSU Graduate School has specific procedures available to assist with unresolved complaints and/or grievances: https://gradschool.wsu.edu/documents/2017/07/gs-grievance-procedures.pdf.

REPRESENTATIVES TO FACULTY MEETINGS

Graduate students can elect or select one representative to be present at faculty meetings. The role of the representative is to convey any issues or concerns of graduate students to the faculty as they pertain to departmental policies and procedures.

STUDENT ORGANIZATIONS

A club for both undergraduates and graduates majoring in Food Science and related fields, the **Food Science Club (FSC)** offers a learning environment by providing interaction between students, faculty, and industry leaders. As a fundraising project, the club produces cheese spreads in conjunction with the WSU Creamery (Ferdinand's). Other activities include the Washington State's Adopt-a-Highway program, and competition in "The College Bowl". The FS Club meets

monthly to plan club activities and sponsors guest speakers who help students gain a better understanding of the food industry and the role it plays in providing the public with safe and nutritious foods. Review FS Club website at http://sfs.wsu.edu/current-students/student-groups/food-science-club/. The FS Club encourages students to also join the Institute of Food Technologists, the national professional organization (www.ift.org).

The **Food Product Development Team** offers students in any discipline an opportunity to combine their creativity and education with the objective to develop novel food products. Students learn first-hand how to develop novel food products, from concept to consumer, and gain valuable leadership, communication and teamwork skills in the process. Their creations are entered into many different national contests, including the Idaho Milk Processing Association, Almond Innovations, Danisco Knowledge Award, and Institute of Food Technologists Product Development Competitions. The Food Product Development Team has earned national recognition since its founding in 1998, with over a dozen award-winning products. Review website at http://sfs.wsu.edu/current-students/student-groups/food-product-development/.

The **SFS College Bowl Competition** is open to Food Science graduate and undergraduate students. It tests the knowledge of student teams across the nation in the areas of food science and technology, history of foods and food processing and general IFT/food-related trivia. http://sfs.wsu.edu/current-students/student-groups/college-bowl/.

APPENDIX 1: HISTORY OF FOOD SCIENCE

The original food science program was established in the 1960's as an interdepartmental program. This program became the Department of Food Science and Technology in 1970. Dietetics has been offered at WSU since 1908 and became the Department of Human Nutrition and Foods in the former College of Home Economics in the 1970's. The College of Agriculture and Home Economics was established in 1982 by the merger of the two parent colleges (College of Agriculture and the College of Home Economics). In 1983, the departments of Human Nutrition and Foods and Food Science and Technology combined to create the Department of Food Science and Human Nutrition (FSHN).

In 2007, the Department of FSHN began a significant organizational restructuring. The human nutrition and dietetics faculty and programs in FSHN moved to WSU's new Division of Health Sciences under the College of Pharmacy, paving the way for the proposed formation of the bi-state **School of Food Science (SFS)** in 2010. This change merged the food science faculty and programs from the WSU Department of FSHN with the food science faculty and programs from the University of Idaho (UI) Department of Food Science and Toxicology. The SFS was unique in the nation and provided immediate national impact and recognition.

In 2020, the WSU/UI Bi-state School of Food Sciences was dissolved as an organizational unit, and operates with an MOU pertaining to curricula which will remain cooperative, jointly delivered and managed by faculty in CAHNRS at WSU and CALS at UI.through August 1, 2027.

Currently, the WSU SFS has ten faculty members, and maintains strong undergraduate and graduate programs in food science (B.S., M.S., and Ph.D.). An online degree MS AG with Food Management option is also available. SFS is housed in a building that was completed in 1989, which is called Food Science and Human Nutrition Building, and shares space with Entomology, Horticulture, and Biological Systems Engineering. Facilities for Food Science include a well-equipped pilot plant, 14-unit kitchen laboratory, tissue culture room, research laboratories, wine-making laboratory, and a sensory evaluation laboratory. Analytical instrumentation includes spectrophotometers, gas chromatographs, high-pressure liquid chromatographs, liquid scintillation counter, gamma counter, supercritical fluid chromatograph, and others. Additional specialized food processing facilities at WSU are available at the *Ferdinand's Ice Cream Shoppe*, and the WSU Creamery, Meats Laboratory, the United States Department of Agriculture Western Wheat Quality Laboratory. Research faculty are also located at the Irrigated Agriculture Research and Extension Center in Prosser, WA, and at WSU Tri-Cities campus, in the heart of Washington's expanding food processing and wine industries.

APPENDIX 2: GRADUATE SCHOOL GUIDELINES FOR GOOD PRACTICES IN GRADUATE EDUCATION

WSU's graduate programs are marked by outstanding faculty, modern and challenging curricula, first-rate students, and support systems that enhance student and faculty development. The best support systems include staff, comfortable office or laboratory space, resources necessary for scholarship and research, and policies and written guidance for students to meet programmatic and University requirements. These guidelines focus on the responsibilities of students and the expectations of faculty advisors, mentors, programs and departments.

The purpose of these guidelines is to ensure that WSU faculty members and graduate students share the responsibility for creating a supportive environment—one that is community-minded in purpose and conducive to learning. Good working relationships among faculty members and graduate students require that they recognize and honor their respective responsibilities to ensure high quality graduate education and an environment where everyone acts ethically and professionally at all times. The following guidelines are intended to promote an understanding of graduate students' responsibilities as members of the academic community of WSU.

Expectations of Graduate Students

WSU graduate students have a responsibility to:

1. Conduct themselves in a mature, professional, and civil manner in all interactions with faculty, staff, and other graduate or professional students, and undergraduates.
2. Learn the Graduate School's Policies and Procedures, including important program deadlines, requirements and grievance procedures (see: www.gradsch.wsu.edu).
3. Learn their specific program requirements and procedures as delineated by their academic program.
4. Learn the standards of academic and professional performance established by faculty and their respective professional groups.
5. Maintain integrity in academics, research, independent scholarship, and professional development.
6. Communicate regularly with faculty advisors on matters related to progress within their graduate programs.
7. Acknowledge contributions of faculty advisors and others in work leading to conference presentations and publications.
8. Respect time constraints of faculty, particularly in email correspondence.
9. Respect the responsibilities of faculty advisors to evaluate students' coursework and overall academic progress. Faculty, in turn, are responsible for monitoring the validity and quality of students' research, teaching, and other scholarly activities.
10. Fulfill, in a timely manner, the requirements of their program, as prescribed by their program and the Graduate School.
11. Assume the initiative in selecting committee members for thesis, dissertation, and preliminary exams.
12. Contribute positively to a collegial environment within the program and department.
13. Complete in a timely manner the Responsible Conduct of Research training.

14. Adhere to federal, state, University, and departmental rules and regulations regarding the use of animals, human subjects, dangerous and hazardous chemicals, biohazardous and radioactive materials or radiation in research.

Expectations of WSU Programs and Departments

Programs and departments play a key role in creating a positive and supportive environment for graduate students to success in their studies. Programs and departments have an expectation to:

1. Inform incoming graduate students of codes of professional and academic conduct expected of graduate students.
2. Inform graduate students about University and program requirements, including academic programs, committee formation and changes, and the nature and scope of theses and dissertations.
3. Evaluate graduate students yearly regarding their academic progress toward intended degrees, including notification in writing about satisfactory or unsatisfactory performance.
4. Encourage graduate students to participate in professional meetings, including the delivery of presentations of research or scholarly findings.
5. Assist graduate students in the timely completion of departmental or program requirements.
6. Provide students with a policy to guide collaborative projects and authorship.
7. Provide students with a graduate student manual or handbook that includes all departmental policies governing graduate student appointments, rights, and responsibilities as members of the academic community.

Expectations of Faculty Advisors and Mentors

High quality graduate programs are those with notable faculty and systems for advising and mentoring graduate students. Graduate students need advice and guidance during their early experiences in graduate school, especially from faculty whose interest goes beyond the advisor-director role to one of teacher and mentor. Departments and programs are responsible for encouraging effective mentoring and for ensuring that graduate students receive advice and mentoring during the course of their graduate studies.

A mentor is a faculty person who assists scholarly development, contributes to intellectual stimulation, and fosters professionally enriching relationships with graduate students. A faculty mentor is a peer-to-be, one who encourages and supports independent development and who nurtures a rapid transition from graduate student to colleague through insightful guidance, trust, and mutual respect.

Students should expect that mentors will interact with them on a regular basis, providing the guidance, advice, and intellectual challenge necessary to complete their degree programs. If the mentor relationship is not a good fit, and another appropriate mentor is available, the student may change mentors at any time, without fear of reprisal.

Mentors and faculty advisors have an expectation to:

1. Interact in a professional and civil manner consistent with University policies. Particular attention should be paid to mentoring that involves diverse or nontraditional students.

2. Create an ethos of collegiality in classroom, laboratory or studio supervisory relationships that stimulates and encourages students to learn creatively and independently.
3. Develop clear understandings about specific research expectations and responsibilities, including timelines for completion of theses or dissertations.
4. Provide verbal and/or written comments and evaluations of students' work in a timely manner.
5. Discuss laboratory, studio, or departmental authorship policy with graduate students in advance of entering into a collaborative project.
6. Acknowledge student contributions to research presented at conferences, in professional publications, or in applications for copyrights and patents.
7. Prevent faculty rivalries from interfering with their duties as advisors, committee members, instructors or colleagues.
8. Ensure that a graduate student's assistantship experiences contribute to the student's professional development and does not impede his/her progress toward a degree.
9. Excuse themselves from serving on graduate committees when there is a potential conflict of interest or even an appearance of a conflict of interest (for example, a familial relationship between the student and the faculty).
10. Refrain from requesting students to do personal work without appropriate agreement and compensation (see also the WSU Faculty Manual - Faculty Code of Professional Ethics and Duties).

Expectations of Teaching Assistants (TAs)
Regardless of how their assignments are crafted, TAs have the responsibility to meet the goals and objectives of their teaching assignments as articulated by course instructors and departmental administrators. TAs should strive for the highest quality of instructional pedagogy and delivery of services to students. All grading responsibilities should be fulfilled thoughtfully and in a timely manner. TAs who experience any difficulties with their assignments should immediately discuss these difficulties with the course instructor and/or departmental chair.

Expectations of Research Assistants (RAs)
Employment as an RA involves commitments, not only to thesis and dissertation research, but also to the goals and objectives or deliverables of the sponsored project providing the salary support. RAs should exercise the highest integrity in their research efforts and also be aware of responsibilities attendant to the University's intellectual property and conflict of interest policies and procedures. Questions should be addressed immediately with the advisor and/or the principle investigator of the project.

Expectations of Research Fellows (RFs)
Recipients of research fellowships should understand and adhere to the goals and objectives of sponsoring programs. These goals and objectives may require completion of training modules or internships, the development of a scholarly document (e.g., thesis or dissertation), specific uses of support funds, and/or annual or quarterly reports. It is the responsibility of RFs to be aware of such expectations and to meet them as completely as possible within the specified deadlines.

Expectations of Staff Assistants (SAs)
Employment as an SA involves commitment to the unit providing the support. SAs should strive for the highest quality of service and responsibility in meeting the goals and objectives of their employing unit. Questions should be addresses immediately to the SA's supervisor.

APPENDIX 3: EXPECTATIONS FOR GRADUATE STUDENTS, SCHOOL OF FOOD SCIENCE, WASHINGTON STATE UNIVERSITY

1. General Conduct: All graduate students are expected to conduct themselves in mature, professional, courteous manners toward other students, staff and faculty regardless of their race, gender, religion, sexual orientation, or national origin. Graduate students should work together with faculty and staff to create an environment that stimulates and encourages creative and independent learning while respecting academic freedom that allows expression of differing opinions.

2. Requirements/Policies/Procedures: All graduate students are expected to take primary responsibility to inform themselves of specific requirements, policies, and procedures governing their graduate studies within the School of Food Science (SFS) and WSU Graduate School including ensuring that they meet all stipulated deadlines. Specific degree requirements are located in the SFS Graduate Student Handbook. For students enrolled in UI COOP designed coursework at the University of Idaho, please note that UI academic calendar, regulations, and policies prevail such enrollment. The WSU transfer credit policy requires that the student earn a B or better in such coursework in order for it to transfer to WSU. Pass/fail enrollment does not transfer.

3. Time Management: All graduate students are expected to manage time effectively for maximum professional development as well as personal health and well-being and balance competing demands such as being a student, graduate assistant, parent, spouse, caregiver, etc. In general, students should determine their daily schedules in consultation with their advisor. However, the demands of research often dictate that a student will have to devote time in excess of or outside of normal working hours to complete their research project and other degree requirements in a timely manner. In turn, faculty will respect student's need to allocate their time among competing demands, while helping the student to maintain timely progress towards their degree.

4. Additional Duties: For students on assistantships, other duties besides courses and the student's own research may be assigned including (a) assisting other students and faculty with research, teaching, and/or extension demonstrations, (b) maintaining cleanliness of laboratory, desk space, pilot plant, or other common use areas, (c) assisting advisor with literature searches, grant proposal development, research progress reports, etc., or (d) other SFS activities.

5. Funding/Support: Funding/support is described in individual student offer letters received from the SFS. Awarding of grant or state-funded assistantships will generally not exceed four (4) semesters B.S. to M.S., six (6) semesters M.S. to Ph.D., or eight (8) semesters B.S. to Ph.D. provided that adequate progress towards the degree is met.

6. Advisor/Committee Meetings: Graduate students are expected to meet regularly with their

advisor(s) and at least once a year with their graduate committees. All meetings should be scheduled well in advance and every effort maintained to keep appointments.

7. Professional Meetings: Graduate students will be granted time to attend professional meetings and meetings in which they are representing the SFS and WSU. All students should discuss attendance at these meetings with their advisor prior to planning to attend. Graduate students will not be granted leave during crucial parts of laboratory projects or when it conflicts with assistantship responsibilities. Funding may be available from the advisor or SFS to attend professional meetings but is not guaranteed.

8. Safety: Safety is the responsibility of every member of the campus community and all students will receive the appropriate safety training prior to participating in research projects. As SFS is committed to maintaining a safe environment for its faculty, staff, and students, participation in all relevant safety orientations and adherence to safety regulations will be mandatory. Safety plans and emergency management strategies for an individual campus, station, building, or other unit should be consulted so that all are aware of the appropriate actions to be taken should an emergency arise.

9. Thesis/Dissertation Writing: While faculty will provide needed guidance, individual students will be expected to provide the majority of writing in such a quality as to be deemed "reasonable" for submission to a peer-reviewed journal. Students should not expect faculty advisors to write significant portions of their theses/dissertations in order to graduate within specific deadlines. An acceptable M.S. thesis will usually contain at least one publishable journal article, while a Ph.D. dissertation generally yields three or more publishable manuscripts. Students should respect faculty members' need to allocate their time and other resources in ways that are academically and personally productive. As such, students must allow time for faculty review of written material, minimally two to three weeks (14 to 21 days) per manuscript.

10. Professional Acknowledgements: Student and faculty contributions to research presented at conferences, in professional publications, or in applications for invention disclosures, copyrights and patents should be acknowledged by authorship, ownership, or in some other appropriate form.

11. Leave: All leave (vacation, absences, etc.) should be approved by the advisor in advance. Typically, vacation time will not be granted during crucial times of research (*i.e.*, growing season, harvests, etc.). Graduate students are expected to be at the school during the standard hours of university operation but not be expected to be at work on officially designated university holidays or days when their university is officially closed. Written notice is required to the advisor and SFS director and respective Graduate School if a student desires to leave the university prior to degree completion. Included in this letter will be a proposed schedule for completing all degree requirements as well as the assurance that data collection and analysis will be finished prior to leaving the university. Compliance with additional policies may be required depending on the university. However, leaving the university prior to completion of the thesis/dissertation is highly discouraged as this situation adds additional burden and stress to both the student and their advisor. Commonly, students face challenges finding the needed commitment and time to write, obtaining direct guidance from the advisor, difficulty in obtaining current research articles, and/or having access to adequate computer support.

12. Annual Evaluation: Performance and progress toward degree will be assessed annually using the SFS Annual Graduate Student Evaluation form. Graduate students will be expected to work with the advisor to ensure that progress and eligibility continues.

13. Plagiarism and Academic Honesty: Cases of plagiarism and academic dishonesty are not tolerated and will be handled in accordance with academic integrity policies as stated in the SFS Graduate Student Handbook and by individual university policies.

14. Disagreements: If a disagreement arises between a student and a faculty/staff member that they cannot resolve among themselves, a meeting with the SFS director is encouraged.

15. Signature:

_____
Name of Student

_____ _____
Signature of Student Date

**Signing this document confirms that the student has (a) read and understands the expectations as described above and (b) been given an opportunity to discuss the contents of this document with their advisor and/or SFS Director.*

Approved by SFS faculty October 2011