Framingham State University

Program Assessment Plan for MS – Food and Nutrition with a Specialization in Food Science and Nutrition Science

Assessment Coordinator:	Sarah Pilkenton
Program Coordinator:	Sarah Pilkenton
Date Created/Updated:	Created: 4/26/2016 Updated: 2/9/2022

1) PROGRAM MISSION STATEMENT (and goals)

The goal of this program is to provide graduate education in food science by incorporating relevant courses and labs, practical training, and laboratory research or an industrial practicum. Students will gain scientific knowledge and develop technical skills relevant to the food industry by either engaging in laboratory research culminating in an MS thesis or engaging in a food industrial practicum if pursuing the non-thesis option.

2) PROGRAM LEARNING OBJECTIVES

1. Demonstrate knowledge of fundamental concepts in food science.
2. Evaluate and analyze realistic situations in the food industry.
3. Produce high quality written reports and present their contents effectively
4. Demonstrate the ability to thoroughly review scientific literature
5. Perform high quality research in specific areas relevant to food processing technology, food engineering, or food biochemistry (MS thesis option), or demonstrate knowledge and technical skills developed through a laboratory practicum (non-thesis option).

3) LEARNING OPPORTUNITIES <u>Share with Students and Advisors</u>

Learning Outcome	Core Courses				Concentration Courses					Elective Course
	FDSC 911	FDSC 921 or FDSC 960	NUTR 874	NUTR 903	FDSC 808	FDSC 815	CHEM 821	FDSC 813	FDSC 805	
demonstrate knowledge of fundamental concepts in functional foods	I	E	R	R					R	R
evaluate complex situations in the food industry and provide appropriate solutions	I	E			R	R		R	R	
produce high quality written reports and present their contents effectively	I	E			R	R	R	R	R	
demonstrate the ability to thoroughly review scientific literature	I	E					R			R
perform high quality research in specific areas relevant to functional foods	I	E							R	

I: Introductory, R: Reinforce, E: Emphasize

Course Code Key
FDSC 805 Food Analysis
NUTR 874 Human Nutrition Science
NUTR 903 Advanced Nutrition and Metabolism
FDSC 808 Food Chemistry
FDSC 815 Food Engineering and Processing
FDSC 813 Food Safety and Microbiology
CHEM 821 Instrumental Analysis
FDSC 911 Research and Seminar in Food Science/Nutritional Biochemistry
FDSC 921 Laboratory Practicum
FDSC 960 Thesis in Food Science/Nutritional Biochemistry
Elective Course (800 or 900 level graduate level elective course)

4) ASSESSMENT METHODS AND TIMELINE

Academic Years	Outcome(s)	Course(s)	Assessment Evidence (direct/indirect)	Assessment Method	Responsibility
WHEN	WHICH outcome(s) will you examine in each period (Use number)?	WHERE will you look for evidence of student learning (i.e., list course(s) that will generate evidence for each objective.	WHAT student work or other evidence will you examine in order to assess each objective?	HOW will you look at the evidence; what means will you use to analyze the evidence collected for each objective	WHO will oversee collecting, analyzing, reporting, results? List names or titles.
Year 1 (21/22)	PLO1, PLO2, PLO3, PLO4, PLO5 **(COLLECT)**	FDSC 921, FDSC 960, and Oral Comprehensive Examination (PLO1-5)	1) Thesis (FDSC 960) 2) Lab performance and final report (FDSC 921) 3) Oral Comprehensive Examination	1) Evaluate thesis (FDSC 960) for PLOs 1-5. 2) Evaluate written report (FDSC 921) for PLOs 1-5 3) Oral Comprehensive Examination for PLOs 1-3.	**Collection:** Faculty supervising FDSC 921 and 960
Year 2 (22/23)	PLO1, PLO2, PLO3, PLO4, PLO5 **(COLLECT)**	FDSC 921, FDSC 960, and Oral Comprehensive Examination (PLO1-5)	1) Thesis (FDSC 960) 2) Lab performance and final report (FDSC 921) 3) Oral Comprehensive Examination	1) Evaluate thesis (FDSC 960) for PLOs 1-5. 2) Evaluate written report (FDSC 921) for PLOs 1-5 3) Oral Comprehensive Examination for PLOs 1-3.	**Collection:** Faculty supervising FDSC 921 and 960
Year 3 (23/24)	PLO1, PLO2, PLO3, PLO4, PLO5 **(COLLECT)**	FDSC 921, FDSC 960, and Oral Comprehensive Examination (PLO1-5)	1) Thesis (FDSC 960) 2) Lab performance and final report (FDSC 921) 3) Oral Comprehensive Examination	1) Evaluate thesis (FDSC 960) for PLOs 1-5. 2) Evaluate written report (FDSC 921) for PLOs 1-5 3) Oral Comprehensive Examination for PLOs 1-3.	**Collection:** Faculty supervising FDSC 921 and 960

Year 4 (24/25)	PLO1, PLO2, PLO3, PLO4, PLO5 **(COLLECT)**	FDSC 921, FDSC 960, and Oral Comprehensive Examination (PLO1-5)	1) Thesis (FDSC 960) 2) Lab performance and final report (FDSC 921) 3) Oral Comprehensive Examination	1) Evaluate thesis (FDSC 960) for PLOs 1-5. 2) Evaluate written report (FDSC 921) for PLOs 1-5 3) Oral Comprehensive Examination for PLOs 1-3.	**Collection:** Faculty supervising FDSC 921 and 960
Year 5 (25/26)	PLO1, PLO2, PLO3, PLO4, PLO5 **(COLLECT)** PLO1, PLO2, PLO3, PLO4, PLO5 collected from previous years **(ASSESS)**	FDSC 921, FDSC 960, and Oral Comprehensive Examination (PLO1-5)	1) Thesis (FDSC 960) 2) Lab performance and final report (FDSC 921) 3) Oral Comprehensive Examination	1) Evaluate thesis (FDSC 960) for PLOs 1-5. 2) Evaluate written report (FDSC 921) for PLOs 1-5 3) Oral Comprehensive Examination for PLOs 1-3.	**Collection:** Faculty supervising FDSC 921 and 960 **Analysis:** Program Coordinator and Advisor **Report:** Program Coordinator

Program Size and Sampling Technique

a. State the number of students in the program or the number who graduate each year.

   Approximately two students graduate from the program per year.

b. Describe the sampling technique to be used.

   Data will be collected for all students in the graduate program each academic year and evaluated in aggregate as indicated in the assessment timeline.

4) PLAN FOR ANALYZING RESULTS

- List who is responsible for distributing results and who will receive results?

  The results will be shared with all full-time tenure/tenure track faculty and will be stored in the program coordinator's office.

- State how and at which forums discussion of results will take place.

  Discussion of the results will take place during the department's annual retreat.

5) DISTRIBUTION. The program will distribute or publish these items in the following ways:

ITEM	***Distribution Method***					
	FSU Catalog (provide section title)	**Website** (provide URL)	**Annual Reports**	**Brochures**	**Course Syllabi**	**Other** (please describe, e.g. department meeting, advising session)
Program Mission	X	X (https://www.framingham.edu/academics/graduate-studies/graduate-degree-programs/master-of-science-food-and-nutrition/master-of-science-concentration-in-food-and-nutrition-specialization-in-food-science-and-nutrition-science)	X			Department meetings and annual retreat
Program Learning Objectives		X (https://www.framingham.edu/academics/graduate-studies/graduate-degree-programs/master-of-science-food-and-nutrition/learning-outcomes)	X			Department meetings and annual retreat
Learning Opportunities (Curriculum Map)		X (https://www.framingham.edu/Assets/uploads/academics/graduate-studies/_documents/msj-fsns-curriculummap.pdf)	X			Department meetings and annual retreat
Assessment Plan		X (https://www.framingham.edu/about-fsu/office-of-assessment/graduate-assessment/graduate-program-assessment)	X			Department meetings and annual retreat

Attach any rubrics or instrumentation that you plan to use for assessment of Program Learning Objectives

Critique Your Plan

Use the following rubric to review your assessment plan:

[1] If you have questions or need assistance, please contact Dr. Mark Nicholas, Director of Assessment at mnicholas1@framingham.edu or 508-626-4670

[1] Accredited programs can provide supplemental documents that indicate the answers to these questions as long as specific page references are provided in each cell of the tables in this form. When the answers are not accessible in that way, please cut and paste into your assessment plan.

Student Learning Assessment – Thesis Defense
MS – Concentration in Food Science and Nutrition Science Specialization in Food Science and Nutrition Science
Framingham State University

Program Learning Objective	Exceeds Expectations (3 pts)	Meets Expectations (2 pts)	Below Expectations (1 pt)	Not Included (0 pts)
PLO1: Demonstrate knowledge of fundamental concepts in food science.	• In depth description of functional foods/ingredients in terms of antioxidants, disease prevention, and other health benefits	• Describe functional foods/ingredients in terms of antioxidants, disease prevention, and other health benefits	• Limited description of functional foods/ingredients in terms of antioxidants, disease prevention, and other health benefits	
PLO2: Evaluate and analyze realistic situations in the food industry	• In depth oral description of critical choices in experimental design and execution • In depth oral description of potential applications of the research outcomes with respect to food industry	• Oral description of critical choices in experimental design and execution • Oral description of potential applications of the research outcomes with respect to food industry	• Poor oral descriptions of the experimental design and execution • Poor oral description of the potential applications of the research outcomes with respect to food industry	

PLO 3: Produce high quality written reports and present their contents effectively	• Logical presentation following standard scientific reporting format. • No apparent flaws in the scientific reasoning. • Technically well-written. • No grammatical errors.	• Logical presentation following standard scientific reporting format. • No serious flaws in the scientific reasoning. • May contain minor mistakes which do not invalidate the main point(s) of the paper. • May contain minor grammatical errors, but not enough to affect understanding by the reader.	• The comprehensive paper is poorly written: it does not present a logical discussion of a topic. • There are serious errors in stated facts or in the scientific reasoning presented in the paper.	
PLO4: Demonstrate the ability to thoroughly review scientific literature	• Relevant and more than sufficient number of citations of peer-reviewed scientific literature. • Includes current citations. • Thorough and critical evaluation of technical articles. • Literature citations follow an acceptable format.	• Contains a minimum number of citations of relevant peer-reviewed scientific literature. • Includes current citations. • Literature citations follow an acceptable format.	• The comprehensive paper does not contain adequate citations, either to allow the reader to conclude that proper credit has been given to scientific research sources or to bolster statements or conclusions presented in the paper. Enough recent articles have not been cited to ensure that an up-to-date review of the topic has been performed.	

PLO5: Perform high quality research in specific areas relevant to food processing technology, food engineering, or food biochemistry	• Explains concepts clearly and accurately. Links laboratory (or literature) research methods and results to principles learned in coursework. • Defines a research problem (literature or student's own laboratory experience). • Explains experimental design for study of problem. • Accurately analyzes data and clearly presents findings. • Draws/discusses appropriate conclusions. • Discusses topics beyond the coursework exposure.	• Explains concepts clearly and accurately. Links laboratory (or literature) research methods and results to principles learned in coursework. • Defines a research problem (literature or student's own laboratory experience). • Explains experimental design for study of problem. • Accurately analyzes data and clearly presents findings. • Draws/discusses appropriate conclusions.	• Demonstrates limited and/or inconsistent understanding of curricular content, chemical concepts and related areas in the paper. • Fails to explain concepts clearly and accurately. • Does not integrate laboratory (or literature) research methods and results to principles learned in coursework.	

Name: _____

Student Learning Assessment – MS Thesis Defense
MS – Concentration in Food Science and Nutrition Science with a Specialization in Food Science and Nutrition Science
Framingham State University

Program Learning Objective	Exceeds Expectations (3 pts)	Meets Expectations (2 pts)	Below Expectations (1 pt)	Not Included (0 pts)
PLO1: Demonstrate knowledge of fundamental concepts in food science				
PLO2: Evaluate and analyze realistic situations in the food industry				
PLO3: Produce high quality written reports and present their contents effectively				
PLO4: Demonstrate the ability to thoroughly review scientific literature				
PLO5: Perform high quality research in specific areas relevant to food processing technology, food engineering, or food biochemistry				

Total Score: _____/15

Credits: This Assessment Plan was developed using ideas from templates developed at University of Rhode Island and University of Hawaii in Manoa

FRAMINGHAM STATE UNIVERSITY

NECHE Indicators of Educational Effectiveness

If you have any questions or concerns about the form, please contact Jena Shepard at jshepard1@framingham.edu or 508-215-5884.

Program Assessment

First Name: * Sarah

Last Name: * Pilkenton

Banner ID: * 100394572

Email: * spilkenton@framingham.edu

Please select the reporting period this assessment/accreditation work was completed:

* 2022-2023

Please select the type of program you completed assessment/accreditation work for this reporting period:
Note: If changing your initial selection, please refresh this page prior to making a new selection.

* Graduate Program

Please select the program you completed assessment for during this reporting period:

* Master of Science - Food and Nutrition, Specialization Food Science

Please select the option that best describes the assessment work completed during this reporting period.

* ○ Only assessed program learning objective(s)
- ◉ Only completed other assessment activities (ex. assessment plan, rubrics etc.)
- ○ Assessed program learning objective(s) and completed other assessment activities (ex. assessment plan, rubrics etc.)
- ○ Did not undertake program assessment work

Assessment Activities

Please list the assessment activities (other than the assessment of program learning objectives) completed during this reporting period (assessment plans, rubrics etc.).

*
1. One student completed the program during the Spring 2023 semester. Their thesis was collected for evaluation of PLOs 1-5.
2. The admissions requirements for the program were evaluated and a log has been submitted to GEC. The changes to the admissions requirements include:
a. The GRE requirement has been removed to make the application process to the program more accessible.
b. The format of the admissions requirements has been written in a format that makes the requirements more transparent using a list instead of paragraph form.

Please attach the related documents produced as a result of the activities listed in above (mandatory if funding is requested for this work):

MS in Food Science - Assessment Plan 2022.zip

Funding

Are you seeking funding for assessment work completed in this report?
You can request a maximum of $1,000 for this reporting period.

* ○ Yes
- ◉ No

Program Information

Enter the year of the most recent program review. If the program is new, enter the upcoming program review year or enter TBD (to be determined).

* An assessment of the program was submitted in December 2019. A new assessment plan was developed and submitted in Feb

Insert the URL of the web page where Program Learning Objectives for this program are published:
NECHE requires this as part of being transparent to stakeholders.

* https://www.framingham.edu/academics/graduate-studies/graduate-degree-programs/master-of-science-food-and-nutrition/learr

Signatures

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Sarah Pilkenton
Submitter Signature

11/28/2023
Date

Office of Institutional Assessment

Office of Institutional Assessment Only

Institutional Assessment Signature

Date