

# **GRADUATE PROGRAM HANDBOOK**

**Department of Food Science**

**The Pennsylvania State University**

**Academic Procedures**

**Academic Year 2020-2021**



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The Pennsylvania State University  
University Park, PA 16802

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## **INTRODUCTION**

**Welcome to the Department of Food Science!** Our strategic plan specifically states that the Department will be recognized internationally for innovative research in the context of graduate education, making you an integral part of our program.

This **Graduate Program Handbook** presents information important to students enrolled in the M.S. and Ph.D. programs in the Department. The Graduate School of The Pennsylvania State University has general requirements that every Penn State graduate student must satisfy for admission and the awarding of a M.S. or Ph.D. degree. In addition, each graduate major has specific coursework requirements, thesis research criteria, and established policies that are appropriate to the program. Procedures and rules have the goal of assuring uniform and high standards of performance, and it is the responsibility of each graduate student to become familiar with them.

Graduate education involves more than satisfactory completion of coursework and thesis requirements. Informal and frequent contact with the entire faculty and other graduate students is highly recommended. There are several opportunities for graduate students to get actively involved with the Department, College and the University while they are in graduate school through participation on Departmental and University committees, the Food Science Club, Institute of Food Technologists, Graduate Students' Association, etc.

This handbook is intended to serve as a guide as you navigate through your graduate program. Your graduate advisor, committee, and I are here to guide your progress, but the ultimate responsibility for that program resides with you. Please let me know if you have any suggestions on this handbook.

I wish you much success as you embark on your graduate degree program.

Greg Ziegler  
Director of Graduate Studies  
August 6, 2019

## DEPARTMENTAL EXPECTATIONS OF GRADUATE STUDENTS

### M.S. STUDENTS

A student in the M.S. degree program will be knowledgeable about the field of food science in general. This knowledge will be acquired primarily through satisfactory completion of required coursework and attendance at Departmental seminars. Additionally, our students will develop the ability to learn independently by determining, finding, and using necessary resources. Our students will also develop the ability to make decisions and judgments based on their knowledge. Furthermore, the student will be capable of addressing a research problem through a series of sustained, logical experiments and bring his or her work to a satisfactory conclusion in the form of a M.S. thesis. Finally, it is expected that the thesis research will be of publishable quality and, as a minimum, will be communicated through at least one oral presentation or poster session at a scientific meeting.

The learning outcomes for the M.S. degree in Food Science are:

1. **Know.** Graduates will develop a deep conceptual understanding of food chemistry, microbiology, engineering, nutrition.
2. **Critical thinking.** Graduates will be able to solve practical problems in the Food Science field.
3. **Research.** Graduates will demonstrate the ability to design scientific approaches to solve practical problems and to select appropriate methods of data analysis.
4. **Communicate.** Graduates will be able to accurately report the results of research data in field of food science through written and oral presentations.
5. **Professional practice.** Graduates will conduct themselves in an ethical and professional manner.

### Ph.D. STUDENTS

In addition to the expectations described above for our M.S. students, a student in the Ph.D. degree program will develop the ability to determine and conceptualize a research problem, design the scientific approaches and experiments to address it, and bring his or her work to a satisfactory conclusion in the form of a Ph.D. dissertation. Finally, it is expected that the dissertation research will be of publishable quality and, as a minimum, will be communicated through an oral presentation or poster session at a regional or national scientific meeting and through at least one publication in a peer-reviewed journal.

The learning outcomes for the Ph.D. degree in Food Science are:

1. **Know.** Graduates will develop a deep conceptual understanding of food chemistry, microbiology, engineering, nutrition.
2. **Critical thinking.** Graduates will be able to apply their knowledge to independently identify and define original research problems.
3. **Research.** Graduates will demonstrate the ability to design scientific approaches to solve unanswered questions and to select appropriate methods of data analysis.
4. **Communicate.** Graduates will be able to accurately report the results of research data in field of food science through written and oral presentations.
5. **Professional practice.** Graduates will conduct themselves in an ethical and professional manner.

## REQUIREMENTS FOR A DEGREE IN FOOD SCIENCE

### GENERAL DEGREE REQUIREMENTS

**General Coursework Requirements:** Students receiving a M.S. or Ph.D. in Food Science must have satisfactorily completed (Grade C or above) FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D, and FD SC 501. Refer to Tables 1 - 3 for more information.

**Teaching Experience:** All Food Science graduate students have an academic requirement of obtaining teaching experience for their graduate degree. Non-Food Science graduate students advised by Food Science faculty members are expected to serve as TA's as if they were Food Science graduate students. It is the responsibility of all international graduate students to register for the Penn State American English Oral Communicative Proficiency Test (AEOCPT) their first semester (<http://apling.la.psu.edu/programs/about-the-aeocpt>). The Graduate Program Assistant (GPA) will register you for this exam.

Graduate students in their first year are expected to register for FD SC 602, Supervised Experience in College Teaching, in preparation for a Teaching Assistant (TA) assignment beginning in year two. From the second year on, a graduate student can expect to TA once per year. Therefore, M.S. students completing the degree in two years would TA once during their degree program and a Ph.D. student completing the degree in three years would TA twice during their program.

During each Spring semester the GPA informs the Director of Graduate Studies (DGS) of the students eligible for a TA assignment. The DGS then solicits students' preferences for the courses they would like to assist with and faculty preferences for the students they would like to assist them. The DGS then makes tentative assignments based on the following criteria. Required courses with lab sections take priority. Both student and faculty preferences are considered while taking into account our obligation to provide a quality experience to the undergraduates, hence your qualifications (research area) and past TA experience are important. Also considered is your anticipated graduation date so as to avoid a TA assignment in the last semester. If made aware of them, we try to avoid course conflicts and prefer you not TA for your research advisor(s). If you are unfamiliar with the courses, we suggest you start with the Undergraduate Bulletin at <https://bulletins.psu.edu/university-course-descriptions/undergraduate/fdsc/>. For information beyond that, e.g. a course syllabus, contact the course instructor or ask a colleague that has assisted with the course in the past. The DGS then discusses the tentative assignments with the Department Head to arrive at the final TA assignments for the coming academic year.

**Assistantships/Time Limitations:** Departmental Assistantship appointments are normally ½ time and made on an annual basis. Renewal of the assistantship is contingent on satisfactory academic progress.

**Grade-Point Average:** A minimum grade-point average of 3.0 for work done at the University is required for graduation.

**Thesis Research Seminar:** All Food Science graduate students are required to present a seminar on their completed research before their final defense. The presentation is to be 30-45 minutes in length with an abstract and bibliography made available to the audience. This presentation is viewed as a professional obligation to the Department and is considered a general FD SC graduate degree requirement. The seminar should be scheduled preferably during the weekly Departmental Seminar Series. ***The scheduling of this seminar is administered by the student's advisor in conjunction with the GPA. Provide the GPA with an abstract at least two weeks prior to the scheduled seminar.*** The thesis research seminar will be evaluated by several members of the Graduate Faculty in Food Science using the rubric detailed in the Defense Seminar Review Form (see back of this Handbook). This evaluation is part of the on-going assessment of the Graduate Program in Food Science by the Graduate Program Committee and is not part of the thesis defense.

**Electronic Submission of Dissertation and Thesis (ETD):** Electronic submission of the final dissertation (eTD) became a requirement for all doctoral candidates at Penn State starting in fall semester 2006. Master's candidates must submit the final thesis as an electronic document. Formatting requirements are essentially the same for a paper copy and an eTD, but the submission process itself is somewhat different. For additional information on the mechanics of eTD preparation, visit the eTD Web site (<http://gradschool.psu.edu/current-students/etd/about-etds/>).

## **M.S. DEGREE REQUIREMENTS**

The graduate school requirements for the M.S. degree are described in detail in the Graduate Bulletin (<http://bulletins.psu.edu/bulletins/whitebook/index.cfm>). The Food Science Faculty has determined additional general and specific requirements and recommendations. An overview of these requirements is presented in Table 1.

**Graduate Committee:** Any R or Q member of the Penn State Food Science graduate faculty may advise a master's student. In addition, the Department of Food Science requires an M.S. committee of at least three members, to include one additional member of the Food Science Graduate Faculty other than the adviser. If a minor has been selected, a faculty member representing the minor field must be appointed to the committee. ***Please complete the Master's Committee Appointment Signature Form (see back of handbook) to appoint and/or revise the Master's Thesis Committee and provide to the Graduate Program Assistant.*** M.S. students in consultation with their advisor shall establish a thesis committee by the

end of their second semester in the graduate program. All graduate students shall have a minimum of 1 formal thesis committee meeting annually. This meeting will be reported as part of the Annual Graduate Student Evaluation (see form in back of this Handbook) and will be a factor in determining if adequate progress to degree is being made.

**Thesis Seminar:** On completion of your thesis research and prior to the Final Oral Exam/Thesis Defense, you will present a seminar to the Department. **See the Graduate Program Assistant (GPA) to arrange the time and location and submit an abstract to the GPA via email at least two weeks prior to the seminar.** The thesis seminar must be scheduled so that the student's committee can attend.

**Final Oral Examination/Thesis Defense:** A copy of your thesis must be given to each member of your committee two weeks prior to the scheduled Final Oral Examination. The thesis must be in the format acceptable for submission to the Graduate School. Reference the Thesis Guide at <http://gradschool.psu.edu/current-students/etd/thesisdissertationguidepdf/>. The majority of the committee members must agree to proceed with the defense, one week prior to the scheduled Final Oral Examination.

**Time Limitations:** A Master's student must complete his/her program requirements within eight years of first enrollment as a Master's student. A master's candidate who has completed all course work requirements for the degree is not required to register for the final semester in order to graduate or in order to make minor revisions to the thesis and/or to take a final examination for the degree, unless required to do so by the program.

**Continuing onto Ph.D. Program after the M.S. Degree:** Students may consider continuing onto the Ph.D. program upon completion of their M.S. degree. To activate their application for the Ph.D. program a student must complete the Resume Study/Change of Graduate Degree or Major form along with an updated Statement of Purpose, a letter of recommendation from the student's advisor to the Graduate Program Assistant. **Successful completion of the M.S. degree does not guarantee admission to the Ph.D. program.**

## Department of Food Science M.S. Graduate Program Checklist

### Year 1

- \_\_\_\_\_ Attend orientation, Get keys, Set up email account
- \_\_\_\_\_ Take AEOCPT Exam for international students only, (during 1<sup>st</sup> semester; staff will register you)  
[http: aplmg.la.psu.edu/programs/about-the-aeocpt](http://aplmg.la.psu.edu/programs/about-the-aeocpt)
- \_\_\_\_\_ Take Laboratory Safety and Laboratory Hazard Communication – University Park Laboratory Safety @  
[http: www.ehs.psu.edu](http://www.ehs.psu.edu)
- \_\_\_\_\_ Schedule FD SC 500 A, B, C, and D, and FD SC 501
- \_\_\_\_\_ Schedule other 400 and 500 level courses in consultation with advisor
- \_\_\_\_\_ Research
- \_\_\_\_\_ Appoint thesis committee (Submit Master's Committee Appointment Form to Graduate Program Staff)
- \_\_\_\_\_ Develop a coursework plan in consultation with thesis committee
- \_\_\_\_\_ Develop thesis proposal & present to thesis committee
- \_\_\_\_\_ Complete SARI (as part of FD SC 501)
- \_\_\_\_\_ Schedule FD SC 602

### Year 2

- \_\_\_\_\_ Serve as TA
- \_\_\_\_\_ Schedule other 400 and 500 level courses per your coursework plan
- \_\_\_\_\_ Research
- \_\_\_\_\_ Write thesis & manuscript(s)
- \_\_\_\_\_ Activate "Intent to Graduate" the semester you plan to graduate (through LionPATH)
- \_\_\_\_\_ Thesis format review with Graduate School Thesis Office
- \_\_\_\_\_ Schedule Thesis Seminar (see the Graduate Program Assistant to reserve room)
- \_\_\_\_\_ Schedule Thesis Defense (inform Graduate Program Assistant of date, time and location no later than one month prior to defense)
- \_\_\_\_\_ Submit thesis online for Committee, Department Head, & Thesis Office approval. (Due to the Department Head's travel obligations, we recommend you inquire about his schedule prior to submitting thesis.)
- \_\_\_\_\_ Schedule Exit Interview with Department Head
- \_\_\_\_\_ Complete Termination/Transfer Checklist (see back of handbook)  
Return keys, purchase card, and equipment. Complete ERS reports, vacate office

**Please notify Graduate Program Assistant no later than one month prior to your planned departure date**



**Table 1. MINIMUM REQUIREMENTS for M.S. DEGREE IN FOOD SCIENCE AT PENN STATE**  
 (as approved at the Faculty meeting on 6/7/11, corrected by GPC 10/17/13)

	<u># Cr</u>
<b>MINIMUM GRADUATE SCHOOL REQUIREMENTS<sup>1</sup></b>	
Total 400-500-600 level credits needed to graduate	30
Maximum Transfer credits allowed (needs approval)	10
Maximum Non-degree credits allowed (needs approval)	15
Minimum 400-500 level coursework <u>in major</u>	12
Minimum 500-600 level credits required	18
Minimum Thesis research credits	6
Minimum GPA needed to graduate	3.0
Thesis	Yes
Time limit (# years from date of admission)	8
<b>MINIMUM DEPARTMENTAL REQUIREMENTS (which will also fulfill minimum Graduate School Requirements)</b>	
FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D	4
FD SC 501	2
FD SC 602 <sup>2</sup>	1
Other 500-level FD SC courses <sup>3</sup>	6
FD SC 600 credits (minimum needed)	6
Additional 400-500 level courses	6
Statistics (STAT 500 or equivalent) <sup>4</sup>	√
Graduate committee	Yes
Thesis seminar	Yes
Thesis defense	Yes

<sup>1</sup> University Bulletin on Graduate Degree Programs (<https://bulletins.psu.edu/graduate/>)

<sup>2</sup> Beginning with 2<sup>nd</sup> year, M.S. students are required to assist with one course each academic year as a Teaching Assistant (TA). This 1-credit hour for FD SC 602 does not count toward the Graduate School 18 credit requirement of 500-600 level credits, nor towards the total 30 credits required to graduate.

<sup>3</sup> 3 credits of the requirement can be satisfied by 400 level Food Science courses with permission of the advisor.

<sup>4</sup> Students receiving a M.S. in Food Science must have satisfactorily completed at least one 400-500 level course in each of these areas, during their undergraduate or graduate program. If you have already taken these courses at another institution, please send a memo (countersigned by your advisor) and a copy of the syllabi to the Director of Graduate Studies.

**WORKSHEET DESCRIBING HOW M.S. REQUIREMENTS WERE SATISFIED**

This form must be submitted to the Graduate Program Assistant before thesis defense date can be scheduled.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**GRADUATE SCHOOL REQUIREMENTS****COURSE(S) TAKEN TO MEET REQUIREMENTS**

Total 400-500-600 level credits taken (30)

Transfer credits (maximum 10)

Non-degree credits (maximum 15)

400-500 level coursework in major (minimum 12)

500-600 level credits (minimum 18)

Thesis research credits (minimum 6)

Current GPA (minimum 3.0)

# years from date of admission (maximum 8)

**DEPARTMENTAL REQUIREMENTS**

FD SC 500A (1 cr)

FD SC 500B (1 cr)

FD SC 500C (1 cr)

FD SC 500D (1 cr)

FD SC 501 (2 cr)

FD SC 602 (1 cr)

Other 500-level FD SC courses (6 cr)

FD SC 600 credits (6 cr)

Additional 400-500 level courses (6 cr)

Statistics (STAT 500 or equivalent)

Please also attach the following:

- Publications resulting from your thesis work (please list complete citation for articles published and also list titles and authorship of manuscripts planned or in preparation).
- Presentations at scientific meetings based on your thesis work (please list title and authorship on presentations, both oral and poster sessions, at regional or national scientific meetings).
- Awards (please list awards received at professional meetings and all scholarships and fellowships awarded during your graduate studies at Penn State).
- Please provide title and location of your employment after graduation.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Advisor Signature

\_\_\_\_\_  
Date

## **Ph.D. DEGREE REQUIREMENTS**

The graduate school requirements for the Ph.D. degree are described in detail in the Graduate Bulletin (<http://bulletins.psu.edu/bulletins/whitebook/index.cfm>). The Food Science Faculty has determined additional general and specific requirements and recommendations. An overview of these requirements is presented in Table 2. It should be noted by all students admitted into the Ph.D. program that according to the Graduate School, the graduate student has no official status as a doctoral student and no assurance of acceptance as a doctoral candidate until the Qualifying Examination has been passed.

The Doctor of Philosophy degree is the highest mark of achievement of the University for creative scholarship and research. Doctoral study develops the student's capacity to make significant contributions to knowledge. Except in special cases, a M.S. degree in Food Science is earned before pursuing a Ph.D. degree.

**Electronic Submission of Dissertation and Thesis (eTD):** Electronic submission of the final dissertation (eTD) became a requirement for all doctoral candidates at Penn State starting in fall semester 2006. For additional information on the mechanics of eTD preparation, visit the eTD Web site (<http://gradschool.psu.edu/current-students/etd/about-etds/>).

### **Residence:**

1. Over a twelve-month period the Ph.D. student must spend at least two consecutive semesters, exclusive of summer sessions, as a registered full-time student engaged in academic work at the Penn State campus(es) offering the Ph.D. degree in the student's graduate major program.
  - a. FDSC 601 and FDSC 611 cannot be used to meet this requirement.
2. Full time University employees enrolled in a Ph.D. program must be registered for 6 credits or more in each semester in which residency is declared and must be certified as full time employees by their unit leader. In exceptional cases, the Head of the graduate program may certify to Graduate Enrollment Services that the student is devoting half time or more to graduate studies in lieu of registered credits.
  - a. This requirement must be satisfied at a Penn State campus offering the Ph.D. degree in the student's graduate major program.
  - b. This requirement must be satisfied prior to the semester in which the final oral examination is administered.
3. Nothing in this policy shall preclude individual programs from establishing residency requirements more stringent than the minimum specified herein.
  - a. Any additional degree requirements established by graduate programs must be approved through the Graduate Council curricular review process.
  - b. Additional program specific requirements shall be published and made readily accessible to program students and faculty.

### **Registration Requirements When Course Work Has Been Completed:**

1. A candidate for the Ph.D. degree is required to register continuously for each fall and spring semester from the time the comprehensive examination is passed and the two-semester residence requirement is met until the dissertation is accepted by the doctoral committee and the final oral examination is passed, regardless of whether work is being done on the thesis during this interval. (See [GCAC-513 Registration](#) and [GCAC-514 Continuity of Registration](#)).
  - a. Post-comprehensive Ph.D. students can maintain registration by registering for credits in the usual way, or by registering for noncredit 601 or 611, depending upon whether they are devoting full time or part time to thesis preparation. Note that the least expensive way for a student to maintain full-time status while working on research and thesis preparation is to register for 601. This clearly is the procedure of choice for international students who need to maintain status as full-time students for visa purposes.
  - b. Students may take 601 plus up to 3 additional credits of course work for audit by paying only the dissertation fee. Students wishing to take up to 3 additional credits of course work for credit, i.e., 590, 602, etc., with 601 may do so by paying the dissertation fee and an additional flat fee. Enrolling for either 3 credits for audit or credit will be the maximum a

- student may take with SUBJ 601 without special approval by the Graduate School. NOTE: Registration for additional credits above this will incur an additional charge at the appropriate tuition per-credit rate (in state or out of state).
- c. Students wishing to take more than 3 additional credits of course work must register for 600 or 611 (i.e., not for 601, which is full-time thesis preparation).
  - d. If a Ph.D. student will not be in residence for an extended period for compelling reasons, the director of Graduate Enrollment Services will consider a petition for a waiver of the continuous registration requirement. The petition must come from the doctoral committee chair and carry the endorsement of the department or program chair.
2. Although there is no continuous registration requirement for master's students, individual programs may require it. It should be noted, moreover, that:
    - a. proper registration is expected of all graduate students (see [GCAC-513 Registration](#));
    - b. graduate assistants must carry the prescribed credit loads (see [GSAD-501 Credit Loads and Academic Status for Graduate Assistants](#)); and
    - c. because of visa considerations, international students typically will register every semester, no matter what their degree objectives (see [GSAD-501 Credit Loads for International Students](#)).
  3. See MS requirements.
  4. Students who only need to submit their intent to graduate should not complete an application to resume study. These students should contact their graduate program to have their records activated in order to submit their intent to graduate.
  5. This policy only applies to students who have already satisfied all course requirements. Students who still need to enroll in courses must complete an application to resume study. ([See GCAC-514 Continuity of Registration](#)).

**Time Limitations:** A student devoting half-time (9 to 12 credits per semester) to graduate studies will normally require three years beyond the Master's degree to earn the Ph.D. degree.

1. A Ph.D. student is required to complete the program, including acceptance of the doctoral dissertation, within eight years after the date of successful completion of the qualifying examination.
2. Individual graduate programs may set shorter time limits.
3. Extensions may be granted by the director of Graduate Enrollment Services in appropriate circumstances.

## Department of Food Science Ph.D. Graduate Program Checklist

### Year 1

- Attend orientation, Get Keys, Set up Email account
- Take AEOCPT Exam for international students only, (during 1<sup>st</sup> semester; staff will register you)  
[http: aplng.la.psu.edu/programs/about-the-aeocpt](http://aplng.la.psu.edu/programs/about-the-aeocpt)
- Take Laboratory Safety and Laboratory Hazard Communication – University Park Laboratory Safety  
@ [http: www.ehs.psu.edu](http://www.ehs.psu.edu)
- Schedule FD SC 500 A, B, C, D and FD SC 501
- Schedule other 400 and 500 level courses in consultation with advisor
- Research
- Develop a coursework plan in consultation with thesis committee
- Schedule Qualifying Exam/English Competency during first semester
- Schedule Qualifying Exam/Science Competency
- Complete SARI (as part of FD SC 501)
- Schedule FD SC 602

### Year 2

- Schedule FD SC 602 (along with your TA assignment)/Serve as TA
- Schedule other courses per your coursework plan
- Research
- Appoint Doctoral Committee (Give form to Graduate Program Assistant for processing)
- Develop thesis proposal & present to committee
- Schedule Comprehensive Exam with committee (Must inform Graduate Program Assistant at least 3 weeks in advance for processing)

### Year 3

- Serve as TA
- Research
- Write thesis & manuscript(s)
- Activate “Intent to Graduate” the semester you plan to graduate (through LionPATH)
- Schedule Thesis Seminar (see the Graduate Program Assistant to reserve room)
- Schedule Thesis Defense (inform the Graduate Program Assistant of date, time and location one month prior to defense for processing)
- Submit thesis online for Committee, Department Head, & Thesis Office approval. (Due to the Department Head’s travel obligations, we recommend you inquire about his schedule prior to submitting thesis.)
- Schedule Exit Interview with Department Head
- Complete Termination/Transfer Checklist (see back of handbook)
- Return keys, purchase card, and equipment. Complete ERS reports, vacate office

**Please notify Graduate Program Assistant no later than one month prior to your planned departure date**

**Table 2. MINIMUM REQUIREMENTS for Ph.D. DEGREE IN FOOD SCIENCE AT PENN STATE WHEN ENTERING WITH AN M.S. DEGREE OR EQUIVALENT****(as approved at the Faculty meeting on 06/7/2011)**

	<u># Cr</u>
<b>MINIMUM GRADUATE SCHOOL REQUIREMENTS<sup>1</sup></b>	
Maximum Non-degree credits allowed (needs approval)	15
Maximum Transfer credits allowed (needs approval)	10
Qualifying exam	Yes
Comprehensive exam	Yes
Thesis	Yes
Residency (# semesters) <sup>2</sup>	2
Minimum GPA needed to graduate	3.0
Time limit (# years from date of passing qualifying exam)	8

The Graduate School has no minimum credit hour requirement for the Ph.D. program. However, the Department of Food Science requires that the following list of courses be completed.

**MINIMUM DEPARTMENTAL REQUIREMENTS (which will also fulfill minimum Graduate School Requirements)**

FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D <sup>3</sup>	4
FD SC 501 <sup>3</sup>	2
FD SC 602 <sup>4</sup>	2 semesters of 1 cr. each
Statistics (STAT 500 or equivalent) <sup>5</sup>	√
Additional 500-level courses <sup>6</sup>	6
Qualifying exam	Yes
Doctoral committee	Yes
Comprehensive exam	Yes
Thesis seminar	Yes
Thesis defense	Yes

<sup>1</sup> University Bulletin on Graduate Degree Programs (<https://bulletins.psu.edu/graduate/>)

<sup>2</sup> Two semesters within a 12-month period; summer session is not considered a semester.

<sup>3</sup> Not needed if student received credit for course during master's degree program at Penn State.

<sup>4</sup> Beginning with 2<sup>nd</sup> year, Ph.D. students are required to assist with one course per academic year as a Teaching Assistant (TA).

<sup>5</sup> Students receiving a Ph.D. in Food Science must have satisfactorily completed at least one 400-500 level course in each of these areas, during their undergraduate or graduate program.

<sup>6</sup> 3 credits of the requirement can be satisfied by 400 level Food Science courses with permission of the advisor.

**WORKSHEET DESCRIBING HOW PH.D. COURSEWORK REQUIREMENTS WERE SATISFIED FOR STUDENTS ENTERING PH.D. PROGRAM WITH AN M.S. DEGREE**

**This form must be submitted to the Graduate Program Assistant before thesis defense date can be scheduled.**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**GRADUATE SCHOOL REQUIREMENTS<sup>1</sup>**

Non-degree credits (maximum 15)

Transfer credits (maximum 10)

Qualifying exam

Comprehensive exam

Thesis

Yes

Yes

Yes

Residency (minimum 2 semesters)

Current GPA (minimum 3.0)

# years from date of passing qualifying exam (Maximum 8)

**COURSE(S) TAKEN TO MEET REQUIREMENTS****DEPARTMENTAL REQUIREMENTS**

FD SC 500A (1 cr)

FD SC 500B (1 cr)

FD SC 500C (1 cr)

FD SC 500D (1 cr)

FD SC 501 (2 cr)

FD SC 602 (2 semesters x 1 cr)

Statistics (STAT 500 or equivalent)

Additional 500-level courses (6 cr)

Date of Qualifying exam

Date of Comprehensive exam

Please also provide the following information:

- Publications resulting from your thesis work (please list complete citation for articles published and also list titles and authorship of manuscripts planned or in preparation).
- Presentations at scientific meetings based on your thesis work (please list title and authorship on presentations, both oral and poster sessions, at regional or national scientific meetings).
- Awards (please list all scholarships and fellowships awarded during your graduate studies at Penn State).
- Please provide title and location of your employment after graduation.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Advisor Signature

\_\_\_\_\_  
Date

## **ENGLISH COMPETENCY EXAMINATION**

1. Every graduate program shall have a formal mechanism for assessing and improving English language competence of both domestic and international students. This mechanism, to include guidelines and evaluation criteria, must be presented in the graduate program's handbook, which must be provided to the student upon matriculation. If English language competence is assessed contemporaneously with another assessment, it should not be conflated with the assessment of disciplinary knowledge, analytical thinking, or other skills.
2. Assessment shall include:
  - a. Original writing of a length and complexity suitable for assessing high-level English language competence.
  - b. An oral component that assesses the student's listening, comprehension, and speaking skills.
3. The AEOCPT, TOEFL and/or IELTS tests do not adequately assess the level of English competence expected of a doctoral degree candidate and for conferral of a doctoral degree from Penn State. Consequently, these tests do not in themselves constitute sufficient forms of assessment of English competence.
4. Programs and advisers shall identify any areas of English competence requiring improvement before or at the Qualifying Examination and direct students into appropriate activities and support services to improve their English skills.
5. Programs must document the outcome of the assessment of English competence, including any areas requiring improvement and remedial steps, at the time of reporting the outcome of the Qualifying Examination.
6. English competence shall be formally attested to by the graduate program before the doctoral student's Comprehensive Examination is scheduled.

All Ph.D. students must pass the English Competency Examination. The Food Science Department defines the level of speaking competency as the ability to convey scientific and general information in an understandable manner, and the level of writing competency as the ability to relate scientific information in clear and easy-to-understand language that uses correct English grammar, syntax, spelling and punctuation. All Ph.D. students must take this exam, including domestic and international students.

The Director of Graduate Studies (DGS) will conduct the assessment of speaking and writing competency at the beginning of Fall and Spring semesters. Within the first month of their first semester in residence in the Food Science program, all new Ph.D. candidates will be asked to:

1. Write a one-page summary on a subject within Food Science in one hour to test writing competency. The Director of Graduate Studies will determine the topic and supervise the administration of this writing exercise. The writing will be evaluated by the Director of Graduate Studies.
2. Complete a half-hour oral interview with the Director of Graduate Studies to test speaking competency.

The Director of Graduate Studies will evaluate each candidate's performance within two weeks and report the outcome to the candidate.

### **Improvement of English Competency by Students with Deficiencies**

A Ph.D. candidate must satisfactorily complete both parts of the English competency examination. In case of unsatisfactory performance in one or more parts, a recommendation to take appropriate remedial course(s) will be made. Those students whose writing is judged below acceptable standards will be required to take one or more appropriate technical writing courses. Those students whose speaking is judged below acceptable standards will be required to take ESL 115G, 117G or 118G or other appropriate courses.



**Attainment of Competency**

For candidates who performed unsatisfactorily during one or both parts of the English competency examination, assurance of acceptable writing and/or speaking competency will be based on a second evaluation of his/her performance on the written and oral portions of the Comprehensive Examination.

**Request for Exemption from English Competency Examination**

The student must submit a one-page petition justifying the exemption to the Director of Graduate Studies along with evidence for speaking competency and writing competency. For example, the student may have published a research paper (in English) as primary author, and the student may have recently presented an oral presentation (in English) at a scientific meeting. A copy of the manuscript and presentation abstract should be attached to the petition. Furthermore, the student's major advisor will also be required to sign the petition. By signing the petition, the advisor is attesting to the fact that the student has attained a level of speaking and writing competency in English.

**QUALIFYING EXAMINATION**

1. The primary purpose of the Qualifying Examination is to provide an early assessment of whether the student has the potential to develop the knowledge, skills, and attributes the program has defined in its formal Learning Objectives, including evidence of critical thinking skills, necessary for a successful researcher in the disciplinary field.
  - a. The Qualifying Examination is conducted early in a student's program to ensure that the considerable investment of time, resources, and effort required by the student has a high likelihood of leading to completion of the Ph.D.
  - b. Additionally, the Qualifying Examination may assess if the student is well grounded in the fundamental knowledge of the discipline.
2. Scheduling:
  - a. It is the responsibility of the major Graduate Program Head to ensure that the Qualifying Examination is scheduled within the required time limits as defined below.
  - b. All students must take the Qualifying Examination within three semesters (not counting the summer semester) of entry into the doctoral program.
    - i. Students who have been identified as master's-along-the-way upon admission into the graduate program may be allowed an extension such that the three-semester time limit will begin upon completion of the master's degree.
    - ii. Students pursuing dual-title degrees must take the Qualifying Examination within four semesters (not counting the summer semester) of entry into the doctoral program.<sup>1</sup>
  - c. To be eligible to take the Qualifying Examination the student must have:
    - i. Earned at least 18 credits in courses eligible to be counted toward the graduate degree (these may be graduate credits earned previously at other recognized institutions from which transfer credits would be accepted) or the equivalent as determined and documented by the program.
    - ii. A grade-point average of 3.00 or greater for work done at the University while a graduate student.
    - iii. No incomplete or deferred grades.

### 3. Content:

- a. The student's major program must establish guidelines for the Qualifying Examination that are uniformly applied to all students. These guidelines and evaluation criteria must be presented in the graduate program's handbook, which must be provided to the student upon matriculation. These guidelines must include:
  - i. The timing and the format of the examination.
  - ii. Clear criteria for evaluation.
  - iii. The program's policy describing the student's options in case of failure. The policy must include:
    - i. If retaking the examination after failure is allowed.
    - ii. If retaking the examination after failure is permitted whether there is a limit to the number of attempts.
    - iii. If students who have failed the final attempt will be dismissed from the program or may be allowed to change to the master's degree.
- b. If the student is also enrolled in a dual-title graduate degree program,
  - i. The Qualifying Examination requirement shall be satisfied by one of the following:
    - i. Ideally, a single Qualifying Examination that incorporates content from both the graduate major program and the dual-title program. The Qualifying Examination Committee must include at least one member of the Graduate Faculty from the dual-title program.
      - i. In cases where the timing of the Qualifying Examination in the major area precludes the inclusion of the dual-title area, the dual-title program may choose to examine proficiency in the dual-title area at a later time, but no later than the end of the fourth semester (not counting summer semesters) of entry into the major doctoral program.
    - ii. Dual-title programs may choose to allow the Qualifying Examination in the major area alone to satisfy the requirements for the dual-title program.
  - ii. The means of establishing proficiency in the dual-title area must be defined in the major program proposal adopting the dual-title degree and must be included in the student handbook for each dual-title program.

### 4. Format of Exam:

- a. Each graduate program will determine the composition of its Qualifying Examination Committee. All members of the Qualifying Examination Committee

must be members of the Graduate Faculty, with the majority drawn from the faculty of the program.

- b. The graduate program administering the Qualifying Examination may choose from the following general formats with the specific details being left to the discretion of the program. The exam can be:
    - i. a written, oral, or written and oral assessment of a student's ability to conduct doctoral-level research as determined by the graduate program; or
    - ii. an assessment of a thesis submitted in fulfillment of a research master's degree in the major or a related program.
5. **Outcome:** At the conclusion of the evaluation, students must be informed of the results in writing. In cases when the Qualifying Examination is not passed, the student must also be notified whether a re-examination is offered or if the student will be terminated from the Ph.D. program. If the student will be terminated from the Ph.D. program, they must also be informed if they will be allowed to change to the master's degree.
  6. **Reporting:** The same report of all Qualifying Examinations, regardless of the outcome, must be reported to both the student and Graduate Enrollment Services as soon as possible but no later than 30 days following the conclusion of the assessment of the student; this includes both the initial examination, and any subsequent retakes.
    - a. The report will include any identified deficiencies as well as any remedial steps the committee recommends or requires the student to undertake. Unresolved deficiencies from other assessments (e.g., English Competence, see [GCAC-605](#)) should be included.
    - b. Following the examination, the Qualifying Examination Committee should also share any recommendations for further study or preparation, as well as any remedial steps the committee requires the student to undertake with the student's Academic or Dissertation adviser and Ph.D. Committee (when formed).
    - c. While it is common and helpful for a student and the student's Ph.D. Committee to use the information gathered to further guide the student's program, such discussions are not part of the examination itself.

<sup>1</sup> The additional time allowed for dual-title degree students is in recognition of the additional requirements they may need to fulfill.

**Committee Composition:** The Ph.D. Qualifying Examination Committee (Committee) will be composed of four Food Science faculty members representing the diversity of disciplines within Food Science. Members will be appointed by the Head for a period of four years and will become Chair of the Committee in their fourth year. All Committee members will have equal rights and voting privileges. When a member of the Committee has a conflict of interest (e.g. advisor of the Ph.D. student being evaluated) that member will be responsible for finding a substitute within the Food Science Faculty in the field they represent and notifying the Committee and the student of the change. In the event the Chair of the Committee has a conflict of interest, the next senior member of the Committee will act as Chair.

**Protocol and Evaluation:** The Qualifying Examination must be taken within three semesters of entry into the doctoral program. All Ph.D. students must have a M.S. degree or have completed at least 18 credits of graduate coursework beyond a Baccalaureate degree, prior to taking the Qualifying Examination. Approximately two months before conducting the Qualifying Examination, the Chair of the Qualifying Examination Committee will ask all Food Science graduate students to inform the Chair of their intent to take the Qualifying Examination. Approximately one month prior to the Qualifying Examination, the Chair of the Qualifying Examination Committee will meet collectively with those students scheduled to take the Qualifying Examination to clarify the protocol and evaluation criteria.

Students must pass the Qualifying Examination to be considered a Ph.D. candidate. The Qualifying Examination will be administered consistent with the policy of the Graduate School above. The general guidelines are described in the Graduate Degree Programs Bulletin (<https://bulletins.psu.edu/graduate/>).

What follows is a description of the specific evaluation criteria as developed by the Graduate Faculty in Food Science and administered by the Qualifying Committee under the direction of the Department Head, who is also Head of the Food Science Graduate Program.

The Qualifying Examination will be administered during January and May, preferably when classes are NOT in session. The chair of the Qualifying Committee will meet with the students in December and April to explain the procedures and expectations for the exam.

Before taking the Qualifying Examination, students should have knowledge of the following areas with an emphasis on principles/concepts rather than details:

1. The scientific method, including hypothesis development, basic experimental design, and methods of data analysis.
2. Scientific ethics and academic integrity.
3. How to effectively communicate scientific research information to a wide variety of audiences.
4. Principles of chemistry and biochemistry of foods, including food ingredients and food systems from raw materials to during and after processing.
5. Principles of food microbiology, including beneficial and detrimental aspects of microorganisms in foods, as well as methods used for detection, enumeration and control of microorganisms important in foods.
6. Principles of nutrition with emphasis on aspects of human physiology and metabolism, nutrient intake and utilization, nutrition surveillance and dietary recommendations, and the impact of food intake patterns on health.
7. Principles of food engineering, including fluid flow and heat transfer, as applied to unit operations in food processing and manufacture.

Two weeks before the Qualifying Examination, the student shall submit to the Department's Graduate Program Assistant the following:

1. A copy of the master's thesis and any relevant published work.
2. Transcripts of undergraduate and graduate course work and GRE scores.
3. Statement of purpose for Ph.D. studies (professional goals, major research interests and plan for completing Ph.D.).
4. A list of courses taken and to be taken at Penn State.

The materials will be made available in a file in the main office for review by the Qualifying Examination Committee prior to the Qualifying Examination.

The Qualifying Examination will consist of an oral examination. The Qualifying Examination is used to evaluate a student's potential for Ph.D. research, including the student's ability to think critically, analyze research problems, and communicate means to approach and examine these problems. This examination serves to validate the transformation in the student's status from graduate student accepted to work toward the Ph.D. to graduate student recognized as a candidate for the Ph.D. in the Food Science Graduate Program. In general, as administered in the Food Science Graduate Program, this examination is designed to test two things: 1) the student's ability to engage in critical thinking within the field of food science, and 2) the student's knowledge in broad areas of the field, with an emphasis on understanding central principles and concepts rather than specific factual detail.

Two weeks prior to the Qualifying examination, the student will be given a research paper of broad relevance to Food Science. This paper will be selected by the Qualifying Examination Committee. An ideal research paper will describe food science research and be published in a core food science journal (e.g. *Journal of Food Science*, *Journal of Agricultural & Food Chemistry*, *Food Microbiology*, *Journal of Food Engineering*, *American Journal of Clinical Nutrition*). The research paper should be broadly comprehensible to all members of the Committee and should have some flaws that the student can identify and criticize.

The exam will begin with the student presenting a **30-minute** critique of the research paper. The student shall share a copy of the presentation with the Qualifying Committee members. Students may use visuals aids and notes, but a written draft that could be read from will not be permitted. After the presentation, the Committee will have the opportunity to ask questions regarding information presented in the paper, primarily to evaluate overall understanding of the work and how it is related to other areas in Food Science. The aim of these questions is to determine the student's ability to show a clear understanding of the data presented and to demonstrate competency in explaining research data to a scientific group in a logical and precise manner. It is expected that the student will have a thorough understanding of all aspects of the research paper including background literature and all methodology used.

**Decision of the Qualifying Examination Committee and Communication of Results:** The primary outcome of the examination is either pass, fail with an opportunity for a re-examination, or fail. To pass, the student must receive at least 3 out of 4 positive votes from the Committee. If the decision is to fail the student (less than 3 of 4 positive votes from the Committee) the Committee will then vote to determine whether the student may retake the Qualifying Examination. At least 3 out of 4 positive votes are required to allow a retake and, they must take the Qualifying Examination the following January or May. Students will only be given one opportunity to retake the Qualifying Examination. The result of the Qualifying Examination (pass, fail with the opportunity to retake, or fail with no opportunity to retake) will be communicated to each student immediately after their Qualifying Examination. Within a week after all of the Qualifying Examinations are finished, each student taking the Qualifying Exam, their advisor(s), all members of the Qualifying Examination Committee, the Department Head and the Director of Graduate Studies will be notified in writing as to the outcome of the Qualifying Examination, whether the Qualifying Examination Committee perceived any specific deficiencies and what coursework and/or other work are recommended to remedy the perceived deficiencies.

Specifically, the Qualifying Committee will assess the following student abilities with the goal of determining the student's potential to successfully conduct independent research and complete a doctoral degree in food science:

1. Ability to identify the hypothesis, objectives, and major experiments in a peer-reviewed scientific publication.
2. Ability to identify the strengths and weaknesses related to the hypothesis, experimental approaches, and data interpretation.
3. Ability to place a particular study into the broader context of the scientific literature in terms of its significance to food and related science (the extent to which it advances the field, answers important long-standing questions, raises new questions), and industry and public health stakeholders (is the topic important to industry, public health, is it translatable beyond the laboratory).
4. Ability to outline experiments to extent or improve the studies reported in a particular peer-reviewed publication.
5. Ability to answer questions rooted in, but peripheral to, a particular peer-reviewed scientific study. The answers should demonstrate of critical thinking, a broad knowledge of food science and related disciplines, and the ability to formulate an answer with incomplete information/expertise, and intellectual honesty (i.e. student is aware and forthcoming about what they know and what they do not know, and are willing to share that information with the committee).
6. Ability to summarize and effectively communicate study design, key findings, implications, and strengths and weaknesses of a particular study.

The Qualifying Committee will evaluate each student in terms of each of the above abilities and score them as Outstanding, Very Good, Acceptable, Marginal or Not acceptable. In order for the student to pass the examination, he or she should be Average or greater in 5 of the 6 abilities.

Ability	Ability Description	Outstanding	Very Good	Acceptable	Marginal	Not acceptable
1	Structure of a study					
2	Strengths & weaknesses					
3	Significance & implications					
4	Future Studies					
5	Speculating/Hypothesizing					
6	Scientific Communication					

## **DOCTORAL COMMITTEE**

1. Each Ph.D. student shall have an appointed Ph.D. Committee to guide their research training.
2. Ph.D. Committee Appointment: A student's Ph.D. Committee shall be nominated to the Graduate School by the student's major Graduate Program Head as soon as possible after the student has secured an adviser, but in no event later than one calendar year following the date of the student's successful completion of the Qualifying Examination unless an alternative timing is approved through the Graduate Council's curricular review process.
  - a. The guiding principle for members of the Ph.D. Committee is the success of the student.
  - b. While it is expected that the Graduate Program Head will consult with the student, the student's adviser, and as appropriate the dual-title and/or minor Graduate Program Head, the Graduate Program Head is responsible for nominating members of the Ph.D. Committee to the Graduate School, designating Ph.D. Committee member roles, and ensuring appropriate Ph.D. Committee composition that is in the best interests of the student and the completion of their dissertation. Ph.D. Committees must be approved by the Dean of the Graduate School.
  - c. The Dean of the Graduate School may appoint one or more members to the Ph.D. Committee in addition to those recommended by the Graduate Program Head.
3. Minimum Ph.D. Committee Membership: A student's Ph.D. Committee shall consist at minimum of four members of the Graduate Faculty, each of whom shall be in a position to contribute substantially to the student's education. At least two of these four members shall be from the student's major graduate program.
4. Ph.D. Committee Member Roles: Each Committee shall have a Ph.D. Committee Chair, Outside Field Member, Outside Unit Member, and include the student's Dissertation Adviser. The Ph.D. Committee Chair and Dissertation Adviser may be one and the same. For students pursuing a graduate minor, the Ph.D. Committee shall include a Minor Field Program Member representing each graduate minor. Ph.D. Committees may also include other participants who are not members of the Graduate Faculty but are otherwise qualified and have particular expertise in the student's research area. All Ph.D. Committee Members are expected to participate fully in the affairs of the Ph.D. Committee.
  - a. Ph.D. Committee Chair: The Ph.D. Committee Chair shall be a member of the Graduate Faculty and the student's major Graduate Program. The Ph.D. Committee Chair is responsible for arranging and conducting all Ph.D. Committee Meetings, ensuring that all Graduate Program, Graduate Council, and Graduate School standards and requirements relative to the doctoral degree are met, and that any conditions set by the Ph.D. Committee are fulfilled.
    - i. For students pursuing dual-title degrees, either the Ph.D. Committee Chair or a co-Chair must be a Graduate Faculty member of the dual-title program.
  - b. Dissertation Adviser: Each Committee shall include the student's Dissertation Adviser. The Dissertation Adviser is responsible for the day-to-day guidance of the student's dissertation research, and academic and professional development.
    - i. Where day-to-day guidance is shared by two members of the Graduate Faculty, both may be appointed to the Ph.D. Committee as co-Advisers.

- ii. Co-advisers are jointly and severally responsible for the day-to-day guidance of the student's dissertation research, and academic and professional development.
    - iii. A Dissertation Advisor may also serve as the Ph.D. Committee Chair (or co-Chair).
  - c. Outside Field Member: Each Ph.D. Committee shall have appointed at least one Outside Field Member. The Outside Field Member must have a disciplinary expertise different from the student's primary field of study and is responsible for broadening the disciplinary perspective available to the student and the Ph.D. Committee. The Outside Field Member may be from student's graduate program but may not also serve as a major program member. In cases where the candidate is also pursuing a dual-title program, any dual-title Graduate Faculty member of the Ph.D. Committee may serve as the Outside Field Member.
  - d. Outside Unit Member(s): Each Ph.D. Committee shall have appointed at least one Outside Unit Member. The Outside Unit Member is responsible for bringing to the attention of the student and the Ph.D. Committee [non-academic] issues (including, for example, conflicts of interest) that may impact a student's progress. Outside Unit Members must have their primary academic appointment in an administrative unit different than the Ph.D. Committee Chair(s) and Dissertation Adviser(s).
  - e. Minor Program Member(s): Ph.D. Committees assigned to students pursuing graduate minors shall include at least one Minor Program Member for each graduate minor. Each graduate minor pursued by a student shall be represented by at least one Minor Program Member who is a member of the Graduate Faculty and a member of that minor graduate program. Minor Program Members are responsible for providing the student and the Ph.D. Committee with information, advice and perspective on student progress in fulfilling the graduate minor requirements in the graduate program they represent.
  - f. Special Members: Ph.D. Committees may include Special Members who are not members of the Graduate Faculty but are otherwise qualified and have particular expertise in the student's research area. Special Members do not have to be affiliated with Penn State.
5. Annual Review of Ph.D. Committee Membership: It is crucial that all committee members remain actively engaged in the guidance of the student through the completion of their program. The Graduate Program Head of the student's major program shall review annually each student's Ph.D. Committee to ensure that all Ph.D. Committee members continue to qualify for service in their designated roles. The Graduate Program Head is responsible for promptly making any necessary changes and informing the Graduate School.
6. When Ph.D. Committee Members Retire or Become Emeritus
- a. Ph.D. Committee Members who retire or become emeritus may continue to serve for the duration of the student's program if they were appointed to the Ph.D. Committee in this role prior to retirement, and they have the continuing approval of the student's Graduate Program Head and the Graduate School. (In the case of students pursuing a dual-title degree, the dual-title Graduate Program Head must also approve.)
  - b. As specified in 5 (above) it is the responsibility of the Graduate Program Head to ensure that all Ph.D. Committee members continue to qualify for service in their designated roles. The Graduate Program Head will review the committee membership whenever any committee member retires to ensure that students receive expert faculty guidance through their dissertation project.

7. When Ph.D. Committee Members Leave the University: Ph.D. Committee Members in any role who leave Penn State for reasons other than retiring or becoming emeritus may maintain their committee appointment for up to one year with the approval of the student's Graduate Program Head and the Dean of the Graduate School.
8. Other Changes in Ph.D. Committee Membership: If the need for Ph.D. Committee membership change is required, whether at the time of an annual review or otherwise, the student's major Graduate Program Head will promptly make the necessary changes and notify the director of Graduate Enrollment Services.

**Ph.D. Committee Responsibilities:**

1. The Ph.D. committee is responsible for approving the broad outline of the student's program and should review the program as soon as possible after the student's admission to candidacy. Moreover, continuing communication among the student, the committee chair, the dissertation/performance adviser, and the members of the committee is strongly recommended, to preclude misunderstandings and to develop a collegial relationship between the candidate and the committee.
2. Doctoral Examinations
  - a. The (entire) committee will prepare and administer the examination and evaluate the candidate's performance on the examination. The doctoral examinations (the comprehensive examination and the final oral examination/final performance) are administered/overseen and evaluated by the entire Ph.D. committee.
  - b. If a committee member is unable to participate in any of the doctoral examinations and this results in not enough members serving on the committee (i.e., four or more active members of the Graduate Faculty), another Penn State graduate faculty member will need to be appointed officially to the Ph.D. committee to replace the absent member in order to constitute a legitimate Ph.D. committee. A revised committee appointment form must be submitted to Graduate Enrollment Services, removing the individual as a regular committee member and requesting the replacement committee member. These changes and approvals must occur before the actual examination takes place (ad hoc substitutes are not permitted).
  - c. At least three members of the Ph.D. committee (including the thesis adviser or chair) must be physically present at the comprehensive and at the final oral examination. The graduate student must also be physically present at these examinations. (Thus for a five-person committee, two could participate via distance.) No more than one member may participate via telephone; a second member could participate via interactive videoconferencing. The examination request and a request for exceptions must be submitted to the Dean of the Graduate School for approval at least two weeks prior to the date of the examination. Special arrangements, i.e., requirements for meeting participation via distance, should be communicated to the student and to the Ph.D. committee members well in advance of the examination. The dissertation adviser, as well as the chair of the Ph.D. committee (if not the same individual as the dissertation adviser), along with additional members of the committee to total a minimum of three, also must be physically present at the comprehensive/final examinations. (Thus, for a five-person committee, two members could participate via distance.) Requests for exceptions to allow participation of any committee member via distance must accompany the Examination Request Form, and must be submitted to the director of Graduate Enrollment Services for approval at least two weeks prior to the date of the examination. Of those approved to participate via distance, no more than one member may participate via telephone; any or all of those approved to participate via distance may participate via interactive videoconferencing. Special arrangements, i.e., requirements for meeting participation via distance, must be communicated to the student and all Ph.D. committee members well in advance of the examination.
  - d. A favorable vote of at least two-thirds of the members of the committee is required for passing a comprehensive or a final oral examination. If a candidate fails an examination, it is the responsibility of the Ph.D. committee to determine whether another examination may be



taken. Regardless of the outcome and of the committee's decision about whether to grant a second opportunity, the program head must report the results of each scheduled examination immediately to Graduate Enrollment Services.

- e. Both the dissertation adviser/committee chair and the student are responsible for ensuring the completion of a draft of the dissertation and for adequate consultation with members of the Ph.D. committee well in advance of the final oral examination. Major revisions of the dissertation should be completed before this examination.
- f. It is the responsibility of the doctoral candidate and committee chair/dissertation adviser to provide a copy of the dissertation to each member of the Ph.D. committee at least two weeks before the date of the scheduled examination. The dissertation should be complete and in its final draft, with correct and polished content and style, appropriate notes, bibliography, tables, etc., at the time it is distributed to the committee members. If a committee member finds that the final draft is not correct and polished with respect to content and style, it is his/her responsibility to notify the committee chair/dissertation adviser at least one week in advance of the final oral examination date. The committee member should indicate his/her concerns regarding the draft and may recommend consideration of postponement of the examination to the committee chair/dissertation adviser. The chair/adviser, in consultation with committee members, is responsible for notifying the student and assessing whether the student can make the necessary revisions to the final draft before the examination date. If it is determined that revisions cannot be made in time, the final oral examination must be postponed.
- g. If a committee member is unable to participate in the final oral examination, the member may sign as a special signatory. A revised committee appointment form will need to be submitted to Graduate Enrollment Services, removing the individual as a regular committee member and if it is desired to designate that individual as a special signatory, a memo from the program head must accompany the revised committee form, requesting that the committee member be moved to a special signatory. As noted above, if there are then not enough members serving on the committee (i.e., four or more active members of the Graduate Faculty), another Penn State graduate faculty member will need to be appointed officially to the Ph.D. committee to replace the absent member in order to constitute a legitimate Ph.D. committee. These changes and approvals must occur before the actual examination takes place (ad hoc substitutes are not permitted). If a committee member is unable to attend the final oral examination, he or she will sign as a special signatory after notifying Graduate Enrollment Services (114 Kern) that a committee change must be approved and be made a part of the student's record. (Substitutes are not permitted, but changes in the committee can be made, if needed, through the usual procedures.) These changes and approvals shall occur before the actual examination takes place. The department or program head will notify Graduate Enrollment Services when the candidate is ready to have the comprehensive and the final oral examinations scheduled and will report the results of these examinations to that office.
- h. The committee examines the dissertation, administers the final oral examination, and approves the final dissertation. At least two-thirds of the committee must approve the dissertation.

PhD students in consultation with their advisor shall establish a thesis committee within 1 month of completing the Qualifying Examination. ***Please complete the Doctoral Committee Appointment Signature Form (see back of handbook) to appoint and/or revise the Doctoral Committee and provide to the Graduate Program Assistant for processing.*** All graduate students shall have a minimum of 1 formal thesis committee meeting annually. This meeting will be reported as part of the Annual Graduate Student Evaluation (see form in back of this Handbook) and will be a factor in determining if adequate progress to degree is being made.

## **COMPREHENSIVE EXAMINATION**

1. When a candidate for a doctoral degree has substantially completed all course work, a comprehensive examination is given. The examination is intended to evaluate the candidate's mastery of the major, and if appropriate, the minor field and whether the candidate is prepared to embark upon his/her dissertation research.
2. The graduate student must be in good academic standing and must be registered as a full-time or part-time graduate degree student for the semester in which the comprehensive examination is taken.
3. All candidates are required to have a minimum grade-point average of 3.00 for work done at the University at the time the comprehensive examination is given and may not have deferred or missing grades.
4. Doctoral candidates must have satisfied the English competence and any program-specific communication and foreign language requirement before scheduling the comprehensive examination.
5. The format for the comprehensive examination may be entirely oral, or it may have both a written and an oral component.
6. When a period of more than six years has elapsed between the passing of the comprehensive examination and the completion of the program, the student is required to pass a second comprehensive examination before the final oral examination or final performance will be scheduled.
7. ***The examination is officially scheduled and announced by the Office of Graduate Enrollment Services following recommendation by the doctoral committee chair through the Department Head. Please schedule with the Graduate Program Assistant at least three weeks prior to the oral examination date.***
8. It is expected that comprehensive examinations will take place at the campus location of the graduate center offering the program, and the graduate student must be physically present at the comprehensive examination.
9. If a committee member is unable to participate in any of the doctoral examinations and this results in not enough members serving on the committee (i.e., four or more active members of the Graduate Faculty), another Penn State graduate faculty member will need to be appointed officially to the Ph.D. committee to replace the absent member in order to constitute a legitimate Ph.D. committee. A revised committee appointment form must be submitted to Graduate Enrollment Services, removing the individual as a regular committee member and requesting the replacement committee member. These changes and approvals must occur before the actual examination takes place (ad hoc substitutes are not permitted).
10. At least three members of the Ph.D. committee (including the thesis adviser or chair) must be physically present at the comprehensive and at the final oral examination. The graduate student must also be physically present at these examinations. (Thus for a five-person committee, two could participate via distance.) No more than one member may participate via telephone; a second member could participate via interactive videoconferencing. The examination request and a request for exceptions must be submitted to the dean of the Graduate School for approval at least two weeks prior to the date of the examination. Special arrangements, i.e., requirements for meeting participation via distance, should be communicated to the student and to the Ph.D. committee members well in advance of the examination. The dissertation adviser, as well as the chair of the Ph.D. committee (if not the same individual as the dissertation adviser), along with additional members of the committee to total a minimum of three, also must be physically present at the comprehensive/final examinations. (Thus, for a five-person committee, two members could participate via distance.)

Requests for exceptions to allow participation of any committee member via distance must accompany the Examination Request Form and must be submitted to the director of Graduate Enrollment Services for approval at least two weeks prior to the date of the examination. Of those approved to participate via distance, no more than one member may participate via telephone; any or all of those approved to participate via distance may participate via interactive videoconferencing. Special arrangements, i.e., requirements for meeting participation via distance, must be communicated to the student and all Ph.D. committee members well in advance of the examination.

11. A favorable vote of at least two-thirds of the members of the committee is required for passing a comprehensive or final oral examination. If a candidate fails an examination, it is the responsibility of the Ph.D. committee to determine whether the student will be granted a second opportunity to take the examination. Regardless of the outcome and of the committee's decision about whether to grant a second opportunity, the program head must report the results of each scheduled examination immediately to Graduate Enrollment Services.

The Ph.D. Comprehensive Exam is a thorough test of the student's knowledge and intellectual capability. The student is expected to demonstrate a mastery of Food Science and be able to utilize that knowledge to interpret research and creatively solve problems.

The examination shall consist of both a written and oral section. The written portion will consist of a research proposal not to exceed 20 pages in length. The format and topic of the written proposal will be determined by the thesis advisor(s), in consultation with the committee and the candidate. The proposal will be distributed to each member of the student's committee at least two weeks prior to the oral portion of the examination. The oral examination should be comprehensive in nature and not merely focus on the student's thesis research (questions are not limited to the narrow subject matter under investigation).

A favorable vote of at least two-thirds of the members of the committee is required for passing. Based on the student's performance, the committee may recommend to the Dean of the Graduate School one of the following actions:

1. That the candidate be passed,
2. That the candidate be re-examined at a later date,
3. That the candidate be failed and dropped from the Ph.D. program.

Students who pass their comprehensive exam can register for FD SC 601 (Ph.D. dissertation full time) for zero credits. Tuition is not charged for this course but there is a Ph.D. Dissertation Fee.

### **THESIS SEMINAR**

On completion of your thesis research and prior to the Final Oral Exam, you will present a seminar to the Department. See the Graduate Program Assistant to arrange the time and location and submit an abstract to the GPA via email at least two weeks prior to the seminar. The thesis seminar must be scheduled so that the student's committee can attend.

### **FINAL ORAL EXAMINATION/THESIS DEFENSE**

1. The doctoral candidate who has satisfied all other requirements for the degree will be scheduled by the Office of Graduate Enrollment Services, on the recommendation of the head of the graduate program, to take a final oral examination. Typically, the final oral examination may not be scheduled until at least three months have elapsed since the comprehensive examination was passed, although the director of Graduate Enrollment Services may grant a waiver in appropriate cases.
2. The graduate student must be in good academic standing and must be registered as a full-time or part-time graduate degree student for the semester in which the final oral examination is taken.
3. All candidates are required to have a minimum grade-point average of 3.00 for work done at the University at the time the final oral examination is given and may not have deferred or missing grades.
4. ***The examination is officially scheduled and announced by the Office of Graduate Enrollment Services following recommendation by the doctoral committee chair through the Department***

**Head. Please schedule with the Graduate Program Assistant at least three weeks prior to the oral examination date.**

5. It is expected that doctoral examinations will take place at the campus location of the graduate center offering the program, and the graduate student must be physically present at any doctoral examination.
6. The final examination of the doctoral candidate is an oral examination administered and evaluated by the entire Ph.D. committee. It consists of an oral presentation of the dissertation by the candidate and a period of questions and responses. These will relate in large part to the dissertation, but may cover the candidate's entire program of study, because a major purpose of the examination is also to assess the general scholarly attainments of the candidate. The portion of the examination in which the dissertation is presented is open to the University community and the public; therefore, it is expected that the examination will take place at the campus location of the academic unit offering the program.
7. The final oral examination is administered/overseen and evaluated by the entire Ph.D. committee. (See [GCAC-603 Ph.D. Committee Responsibilities](#))
8. If a committee member is unable to participate in any of the doctoral examinations and this results in not enough members serving on the committee (i.e., four or more active members of the Graduate Faculty), another Penn State graduate faculty member will need to be appointed officially to the Ph.D. committee to replace the absent member in order to constitute a legitimate Ph.D. committee. A revised committee appointment form must be submitted to Graduate Enrollment Services, removing the individual as a regular committee member and requesting the replacement committee member. These changes and approvals must occur before the actual examination takes place (ad hoc substitutes are not permitted).
9. At least three members of the Ph.D. committee (including the thesis adviser or chair) must be physically present at the comprehensive and at the final oral examination. The graduate student must also be physically present at these examinations. (Thus for a five-person committee, two could participate via distance.) No more than one member may participate via telephone; a second member could participate via interactive videoconferencing. The examination request and a request for exceptions must be submitted to the dean of the Graduate School for approval at least two weeks prior to the date of the examination. Special arrangements, i.e., requirements for meeting participation via distance, should be communicated to the student and to the Ph.D. committee members well in advance of the examination. The dissertation adviser, as well as the chair of the Ph.D. committee (if not the same individual as the dissertation adviser), along with additional members of the committee to total a minimum of three, also must be physically present at the comprehensive/final examinations. (Thus, for a five-person committee, two members could participate via distance.) Requests for exceptions to allow participation of any committee member via distance must accompany the Examination Request Form and must be submitted to the director of Graduate Enrollment Services for approval at least two weeks prior to the date of the examination. Of those approved to participate via distance, no more than one member may participate via telephone; any or all of those approved to participate via distance may participate via interactive videoconferencing. Special arrangements, i.e., requirements for meeting participation via distance, must be communicated to the student and all Ph.D. committee members well in advance of the examination.
10. A favorable vote of at least two-thirds of the members of the committee is required for passing a comprehensive or a final oral examination. If a candidate fails an examination, it is the responsibility of the Ph.D. committee to determine whether another examination may be taken. Regardless of the outcome and of the committee's decision about whether to grant a second opportunity, the program head must report the results of each scheduled examination immediately to Graduate Enrollment Services.
11. Both the dissertation adviser/committee chair and the student are responsible for ensuring the completion of a draft of the dissertation and for adequate consultation with members of the Ph.D. committee well in advance of the final oral examination. Major revisions of the dissertation should be completed before this examination. Reference the Thesis Guide at <http://gradschool.psu.edu/current-students/etd/thesisdissertationguidepdf/>.

12. It is the responsibility of the doctoral candidate and committee chair/dissertation adviser to provide a copy of the dissertation to each member of the Ph.D. committee at least two weeks before the date of the scheduled examination. The dissertation should be complete and in its final draft, with correct and polished content and style, appropriate notes, bibliography, tables, etc., at the time it is distributed to the committee members. If a committee member finds that the final draft is not correct and polished with respect to content and style, it is his/her responsibility to notify the committee chair/dissertation adviser at least one week in advance of the final oral examination date. The committee member should indicate his/her concerns regarding the draft and may recommend consideration of postponement of the examination to the committee chair/dissertation adviser. The chair/adviser, in consultation with committee members, is responsible for notifying the student and assessing whether the student can make the necessary revisions to the final draft before the examination date. If it is determined that revisions cannot be made in time, the final oral examination must be postponed.
13. If a committee member is unable to participate in the final oral examination, the member may sign as a special signatory. A revised committee appointment form will need to be submitted to Graduate Enrollment Services, removing the individual as a regular committee member and if it is desired to designate that individual as a special signatory, a memo from the program head must accompany the revised committee form, requesting that the committee member be moved to a special signatory. As noted above, if there are then not enough members serving on the committee (i.e., four or more active members of the Graduate Faculty), another Penn State graduate faculty member will need to be appointed officially to the Ph.D. committee to replace the absent member in order to constitute a legitimate Ph.D. committee. These changes and approvals must occur before the actual examination takes place (ad hoc substitutes are not permitted). If a committee member is unable to attend the final oral examination, he or she will sign as a special signatory after notifying Graduate Enrollment Services (114 Kern) that a committee change must be approved and be made a part of the student's record. (Substitutes are not permitted, but changes in the committee can be made, if needed, through the usual procedures.) These changes and approvals shall occur before the actual examination takes place. The department or program head will notify Graduate Enrollment Services when the candidate is ready to have the comprehensive and the final oral examinations scheduled and will report the results of these examinations to that office.
14. The committee examines the dissertation, administers the final oral examination, and signs the Graduate School evaluation form. At least two-thirds of the committee must approve the dissertation.

***The final thesis should be submitted online to the Thesis Office by the deadline for Committee, Department Head, & Thesis Office approval.***

***Table 3 contains a worksheet that can be used as a guideline to ascertain if all requirements for the Ph.D. degree have been fulfilled and must be completed and submitted to the Graduate Program Assistant before the final oral examination can be scheduled. It is the responsibility of the student to ensure that all appropriate requirements for a degree have been met.***

## **ENTRY INTO THE Ph.D. PROGRAM WITHOUT FIRST OBTAINING A M.S. DEGREE**

### **General Policy Statement**

Although most applicants to the Ph.D. program have already obtained a Master's degree in Food Science or a related program, the M.S. degree is not a prerequisite for entrance into the doctorate program. The Graduate Program Committee will consider requests from exceptionally qualified students who have received or anticipate receiving a B.S. degree, and from students currently enrolled in the Food Science M.S. program who wish to transfer into the Ph.D. program without first completing the M.S. requirements. Final approval of all applications will be made by the Department Head upon recommendation of the Graduate Program Committee.

New applicants with only a B.S. degree or equivalent who are not accepted into the Ph.D. program may apply for entrance into the M.S. program. Accepted students who subsequently fail the Qualifying Examination with no opportunity for retake or who fail the exam twice, may transfer to the M.S. program. In this case, credits earned while enrolled in the Ph.D. program may apply to course requirements for the M.S. degree.

Current M.S. students who are not approved for transfer into the Ph.D. program may continue their M.S. studies without penalty. Accepted transfer students who subsequently fail the Qualifying Examination with no opportunity for retake or who fail the exam twice, may return to the M.S. program. In this case, credits earned while enrolled in the Ph.D. program may apply to course requirements for the M.S. degree.

### **Application Procedures**

New applicants who wish to enter the Ph.D. program with only a B.S. degree or equivalent must submit the following:

- All information, test scores, and fees currently required for M.S. to Ph.D. applicants
- A section within the personal statement that describes his/her justification for bypassing the M.S. degree

Current M.S. students who wish to transfer into the Ph.D. program without first completing all M.S. requirements must submit the following:

- Their original complete M.S. application file
- A letter written by the student that describes his/her justification for bypassing the M.S. degree
- A letter from the student's advisor  
The student's advisor must provide a letter to the Graduate Program Committee recommending transfer. This letter would generally be submitted within two semesters after admission of the student into the M.S. program. A second letter of recommendation must also be provided by another faculty member from Penn State supporting the student's transfer into the Ph.D. program. This letter must be submitted to the Graduate Program Committee at the same time that the advisor's letter is submitted. It is suggested that this second letter be provided by a faculty member who has had the student in at least one graduate level course (400 level or above).

### **Recommendations**

Note that according to the Penn State Graduate School, "the student has no official status as a doctoral student and no assurance of acceptance as a doctoral candidate until the Qualifying Examination has been passed." Therefore, it is strongly advised that applicants be informed of the procedural requirements and evaluation criteria necessary for passing the Qualifying Examination. These include taking the exam within 3 semesters after official entry or transfer into the Ph.D. program (summer sessions do not count towards this requirement) and after having earned at least 18 credits earned in graduate courses beyond the baccalaureate.

**Table 3. MINIMUM REQUIREMENTS for PH.D. DEGREE IN FOOD SCIENCE AT PENN STATE WITHOUT FIRST RECEIVING AN M.S. DEGREE**

(as approved at the Faculty meeting on 06/7/2011, corrected by GPC 10/17/13)

	<u># Cr</u>
<b>MINIMUM GRADUATE SCHOOL REQUIREMENTS<sup>1</sup></b>	
Maximum Non-degree credits allowed (needs approval)	15
Maximum Transfer credits allowed (needs approval)	10
Qualifying exam	Yes
Comprehensive exam	Yes
Thesis	Yes
Residency (# semesters) <sup>2</sup>	2
Minimum GPA needed to graduate	3.0
Time limit (# years from date of passing qualifying exam)	8

The Graduate School has no minimum credit hours requirement for the Ph.D. program. However, the Department of Food Science requires that the following list of courses be completed.

**MINIMUM DEPARTMENTAL REQUIREMENTS (which will also fulfill minimum Graduate School requirements)**

FD SC 500A, FD SC 500B, FD SC 500C, FD SC 500D	4
FD SC 501	2
FD SC 602 <sup>3</sup>	2
Other 500-level FD SC courses <sup>4</sup>	6
FD SC 600 credits (minimum needed)	6
Additional 400-500 level courses	6
Statistics (STAT 500 or equivalent) <sup>5</sup>	√
Qualifying exam	Yes
Doctoral committee	Yes
Comprehensive exam	Yes
Thesis seminar	Yes
Thesis defense	Yes

<sup>1</sup> University Bulletin on Graduate Degree Programs (<https://bulletins.psu.edu/graduate/>)

<sup>2</sup> Two semesters within a 12-month period; summer session is not considered a semester.

<sup>3</sup> Beginning with 2<sup>nd</sup> year, Ph.D. students are required to assist with one course each academic year as a Teaching Assistant (TA).

<sup>4</sup> 3 credits of this requirement can be satisfied by 400 level Food Science courses with permission of the advisor.

<sup>5</sup> Students receiving a Ph.D. in Food Science must have satisfactorily completed one 400-500 level course in each of these areas, during their undergraduate or graduate program.

**WORKSHEET DESCRIBING HOW COURSEWORK REQUIREMENTS WERE SATISFIED FOR  
STUDENTS ENTERING PH.D. PROGRAM WITHOUT AN M.S. DEGREE**

**This form must be submitted to the Graduate Program Assistant before thesis defense date can be scheduled.**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**GRADUATE SCHOOL REQUIREMENTS**

Non-degree credits (maximum 15)

Transfer credits (maximum 10)

Qualifying exam

Comprehensive exam

Thesis

Yes

Yes

Yes

Residency (minimum 2 semesters)

Current GPA (minimum 3.0)

# years from date of passing qualifying exam (Maximum 8)

**COURSE(S) TAKEN TO MEET REQUIREMENTS****DEPARTMENTAL REQUIREMENTS**

FD SC 500A (1 cr)

FD SC 500B (1 cr)

FD SC 500C (1 cr)

FD SC 500D (1 cr)

FD SC 501 (2 cr)

FD SC 602 (2 semesters x 1 cr)

FD SC 600 (6 cr)

Other 500-level FD SC courses (6 cr)

Additional 400-500 level courses (6 cr)

Statistics (STAT 500 or equivalent)

Date of Qualifying exam

Date of Comprehensive exam

Please also provide the following information:

- Publications resulting from your thesis work (please list complete citation for articles published and also list titles and authorship of manuscripts planned or in preparation).
- Presentations at scientific meetings based on your thesis work (please list title and authorship on presentations, both oral and poster sessions, at regional or national scientific meetings).
- Awards (please list all scholarships and fellowships awarded during your graduate studies at Penn State).
- Please provide title and location of your employment after graduation.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Advisor Signature

\_\_\_\_\_  
Date



## **DUAL-TITLE DEGREE PROGRAMS**

For general information on Dual-Title Degree Programs see [GCAC-208](#).

### **Clinical and Translational Science**

The Food Science Department participates in the Clinical and Translational Science Dual Title program. You can find the handbook with requirements of the program at <https://ctsi.psu.edu/education/dual-title-phd/handbook/>.

### **International Agriculture and Development**

The Food Science Department participates in the International Agriculture and Development (INTAD) Dual Title program. You can find the handbook with requirements of the program at <https://agsci.psu.edu/international/intad/degree-requirements>.

## **FELLOWSHIPS AND SCHOLARSHIPS**

Each year the Department awards a significant amount of supplemental funding in the form of fellowships and scholarships to graduate students in food science. In the past only a few have taken advantage of this by applying via the College of Agricultural Sciences website at <https://agsci.psu.edu/students/scholarships>. All students in the College are encouraged to apply for scholarships. You must complete the College of Agricultural Sciences Scholarship Application and for those scholarships requiring documented financial need you must complete the Free Application for Federal Student Aid (FAFSA) annually to be considered.

### **Fellowships**

#### **PMCA Graduate Fellowship**

PMCA and the Pennsylvania State University seek students interested in conducting confectionery research while earning a graduate degree in food science at the Pennsylvania State University. Preferably the candidates will have some experience in confectionery manufacture. Individuals that have earned an undergraduate degree, have some confectionery experience and are interested in furthering their education should complete the formal [application for admission](#) process per the instructions provided.

#### **Skip and Marilyn Rosskam Graduate Fellowship in Food Science**

Consideration for this fellowship is given to full-time graduate students exhibiting academic excellence who have been admitted to the Graduate School at the University as candidates for a graduate degree offered in the Department of Food Science in the College of Agricultural Sciences, or successor department/academic unit. Each fellowship shall be awarded for one academic year and may be renewed for subsequent years providing the recipient continues to meet the conditions of eligibility.

### **Scholarships**

#### **Donald V. Josephson and Stuart Patton Mentorship Award in Dairy and Food Science**

This award is for graduate students and faculty members and will be awarded by the Head, Department of Animal Science and the Head, Department of Food Science on an alternating basis. Consideration for this award shall be given to all graduate students enrolled in the College of Agricultural Sciences and studying in the area of Dairy or Food Science

#### **Earl and Veronica Casida Graduate Fellowship in Microbial Food Safety**

Consideration for this fellowship shall be given to all full-time graduate students exhibiting academic excellence who have been admitted as candidates for a graduate degree in the Department of Food Science with a focus on microbial food safety. Endowed by Earl and Veronica Casida.

#### **Edith and William B. Rosskam, II Memorial Scholarship in Food Science**

Consideration for this scholarship shall be given to full-time graduate students enrolled or planning to enroll in a degree offered by the Department of Food Science, or successor department, in the College of

Agricultural Sciences, or successor academic unit, who have achieved superior academic records or who manifest promise of outstanding academic success. Financial need may be a consideration, but is not a requirement for eligibility of this scholarship.

#### [Frank S. and Nina Cobb Grant-in-Aid](#)

Consideration shall be given to all students currently enrolled or planning to enroll in the Department of Food Science who have achieved positive academic records or show promise of academic success and have documented financial need. Endowed by Frank S. and Nina Cobb. \*\* DOCUMENTED FINANCIAL NEED REQUIRED

#### [Fred and Florence Jacobson Food Science Graduate Scholarships](#)

Consideration shall be given to all full-time graduate students enrolled or planning to enroll in the Food Science major who are active participants in the Food Science Club, demonstrate superior academic achievement, and have documented financial need. Preference shall be given to students studying chocolate and confectionery. Endowed by Fred and Florence Jacobson. \*\* DOCUMENTED FINANCIAL NEED REQUIRED

#### [Ira W. Minter Memorial Award](#)

Consideration for this award shall be given to all full-time graduate students currently enrolled in the Department of Food Science who have demonstrated exemplary progress in the previous academic year. Preference shall be given to students whose studies relate to chocolate and confectionery science and technology.

#### [Janet G. and Frank J. Dudek Graduate Scholarship in Food Science](#)

Consideration for this scholarship shall be given to all full-time graduate students enrolled or planning to enroll in the Department of Food Science, College of Agricultural Sciences, who have achieved superior academic records or who manifest promise of academic success.

#### [John and Jane Ziegler Graduate Award in Sensory Science](#)

Consideration for this award shall be given to all candidates for a graduate degree in a program offered in the College of Agricultural Sciences, or successor academic unit, who have demonstrated excellence in scholarly achievement to research or creative accomplishment in the discipline of sensory science.

#### [John H. Hetrick Memorial Endowed Scholarship in Food Science](#)

Consideration shall be given to all full-time undergraduate and graduate students who are currently enrolled or are planning to enroll in the Department of Food Science and who have achieved superior academic records or show promise of outstanding academic success and have documented financial need. Endowed in memory of John H. Hetrick. \*\* DOCUMENTED FINANCIAL NEED REQUIRED

#### [Michael J. Daly Memorial Award Fund](#)

Consideration shall be given to all full-time students currently enrolled in Food Science who have achieved superior academic records and have documented financial need. Endowed in memory of Michael J. Daly. \*\* DOCUMENTED FINANCIAL NEED REQUIRED

#### [Professor Arun Kilara Memorial Graduate Student Award in Food Science](#)

Consideration for this award shall be given to a graduate student pursuing a degree within the Department of Food Science who has demonstrated excellence in outreach teaching or who has assisted with dairy food-related courses through outreach teaching events offered by the Department of Food Science in the College of Agricultural Sciences

#### [Robert D. and Jeanne L. McCarthy Graduate Teaching Award and Graduate Scholarship](#)

Consideration for the teaching award shall be given to all full-time graduate students who are currently enrolled in a degree program offered by the Department of Food Science, or successor department, and who have achieved superior teaching success. Consideration for the graduate scholarship shall be given to all full-time graduate students who are enrolled in a degree program by the Department of Food Science, or successor department, who have achieved superior academic records. For the scholarship, financial need may be a consideration but is not a requirement for eligibility.

### Star Kay White Scholarship in Food Science

Consideration shall be given to all full-time undergraduate and graduate students enrolled or planning to enroll in Food Science to study frozen dessert technology, production, and safety who demonstrate academic achievement and have documented financial need. Endowed by Star Kay White, Inc. \*\*  
DOCUMENTED FINANCIAL NEED REQUIRED

### AEOCPT (American English Oral Communicative Proficiency Test)

All International students who plan to be a teaching assistant must take the AEOCPT exam that is offered through the Department of Applied Linguistics.

The score you receive on this test will determine when you may assume teaching duties as a teaching assistant. Also effective January 1995, an American English Oral Communicative Proficiency Test Score is required for enrollment in ESL 115G, ESL 117G, and ESL 118G. Students who have not taken the oral proficiency test will not be permitted to enroll in these courses.

The American Oral English Communicative Proficiency Test consists of four sections of questions and activities. Your responses to these are evaluated on the way you express your ideas, not the actual ideas.

In the first section, you are asked to explain a common term from your field. You should explain the term, using examples or analogies if appropriate, and its importance. The second section consists of a role play. You will interact with one of the evaluators about a topic that you should be able to discuss easily. In the third section, you are asked to respond to three questions of general interest. One of the evaluators will ask you the questions. They will not be in written form. In the fourth section, you are given information, which you are then asked to "present" to a group of students. You are able to refer to the information printed in the test booklet. You are given time to prepare your answers and should answer as completely as possible.

You will be evaluated on three important aspects of your English language proficiency. These include: pronunciation (the articulation of specific sounds, and the stress and intonation of your speech); fluency (the rate and appropriateness of pauses in your speech); and comprehensibility (how extensive and appropriate is your use of vocabulary and grammar).

You will be tested by two evaluators (trained graduate students in the Department of Applied Linguistics). One of them will give you instructions, but both will be evaluating your English language proficiency. The test will be tape recorded. If there is a test discrepancy, a third rater will listen to the tape to score your test. Tapes are destroyed after six months.

Before the evaluators begin the test, one of them will explain procedures to you and ask you informal questions about yourself. This "warm-up" conversation is meant to help you relax. It is not graded, even if it is recorded.

One of the evaluators will give you a booklet so you can follow the instructions in writing as the evaluator reads them to you. You are allowed to ask questions about the instructions or the content of the test throughout. You will NOT be penalized for asking questions.

The test takes approximately 25 minutes to complete. Within one week of taking the test, you should check with the Graduate Program Assistant to receive your score. Scores range from 0-300. Effective August 1999, a score of 250 or higher allows an international student to assume teaching responsibilities with no restrictions. Scores under 250 require additional coursework in English. The following scores and interpretations constitute the guidelines followed by the Department of Applied Linguistics.

<b>AEOCPT SCORE</b>	<b>REQUIRED COURSE</b>	<b>PROGNOSIS</b>
250-300	None	Student may assume teaching duties with no restrictions.
230-249	Enroll in <b>ESL 118G</b> before assuming teaching duties.	After one semester, student should be able to assume teaching duties with no restrictions. Students enrolled in ESL 118G must receive a grade of "B" before they assume teaching duties with no restrictions.

AEOCPT SCORE	REQUIRED COURSE	PROGNOSIS
200-229	Enroll in ESL 117G	Will require at least two semesters before student is recommended to teach. Students enrolled in ESL 117G must receive a grade of "B" before they will be allowed to enroll in ESL 118G.
below 200	Enroll in ESL 115G	Will require at least three semesters before student is recommended to teach. Students enrolled in ESL 115G must receive a grade of "B" before they will be allowed to enroll in ESL 117G.

### **FOOD SCIENCE GRADUATE COURSES OFFERED**

400. FOOD CHEMISTRY (4) Chemical properties of food constituents as influenced by processing and storage. Selected experiments and demonstrations to illustrate chemical reactions of importance in foods. Prerequisite or concurrent: CHEM 202, BMB 211, BMB 212  
Coupland

404. SENSORY EVALUATION OF FOODS (2) Sensory evaluation of food, methods of test analysis, panel selection and training, taste sensation theory, consumer testing methods. Prerequisite: STAT 250. Junior standing.  
Hayes

405. FOOD ENGINEERING PRINCIPLES (3) Engineering principles of importance to food manufacturing, including units, dimensions, mass and energy balance, fluid flow, rheology, heat transfer, and psychrometrics. Prerequisites: MATH 110, PHYS 250  
Anantheswaran

406W. PHYSIOLOGY OF NUTRITION (3) Physiological mechanisms involved in thirst and appetite, digestion, absorption, utilization of nutrients, respiration, and body temperature regulation. Prerequisite: B M B 211  
Lambert & Keller

407. Food Toxins (2) Microbiological and chemical aspects of food poisoning; toxicological principles; case histories and prevention of problems. Prerequisite: Senior standing in food science or related majors.  
Lambert

408. FOOD MICROBIOLOGY (2) Significance of microorganisms in food commodities, microbial spoilage, food-borne infections, and intoxications; methods of preservation, processing, and control. Prerequisite: MICRB 201, 202.  
Dudley

409. FOOD MICROBIOLOGY LABORATORY (3) Methods of isolation and detection of spoilage and pathogenic microorganisms in foods; effects of processing and preservation on survival of food microorganisms. Prerequisite: MICRB 202. Prerequisite or concurrent: FD SC 408.  
Kovac

410. CHEMICAL METHODS OF FOOD ANALYSIS (3) Qualitative and quantitative determination of food constituents. Prerequisite: BMB 212, FD SC 400.  
Hopfer

411. MANAGING FOOD QUALITY (3) Statistical tools for the control and improvement of food quality. Prerequisite: STAT 250.  
Ziegler

413. SCIENCE AND TECHNOLOGY OF PLANT FOODS (3) Physical and chemical behavior of plant-based raw materials and ingredients, with emphasis on parameters influencing finished product quality. Prerequisite: FD SC 400, 405, 408, 410.  
Elias

414. SCIENCE AND TECHNOLOGY OF DAIRY FOODS (3) Physical and chemical behavior of dairy-based raw materials and ingredients, with emphasis on parameters influencing finished product specifications. Prerequisite: FD SC 400, 405, 408, 410.  
Harte

415. SCIENCE AND TECHNOLOGY OF MUSCLE FOODS (3) Physical and chemical behavior of muscle food commodities, with emphasis on muscle-based ingredients in formulated foods. Prerequisite: FD SC 400, 405, 408, 410.  
Mills

460. FOOD SYSTEMS IN ITALY (2). Food Science Study tour in Northern Italy. Course will compare food and agricultural systems between the US and Italy.  
Hopfer/Kovac

497. SPECIAL TOPICS (1-9) Formal courses given infrequently to explore, in depth, a comparatively narrow subject which may be topical or of special interest. Several different topics may be taught in one year or semester. A specific title may be used in each instance and will be entered on the student's transcript.

497. FOOD LAWS AND REGULATIONS

Wee

497. FOODBORNE PATHOGEN GENOMIC EPIDEMIOLOGY

Kovac

497. NEW PRODUCT DESIGN (3) This course provides upper-level undergraduate students in the Food Science major with a formal learning experience in new product design (NPD). Azzara/Anantheswaran

500A FUNDAMENTALS OF FOOD SCIENCE – MICROBIOLOGY (1) Intensive overview of the field of Food Science with the focus on microbiology. Dudley

500B FUNDAMENTALS OF FOOD SCIENCE - ENGINEERING (1) Intensive overview of the field of Food Science with the focus on Food Engineering. Anantheswaran

500C FUNDAMENTALS OF FOOD SCIENCE – CHEMISTRY (1) Intensive overview of the field of Food Science with the focus on chemistry. Cockburn

500D FUNDAMENTALS OF FOOD SCIENCE - NUTRITION (1) Intensive overview of the field of Food Science with the focus on nutrition. Keller

501 RESEARCH METHODS IN FOOD SCIENCE (2) Planning and conducting research in food science including: problem definition, experimental design, collecting and recording data, and effective communication.

Lambert

514 FOOD PHYSICAL CHEMISTRY (3) Physical principles underlying food structure and quality. Prerequisite: FD SC 400 or FD SC 500C Coupland

515 SENSOMETRICS (3) Students in this course will familiarize themselves with different data analysis methods for analyzing uni- and multivariate data sets from the Sensory & Consumer Sciences. Hopfer

521 FOOD DEFENSE: PREVENTION PLANNING FOR FOOD PROCESSORS (3) Course prepares current and aspiring professionals to learn, recognize and apply measures to prevent intentional contamination of the food supply. Prerequisite: AGBIO 520 Cutter

526 MICROBIAL PHYSIOLOGY OF FOODBORNE ORGANISMS (3) A current literature-based course investigating the mechanisms by which foodborne bacteria (beneficial and pathogenic) grow, survive, and react to environments encountered in foods and during food processing. Dudley

534 (NUTRN 597G) READINGS IN INGESTIVE BEHAVIOR (1) Students lead discussion of original research in the field of ingestive behavior with a focus on food intake in particular. Hayes

555 FOOD RHEOLOGY (3) This course provides a broad exploration of rheology in the context of food materials. Harte

596 INDIVIDUAL STUDIES (1-9) Creative projects, including nonthesis research, that are supervised on individual basis and fall outside the scope of formal courses. A specific title may be used in each instance and will be entered on the student's transcript. Multiple offerings may be accommodated by the use of suffixes a, b, etc. The student must have a GPA greater than or equal to 3.0 in order to register for FD SC 596 and should submit also CONTRACT FOR FOOD SCIENCE SPECIAL PROBLEMS COURSES (FD SC 596).

597 SPECIAL TOPICS. (1-6) Formal courses given on a special interest subject which may be offered infrequently; several different topics may be taught in one year or semester. A specific title may be used in each instance and will be entered on the student's transcript.

600 THESIS RESEARCH. (on campus). FD SC 600 cannot be taken for a letter grade.

A master's candidate is not required to register for the final semester in order to graduate or in order to make minor revisions to the thesis and/or to take a final examination for the degree, unless required to do so by the program. However, international students should be registered each semester to meet F-1 Visa requirement, including the semester they defend.

601 Ph.D. DISSERTATION

602 SUPERVISED EXPERIENCE IN COLLEGE TEACHING

610 THESIS RESEARCH. (off campus)

611 Ph.D. DISSERTATION. (part time)

**601. Ph.D. DISSERTATION.**Registration requirements for FD SC 601

## International Students

1. Ph.D. students who have passed their qualifying exam must be continually registered until the semester that they defend their thesis.
2. Students who need to be registered after they have passed their comprehensive exam, should register for FD SC 601.
3. After the defense, in order to remain in the U.S. on a legal status, the student should apply for OPT/CPT. Students are urged to contact DISSA for appropriate guidance.
4. International students must retain their health insurance to retain their F-1 Visa status. If they would like to purchase insurance elsewhere, they must work with the Student Insurance Office to get approval.

## Domestic Students

1. Ph.D. students who have passed their qualifying exam must be continually registered until the semester that they defend their thesis.
2. Students who have passed their Comprehensive Exam should register for FD SC 601.
3. Students should be formally registered during the semester (including summer) they intend to defend their thesis.

**602 SUPERVISED EXPERIENCE IN COLLEGE TEACHING**

Supervised and graded experience in the organization and conduct of lectures and/or laboratories at the undergraduate level and the evaluation and counseling of students. Preparation for performing TA duties.

**General Policy** - Enrollment in this course is limited to graduate students in their first year and Ph.D. students serving as a TA in food science for the first time. Registration will generally be limited to one credit per semester. Credit for this course shall be counted as a part of the normal credit load for all students (including those on assistantships). However, credit for this course shall not be counted when calculating the grade-point average or in fulfilling any specific credit requirement for the M.S. and/or Ph.D. degree.

**Teaching Assistant Selection** - The Head of the Department, in consultation with the Director of Graduate Studies and the faculty, is responsible for annual assignment of TAs. Students are asked to indicate their preferences for assignment and encouraged to provide information about their interests, background, and any previous instructional experience. Instructors of the various courses are also asked for their preferences for TAs. After the selection process, the TAs are informed of the assignment in a notification letter.

**Course Requirements** - Enrollment in FD SC 602 implies additional educational activity by the student. Duties carried out in the normal course of TA assignments are not sufficient to fulfill FD SC 602 requirements.

**Grade** - The grade for this course will be assigned by the instructor for FD SC 602.

**500 LEVEL FOOD SCIENCE COURSES****Even Years ( 2020, 2022, 2024 )****Fall Semester**

- FDSC 500A(1) Fundamentals of FD SC-Micro (Dudley)
- FDSC 500B(1) Fundamentals of FD SC-Eng (Anantheswaran)
- FDSC 521(3) Food Defense (Cutter, on-line)
- FDSC 555(3) Food Rheology (Harte)
- FDSC 534(1) Readings in Ingestive Behavior (Hayes)

**Spring Semester**

- FD SC 500C(1) Fundamentals of FD SC-Chem (Cockburn)
- FD SC 500D(1) Fundamentals of FD SC-Nutr (Keller)
- FD SC 501(2) Research Methods in FD SC (Lambert)FD SC 534(1) Readings in Ingestive Behavior (Hayes)
- FDSC 515 (3) Sensometrics (Hopfer on-line)

**Odd Years ( 2019, 2021, 2023)****Fall Semester**

- FD SC 500A(1) Fundamentals of FD SC-Micro (Dudley)
- FD SC 500B(1) Fundamentals of FD SC-Eng (Anantheswaran)
- FD SC 597G(1) Ingestive Behavior (Hayes)
- FD SC 521(3) Food Defense (Cutter on-line)

**Spring Semester**

- FD SC 500C(1) Fundamentals of FD SC-Chem (Cockburn)
- FD SC 500D(1) Fundamentals of FD SC-Nutr (Keller)
- FD SC 501(2) Research Methods in FD SC (Lambert)
- FDSC 515 (3) Sensometrics (Hopfer on-line)
- FD SC 597(3) Food Enzymes (Cockburn)
- FDSC 526 (3) Microbial Physiology of Foodborne Organisms (Dudley)
- FD SC 534 (1) Readings in Ingestive Behavior (Hayes)
- FD SC 514(3) Food Physical Chemistry (Coupland)

## SUGGESTED NON FOOD SCIENCE COURSES THAT MAY BE USED TO FULFILL GRADUATE DEGREE REQUIREMENTS

The list is only a suggestion. Choice of courses is a decision based on input from advisor, committee members and the interests of the students.

### A. ENGINEERING

ABE 513	Applied Finite Element, Finite Difference and Boundary Element Methods
ABE 559	Agricultural and Biological Systems Simulation
ABE 562	Boundary Element Analysis
ABE 568	Food Safety Engineering
CH E 446	Introduction to Transport Phenomena
CH E 544	Transport Phenomena
CH E 545	Transport Phenomena I
CH E 546	Transport Phenomena II
ME 411	Heat-Exchanger Design
ME 420	Compressible Flow I
ME 421	Viscous Flow Analysis and Computation
ME 512	HEAT TRANSFER--Conduction
ME 513	HEAT TRANSFER--Convection
E MCH 560	Finite Element Analysis

### B. BIOCHEMISTRY/CHEMISTRY

BMB 400	Molecular Biology of the Gene
BMB 401	General Biochemistry
BMB 402	General Biochemistry
BMB 443W	Laboratory in Protein Purification and Enzymology
BMB 464	Molecular Medicine
BMMB 525	Proteins and Enzymes
CHEM 410	Inorganic Chemistry
CHEM 452	Physical Chemistry
CHEM 525	Analytical Separations
CHEM 526	Spectroscopic Analysis

### C. MICROBIOLOGY

MICRB 412	Medical Microbiology
MICRB 413	Microbial Diversity
MICRB 416	Microbial Biotechnology
MICRB 421W	Laboratory of General and Applied Microbiology
MICRB 422	Medical Microbiology Laboratory
MICRB 450	Microbial/Molecular Genetics

### D. NUTRITION

NUTR 445	Nutritional Metabolism-I
NUTR 446	Nutritional Metabolism-II
NUTR 451	Nutritional Throughout the Life Cycle
NUTR 452	Nutritional Aspects of Disease
NUTR 453	Diet in Disease
NUTRN 511	Maternal and Infant Nutrition
NUTRN 513	Atherosclerosis and Nutrition
NUTRN 514	Prostaglandins and Leukotrienes
NUTRN 515	Mathematical Modeling in Nutrition

### E. STATISTICS

AG 400	Biometry/Statistics in the Life Sciences
ENT 597G	Applied Statistics Technology
R SOC 573	Survey Data Analysis
STAT 460	Intermediate Applied Statistics
STAT 462	Applied Regression Analysis
STAT 480	Introduction to STATS
STAT 500	Applied Statistics
STAT 501	Regression Methods
STAT 502	Analysis of Variance and Design of Experiments



STAT 503      Design of Experiments

F.

OTHERS

AG BM 460

HORT 412W

MAT SE 441

MAT SE 442

MAT SE 443

MAT SE 444

MAT SE 501

MANAGING THE FOOD SYSTEM

Post-harvest Physiology

Polymeric Materials I

Polymer Synthesis

Introduction to Materials Science of Polymers

Solid State Properties of Polymeric Materials

THERMODYNAMICS OF MATERIALS

**MASTERS COMMITTEE APPOINTMENT AND SIGNATURE FORM**

**Student Name:** \_\_\_\_\_

**Advisor:** \_\_\_\_\_

**Committee Chair**

\_\_\_\_\_  
Name Signature Date

**Committee Members**

\_\_\_\_\_  
Name Signature Date

\_\_\_\_\_  
Name Signature Date

\_\_\_\_\_  
Name Signature Date (Optional)

**Please return to Graduate Program Assistant**

## Doctoral Committee Appointment Form Worksheet

**Student Name:** \_\_\_\_\_

**Advisor:** \_\_\_\_\_

**Committee Chair/Co-Chair\***

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

**Dissertation Advisor/Co-Advisor\***

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

**Major Program Members\***

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

**Outside Field/Unit Member(s)\***

_____ Name	_____ Program
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_____ Name	_____ Program
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**Minor Field Member(s)**

_____ Name	_____ Program
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_____ Name	_____ Program
---------------	------------------

**Special Member(s)**

_____ Name	_____ Program
---------------	------------------

_____ Name	_____ Program
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\*Required Field

**Please return to Graduate Program Assistant**

**Contract for  
Food Science Independent Studies Courses  
FD SC 596**

**Instructions for scheduling an Independent Studies Course:** Complete this form in consultation with the supervising course instructor. Submit completed form, including student and professor's signature, to the Graduate Program Assistant.

Student's Name: \_\_\_\_\_

PSU ID Number: \_\_\_\_\_

Instructor's Name: \_\_\_\_\_

Semester & Year: \_\_\_\_\_

Course Number & Title: \_\_\_\_\_

Number of Credits: \_\_\_\_\_

\_\_\_\_\_  
Student's Signature

\_\_\_\_\_  
Instructor's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

Comments:

## Annual Graduate Student Evaluation Form

Name of Student: \_\_\_\_\_ Advisor(s): \_\_\_\_\_

Degree Working Toward: \_\_\_\_\_ ID No. \_\_\_\_\_

***Graduate student: Please fill in the items below and then pass along the evaluation form to your faculty advisor for **completion by DATE*****

Semester/year that you joined the FD SC program: \_\_\_\_\_

Ethics Training	Yes	No	If no, provide expected date of completion
Have you completed on-line CITI training?			
Did you complete 4 h SARI workshop?			
Did you take and pass FD SC 501?			
If required, have you completed an IRB/IACUC protocol and was it approved?			<b>Protocol No.</b>

Qualifying Exam	Semester/year		Result
List the date that you took or plan to take the PhD qualifying exam if applicable.			
Has a thesis committee been established? <b>List members (or anticipated members):</b>	<b>Yes</b>	<b>No</b>	<b>Date of most recent meeting:</b>
Have you completed coursework?			

Comprehensive Exam	Semester/year		Result
List the date that you took or plan to take the comprehensive exam, if applicable.			
Anticipated date of thesis defense			

**GPA** (3.0 minimum) **Current GPA:** \_\_\_\_\_

**TA requirement** (please list course(s) and the semester for which you have served as TA):

**List any publications/presentations made as a graduate student at Penn State:**  
For publications: Authors. Year. Title. Journal. Volume(issue) pages. Contribution to the work.  
For presentation: Authors. Title. Meeting title. Meeting Location. Meeting Dates. Poster/Oral. Local/regional/national/international. Peer reviewed/invited?

***Faculty advisor(s): Please evaluate the progress that the graduate student has made over the past year of study in the following areas.***

	Exceeds Expectations	Meets Expectations	Below Expectations
Academic Progress			
Ability to Work Independently			
Ability to Work in a Team			
Ability to Plan and Conduct Research			
Motivation and Effort			
Oral Communication Skills			
Written Communication Skills			

Additional Comments:

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In summary, are you satisfied with this student's progress over the past year?

Yes \_\_\_\_\_ No \_\_\_\_\_ If not, please explain. Attach additional sheet if needed.

\_\_\_\_\_  
Advisor/Co-advisor Signature(s)

\_\_\_\_\_  
Date

I agree \_\_\_\_\_; disagree \_\_\_\_\_ with this evaluation. If not in agreement, the student may attach an explanation if desired.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Graduate Program Chair or Co-Chair

\_\_\_\_\_  
Date

Please return a version with all original signatures to Graduate Program Assistant by:  
**DATE**

## Defense Seminar Review Form

Presenter:

Date:

The ability to clearly and succinctly present scientific findings in a seminar format is a skill all graduate students must master. Towards the end of their degree program, both M.S. and Ph.D students in Food Science are required to give a public seminar on their research project. During these, three faculty members not on the student's committee will be asked to provide feedback using the form below. These evaluations will have no impact on the student's completion, but will be used as part of the Graduate Programming Committee (GPC) assessment to whether we are improving students' presentation skills over the course of their degree programs. These forms will be returned to the student.

- 1) Knowledge of field: The student demonstrated a command of literature in their field.
- 2) Background: Ability to build scientific story leading to statement of hypothesis.
- 3) Statement of hypothesis: Student clearly describes hypotheses to be tested. Alternatively, a clear statement of objectives was provided.
- 4) Critical analysis: Ability to support hypothesis and communicate alternatives; ability to describe experimental design and connect experiments into a complete story
- 5) Presentation skills: Maintains eye contact, speaks in a clear and understandable manner. Keeps appropriate pace and stays within time limits.
- 6) Quality of slides: Good mix of text and figures, free of spelling errors, animations used work properly, size of text is appropriate.
- 7) Communicate strengths and weaknesses: Ability to identify strengths and weaknesses in own arguments, and to propose alternate experiments.
- 8) Questions: Ability to answer questions clearly in understandable manner.

At the end of the Spring semester, the GPC will evaluate all forms completed for seminars given during the academic year and decide whether action is needed.

Ability	Description	Outstanding	Very Good	Acceptable	Marginal	Not acceptable
1	Knowledge of field					
2	Background					
3	Hypothesis/objectives					
4	Critical analysis					
5	Presentation skills					
6	Quality of slides					
7	Strengths and weaknesses					
8	Questions					

(optional): additional comments:

**Resume Study/Change of Graduate Degree or Major**

[http://www.gradschool.psu.edu/faculty-and-staff/forms/ges/#Student Forms](http://www.gradschool.psu.edu/faculty-and-staff/forms/ges/#Student_Forms)

**Registration Drop/Add Form**

[http://www.registrar.psu.edu/student forms/dropadd form.cfm](http://www.registrar.psu.edu/student_forms/dropadd_form.cfm)

**Concurrent Graduate Degrees**

<http://www.gradschool.psu.edu/forms-and-documents/ges-owned-forms-and-documents/concurrentgraduatedegreeprogramsplanofstudy/>

**Transfer of Credit forms**

<http://www.gradschool.psu.edu/forms-and-documents/ges-owned-forms-and-documents/xfercredit2pdf/>



**FOOD SCIENCE  
GRADUATE STUDENT GRADUATION/TRANSFER  
CHECK-OUT SHEET**

Food Science graduate students should follow the procedure listed below before leaving the University to ensure that they are in good standing at the time of their departure. The procedure consists of obtaining the signature of the following individuals, ascertaining that the student has fulfilled all obligations in the Food Science Department. This form should be returned to the Graduate Program Assistant.

**Student's Name** \_\_\_\_\_ **Today's Date** \_\_\_\_\_

**Thesis/Paper Status:** Complete/Incomplete (circle one)      Submitted/Not Submitted (circle one)

**Thesis Title:** \_\_\_\_\_

**Schedule of Thesis Defense** (schedule with the Graduate Program Assistant) \_\_\_\_\_

**Have you activated your intent to graduate through LionPATH?** Yes or No Graduation Date: \_\_\_\_\_

**The signatures below confirm the student named above has fulfilled all obligations in the following areas:**

	<u>Signature</u>	<u>Date</u>
<b>1. Advisor:</b> <ul style="list-style-type: none"> <li>• Oral presentation of thesis</li> <li>• Name removed from computer accounts</li> <li>• All borrowed equipment returned</li> <li>• Arrangements made for completion of Thesis, etc.</li> <li>• Thesis submitted online for approval</li> </ul>	_____	_____
<b>2. Director of Graduate Studies &amp; Dept. Head</b> <ul style="list-style-type: none"> <li>• Certification of all degree requirements and transmission of information to the Graduate School</li> </ul>	_____	_____
<b>3. Finance Assistant</b> <ul style="list-style-type: none"> <li>• Returned Purchasing Card</li> <li>• Submitted all paperwork for P-Card, Travel expenses, petty cash, etc.</li> <li>• Cancelled dept. copier access</li> <li>• Cancelled eBuy Access (<i>UDBA processed</i>)</li> </ul>	_____	_____
<b>4. Facilities Coordinator</b> <ul style="list-style-type: none"> <li>• Return <b>all</b> keys to Room 115 Ag. Admin.</li> <li>• Receive key deposit refund</li> </ul>	_____	_____
<b>5. Schedule Exit interview with Department Head:</b> (Schedule at least 7 days in advance)	_____	_____
<b>6. Forwarding address:</b> _____ _____	<b>Employer Name &amp; Address:</b> _____ _____	

**Transfer/Separation Checklist**

Covered Individual Information	
Name (Last, First, Middle Initial):	PSU Employee ID #:
Job Title & Appointment Type:	Last Day Employed/Engaged or Date of Transfer:
Work Unit & Department:	Name of Supervisor/University Contact:

Part I – University Property				
Item	Yes	No	N/A	Comments
Keys/Access Cards obtained/Card Swipe access disabled (building/department/office/filing cabinets/desk/etc.)				
Second Factor Authentication Token				
ID Card/Security Badge				
Purchasing Card				
Parking Permit				
Cellular Phone/Phone Card				
Books/Supplies/Training Materials				
Laptop/Tablet/Other Computer Equipment (include storage devices and other media)				
Any property for which the individual is listed as custodian in the				
Other Dept./Area Specific Items (Please specify & attach additional documentation if necessary)				

Part II – System Access				
Item	Yes	No	N/A	Comments
Access Account				
IBIS				
ISIS				
Local IT Accounts and Network Access (including shared drives)				
Database Access				
Other Dept./Area Specific Items (Please specify & attach additional documentation if necessary)				

Part III – Miscellaneous				
Item	Yes	No	N/A	Comments
Resignation letter obtained				
Time & attendance verified				
EAP information provided				
Employee Benefits Division contact info provided				
Personal files from computer cleared/personal belongings removed				
Work files moved to a shared drive				
Telephone forwarded /coverage obtained/discontinued				
Email autoreply created/email forwarded/listserv admins				
Departmental email alias(es) removed				
Termination/Transfer Form Processed				
Salary, short-term or travel advances collected				
Long-term advances independently verified and transferred to				
ERS travel reports finalized				
Other Dept./Area Specific Items (Please specify & attach additional documentation if necessary)				

**Part IV – Preparer’s Signature – (Please Print & Sign)**

(Print)

(Sign)

(Date)