

Graduate Program in Food Science
Outcomes Assessment

Objectives and Outcomes

Objectives for the program are:

1. To guide the graduate education of students preparing for professional careers
2. To prepare students to be effective researchers in contributing to the advancement of the safety, variety, and quality of food products for the state, the nation, and the world
3. To maintain and improve the program's leadership position nationally and internationally

Outcomes for each of the program's objectives are:

1. To guide the graduate education of students preparing for professional careers, the program aims to provide a variety of experiences that help students to:
 - a. develop expertise in appropriate concepts, theories, and emerging methodologies from the fundamental disciplines of biochemistry, chemistry, engineering, microbiology, and nutrition
 - b. attain fundamental experience in applying their knowledge to ongoing, real-world issues in food systems, components, products, and processes
 - c. present their research in peer reviewed journals and in conference papers given at professional meetings on the local, regional, and national levels
 - d. participate actively in professional organizations, becoming members, attending meetings, and, where appropriate, taking leadership roles
2. To prepare students to be effective researchers in contributing to the advancement of the safety, variety, and quality of food products, for the state, the nation, and the world, the program aims to provide a variety of experiences that help students to:
 - a. become independent, self-motivated researchers with the ability to recognize problems in their field of expertise and formulate solutions to the problems
 - b. develop a comprehensive knowledge of previous and current research in their field of expertise and be able to demonstrate that knowledge capably in a review of the literature
 - c. generate viable questions within their field of expertise and pose problems or hypotheses related to those questions
 - d. apply sound research methods to problems in food science and describe the methods effectively
 - e. perform statistical analyses of research data and present the results in a way that makes clear sense of the data
 - f. discuss the solution to the research problem or the support or lack of support for the hypothesis in a way that effectively documents the contribution of the research to the area of study

3. To maintain and improve the program's leadership position nationally and internationally, the program aims to:
 - a. continue to be nationally competitive by attracting high-quality students
 - b. provide effective mentoring that encourages students to graduate in a timely manner
 - c. place graduates in positions in industry and academics
 - d. maintain a nationally recognized faculty that is large enough and appropriately distributed across food science disciplines to offer students a wide range of fields of expertise

Outcomes Assessment Plan

Data to be collected

Outcome	Data	Source	Collected
1a. To develop expertise in appropriate concepts, theories, and emerging methodologies from the fundamental disciplines of biochemistry, chemistry, engineering, microbiology, and nutrition	Scores on written preliminary exams for doctoral students; course grades on required food science courses for all students; #7 on rubric filled out at oral defense	Faculty members directing exams; DGP; faculty on committee	Annually; at each defense;
1b. To attain fundamental experience in applying their knowledge to ongoing, real-world issues in food systems, components, products, and processes	Responses to question on student course evaluations; responses to question on student exit interview with department head	University Information Technology; department head	Annually
1c. To present their research in peer reviewed journals and in conference papers given at professional meetings on the local, regional, and national levels	Curriculum vitae forms brought by students to oral defense listing publications and presentations	Students, given to faculty member directing defense	At each defense
1d. To participate actively in professional organizations, becoming members, attending meetings, and, where appropriate, taking leadership roles	Curriculum vitae forms brought by students to oral defense listing memberships in professional organizations, meetings attended, and leadership roles	Students, given to faculty member directing defense	At each defense
2. To prepare students to be effective researchers in	Rubric to be filled out by each committee member	Faculty members	At each defense

contributing to the advancement of the safety, variety, and quality of food products for the state, the nation, and the world	at a student's oral defense (see attached)	on student's committee	
3a. To continue to be nationally competitive by attracting high-quality students	Application statistics (number of applicants, percentage of applicants accepted, percentage of accepted candidates matriculating)	The Graduate School	Annually
3b. To provide effective mentoring that encourages students to graduate in a timely manner	Time-to-degree statistics	The Graduate School	Annually
3c. To place graduates in positions in industry and academics	Job placement statistics; curriculum vitae forms brought by students to oral defense giving job plans	The Graduate School; students, given to faculty member directing defense	Annually; at each defense
3d. To maintain a nationally recognized faculty that is large enough and appropriately distributed across food science disciplines of food science to offer students a wide range of fields of expertise	Faculty Activity Reports (for national recognition); monitoring FTEs per discipline for compact plan; achievement of faculty hiring goals on compact plan (for appropriate size and distribution of faculty)	DGP; department head	Annually

Summary: Data to be collected

- Scores on written preliminary exams for doctoral students
- Course grades on required food science courses for all graduate students
- Responses on student evaluations concerning students' satisfaction with a course in terms of providing experience in applying their knowledge to real-world issues in food systems, components, products, and processes
- Responses to question on student exit interview with department head

- Curriculum vitae forms brought by students to oral defense listing publications, presentations, memberships in professional organizations, meetings attended, and leadership roles and giving job plans
- Rubric to be filled out by each committee member at a student's oral defense (see attached)
- Application statistics (number of applicants, percentage of applicants accepted, percentage of accepted candidates matriculating)
- Time-to-degree statistics
- Job placement statistics
- Faculty Activity Reports
- FTEs per discipline for compact plan
- Achievement of faculty hiring goals on compact plan

Summary: When data are to be collected

Data to be collected each semester

- Responses on student evaluations concerning students' satisfaction with a course in terms of providing experience in applying their knowledge to real-world issues in food systems, components, products, and processes

Data to be collected annually

- Scores on written preliminary exams for doctoral students
- Course grades on required food science courses for all graduate students
- Application statistics (number of applicants, percentage of applicants accepted, percentage of accepted candidates matriculating)
- Responses to question on student exit interview with department head
- Time-to-degree statistics
- Job placement statistics
- Faculty Activity Reports
- FTEs per discipline for compact plan
- Achievement of faculty hiring goals on compact plan

Data to be collected individually when available for each student

- Curriculum vitae forms brought by students to oral defense listing publications, presentations, memberships in professional organizations, meetings attended, and leadership roles and giving job plans
- Rubric to be filled out by each committee member at a student's oral defense

Eight-year cycle for outcomes assessment

Year	Objective	Data Analyzed	Document
1 2003/04		<i>Development of outcomes, measures, and assessment plan</i>	
2 2004/05	1	<ul style="list-style-type: none"> • Scores on written preliminary exams for doctoral students • Course grades on required food science courses 	Biennial report to the

		<p>for all graduate students</p> <ul style="list-style-type: none"> • #7 on rubric filled out at oral defense • Responses to question on student evaluations • Responses to question on student exit interview • Curriculum vitae forms 	Graduate School on assessment activities
3 2005/06	2	<ul style="list-style-type: none"> • Rubric to be filled out by each committee member at a student's oral defense 	
4 2006/07	3	<ul style="list-style-type: none"> • Application statistics • Time-to-degree statistics • Job placement statistics • Faculty Activity Reports • FTEs per discipline for compact plan • Achievement of faculty hiring goals on compact plan 	Biennial report to the Graduate School on assessment activities
5 2007/08	1	<ul style="list-style-type: none"> • Scores on written preliminary exams for doctoral students • Course grades on required food science courses for all graduate students • Responses to question on student evaluations • Responses to question on student exit interview • Curriculum vitae forms 	
6 2008/09	2	<ul style="list-style-type: none"> • Rubric to be filled out by each committee member at a student's oral defense 	External review report due 9/1/09
7 2009/10	3	<ul style="list-style-type: none"> • Application statistics • Time-to-degree statistics • Job placement statistics • Faculty Activity Reports • FTEs per discipline for compact plan • Achievement of faculty hiring goals on compact plan 	
8 2010/11	1	<ul style="list-style-type: none"> • Scores on written preliminary exams for doctoral students • Course grades on required food science courses for all graduate students • Responses to question on student evaluations • Responses to question on student exit interview • Curriculum vitae forms 	Biennial report to the Graduate School on assessment activities

FOOD SCIENCE EVALUATION RUBRIC: THESIS OR DISSERTATION

Candidate: _____

Degree: _____

Title: _____

	<i>poor</i>		<i>competent</i>		<i>excellent</i>
1. reviews the literature in a way that demonstrates comprehensive knowledge of previous and current research in the field of study					
2. generates a viable question within the field of study and poses a worthwhile problem or hypothesis related to the question					
3. applies sound research methods to the problem or hypothesis and describes the methods effectively					
5. performs statistical analyses of research data and presents the results in a way that makes clear sense of the data					
6. discusses solution to problem or support for hypothesis in a way that effectively documents the contribution of research to area of study					
7. demonstrates sufficient knowledge of appropriate concepts, theories, and emerging methodologies in food science					
8. demonstrates qualities of independent, self-motivated researcher with the ability to recognize problems in the field of study and formulate solutions to the problems					

Comments:

Committee Member: _____