

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA  
ACADEMIC SENATE

ACADEMIC PROGRAMS COMMITTEE

REPORT TO  
THE ACADEMIC SENATE

AP-015-156

MS IN AGRICULTURE, OPTION IN NUTRITION AND FOOD SCIENCE FOR  
SEMESTERS

Academic Programs Committee

Date: 11/13/2016

Executive Committee  
Received and Forwarded

Date: 11/16/2016

Academic Senate

Date: 05/04/2016  
First Reading  
11/30/2016  
Second Reading

**BACKGROUND:** The Department of Human Nutrition and Food Science has put forward a referral for Master of Science in Agriculture, option in Nutrition and Food Science for semesters. This is a revised program.

**RESOURCES CONSULTED:**

Deans  
Associate Deans  
Department Chairs  
All Faculty

**DISCUSSION:**

Before reaching the Academic Programs Committee, this program was reviewed by the College Curriculum Committee in the College of Agriculture as well as the Dean of Agriculture and the Office of Academic Programs. All concerns raised at those levels were addressed. The Academic Programs Committee then conducted campus-wide consultation, as well as its own review of the program. With the exception of the following comment from Curriculog, no concerns were raised.

“The evaluation of the information collected for its assessment program needs work: A rubric for evaluating how and how well students engaged and met or surpassed the learning outcomes under review would make the evaluation process more consistent and allow comparisons of different cohorts. The other materials are sound.” (By Dr. Dan Lewis)

In consideration of this issue, a revised assessment plan was developed and added to the program documents in Curriculog. While there may be room for further improvement to the assessment plan, assessment is an area where University policy and priorities are likely to undergo rapid change in coming years, so it is appropriate that further revisions to the assessment plan be undertaken as part of University-wide planning processes.

**RECOMMENDATION:**

The Academic Programs Committee recommends approval of the semester program Master of Science in Agriculture, option in Nutrition and Food Science.

**Master of Agriculture with an option in Nutrition and Food Science****SEMESTER CONVERSION****College of Agriculture Requirement**

College	3-6^
<u>Required for both thesis and exam track</u>	<u>24-29</u>
<b>TOTAL UNITS FOR DEGREE</b>	<b>32-35</b>

^ Exam based does not require AG 5300—requires NUTR 6300

**Prerequisites for the Graduate Program**

BIO 1150/L or BIO 1230/L  
 CHM 1220/L  
 CHM 2010/L or CHM 3150/L  
 STA 1200 or higher level (may need to take additional STA classes)  
 GPA 3.0 or higher  
 TOEFL =550 or higher no IELTS  
 GRE, minimum 297 and 153 verbal, and 3.5 in writing,

**Nutrition only prerequisites:****B- or higher in the following:**

BIO 2350/L	Physiology or equivalent
NUTR 2350	Nutrition or equivalent

**Food Science only prerequisites****B- or better in the following:**

FST 1250	Introduction to Food Science & Technology or equivalent
BIO 2060/L	General Microbiology
PHY 1210/1210L	College Physics or equivalent
MAT 1200	Calculus for Life Sciences or equivalent

**Required Ag Core Courses for Nutrition Thesis**

AG 5000	Introduction to Graduate Research	3
AG 5300	Research Proposal	3
<b>Total</b>		<b>6</b>
<b>Nutrition Thesis Track</b>		
STA 5XXX	Statistical Methods (TBA by advisor)	3
NUTR 5100	Nutrition Research Methods	3
NUTR 5330	Evaluation of the DRIs	2
NUTR 5700	Seminar	1
NUTR 5710	Seminar-Journal Club	1
NUTR 5350	Advanced Metabolism Nutrition Science I, II, III, IV, V	2
NUTR 5350	Advanced Metabolism Nutrition Science I, II, III, IV, V	2
NUTR 5360	Advanced Lifecycle Nutrition	3
NUTR 6930	Proposal Defense (advancement to candidacy)	2
NUTR 6940	Research Thesis I	2
NUTR 6940	Research Thesis II	2
<b>Electives</b>		<b>0</b>
<b>Total</b>		<b>23</b>
<b>Terminal Requirement</b>		
NUTR 6960	Thesis Defense	2
<b>Total for Nutrition Thesis</b>		<b>32</b>

**Required Ag Core Courses Nutrition Exam-Based**

AG 5000	Introduction to Graduate Research	3
<b>Total</b>		<b>3</b>
<b>Nutrition Exam Track</b>		
STA 5XXX	Statistical Methods (TBA by advisor)	3
NUTR 5100	Nutrition Research Methods	3
NUTR 5330	Evaluation of the DRIs	2
NUTR 5700	Seminar	1
NUTR 5710	Seminar-Journal Club	1
NUTR 5350	Advanced Metabolism Nutrition Science I, II, III, IV, V	2
NUTR 5350	Advanced Metabolism Nutrition Science I, II, III, IV, V	2
NUTR 5360	Advanced Lifecycle Nutrition	3
AG 6300/NUTR 6300	Critical Review Development	4
<b>Electives</b>	Elective classes chosen in consultation with their advisor	6
<b>Total</b>		<b>27</b>
<b>Terminal Requirement</b>		
AG 6970	Exam (based on their Critical Review)	2
<b>Total for Nutrition Exam</b>		<b>32</b>

**College of Ag Requirement-Food Science-Thesis track**

AG 5000	Introduction to Graduate Research	3
AG 5300	Research Proposal	3

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<b>Total</b>		<b>6</b>
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**Required Core Major Classes-Food Science**

STA 5XXX	Statistical Methods-to be decided by thesis chair	3
FST 5251	Advanced Topics in Food Science & Technology	3
FST 5700	Seminar	2
NUTR 6930	Proposal Defense (advancement to candidacy)	2
NUTR 6940	Research Thesis I	2
NUTR 6940	Research Thesis II	2

<b>Electives</b>	Elective classes chosen in consultation with their advisor	9
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<b>Total</b>		<b>22</b>
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**Terminal Requirement**

NUTR 6960	Thesis Defense	2
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<b>Total for Food Science Thesis</b>		<b>31</b>
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**\*\*Graduate Electives:**

NUTR 5400	Field Experience	(1-2)
NUTR 5500	Independent Study	(1-2)
NUTR 5990/L/A	Special Topics	(1-3)
NUTR 6850	Nutrition in Sports and Exercise	3
NUTR 6910	Directed Study (may lead to thesis) 4 units max credit	(1-2)
NUTR 6920	Directed Study (may not lead to thesis) 4 units max credit	(1-2)
NUTR 6990	Master's Degree Thesis Continuation	0
FST 5200	Advanced Food Chemistry	3
FST 5990/L/A	Special Topics	(1-3)

\*\*Others to be decided in conjunction with thesis chair and Department Graduate Coordinator

**MS in AG, Nutrition and Food Science –Nutrition Thesis track  
Curriculum Years: 2018-2020**

*Your department has developed this road plan, taking into account prerequisites and schedule restrictions. You should pay attention to these concerns when deviating from this plan, however there are many variations that still lead to graduation in four years. Please see the NUTR courses offered each quarter in Blackboard. Sometimes it is necessary to offer a class on a different quarter.*

<b>Year 1</b>	<b>Fall</b>	<b>Units</b>	<b>Spring</b>	<b>Units</b>	<b>Supplement Semester to take elective units. Cannot use 3000 level classes towards Master Requirements. *STA XXX is a class in Statistics that will be taken in conjunction with advisor approval</b>
	AG 5000	3	AG 5300	3	
	STA XXXX*	3	NUTR 6930	2	
	NUTR 5330	2	NUTR 5100	3	
	NUTR 5360	3	NUTR 5350	2	
			NUTR 5700	1	
	<b>Total Units</b>	<b>11</b>	<b>Total Units</b>	<b>11</b>	
		Total Units for Year 1	<b>22</b>		
<b>Year 2</b>	<b>Fall</b>	<b>Units</b>	<b>Spring</b>	<b>Units</b>	<b>Supplement Semester to take elective units. Cannot use 3000 level classes towards Master Requirements.</b>
	NUTR 5350	2			
	NUTR 6940	2	NUTR 6940	2	
	NUTR 5710	1	NUTR 6960	2	
	<b>Total Units</b>	<b>5</b>	<b>Total Units</b>		
			Total Units for Year 2	<b>9</b>	

**MS in AG, Nutrition and Food Science –Nutrition Exam Based track  
Curriculum Years: 2018-2020**

*Your department has developed this road plan, taking into account prerequisites and schedule restrictions. You should pay attention to these concerns when deviating from this plan, however there are many variations that still lead to graduation in four years. Please see the NUTR courses offered each quarter in Blackboard. Sometimes it is necessary to offer a class on a different quarter.*

<b>Year 1</b>	<b>Fall</b>	<b>Units</b>	<b>Spring</b>	<b>Units</b>	<b>Supplement Semester to take elective units</b> Cannot use 3000 level classes towards Master Requirements *STA XXX is a class in Statistics that will be taken in conjunction with advisor approval
	AG 5000	3	NUTR 5100	3	
	STA XXXX*	3	NUTR 5350	2	
	NUTR 5330	2	NUTR 5700	1	
	NUTR 5360	3	NUTR 6930	2	
	<b>Total Units</b>	<b>11</b>	<b>Total Units</b>	<b>8</b>	
			Total Units for Year 1	<b>19</b>	
<b>Year 2</b>	<b>Fall</b>	<b>Units</b>	<b>Spring</b>	<b>Units</b>	<b>Supplement Semester to take elective units</b> Cannot use 3000 level classes towards Master Requirements
	NUTR 5350	2	Elective	3	
	NUTR 6300	2	Elective	2	
	Elective	1	NUTR 6970	2	
	NUTR 5710	1			
	<b>Total Units</b>	<b>6</b>	<b>Total Units</b>	<b>7</b>	
			Total Units for Year 2	<b>13</b>	



**MS in Agriculture-Nutrition and Food Science, Food Science-Thesis Based  
Curriculum Years: 2018-2020**

*Your department has developed this road plan, taking into account prerequisites and schedule restrictions. You should pay attention to these concerns when deviating from this plan, however there are many variations that still lead to graduation in four years. Please see the NUTR courses offered each quarter in Blackboard. Sometimes it is necessary to offer a class on a different quarter.*

<b>Year 1</b>	<b>Fall</b>	<b>Units</b>	<b>Spring</b>	<b>Units</b>	<b>Supplement Semester to take elective units. Cannot use 3000 level classes towards Master Requirements. *STA XXX is a class in Statistics that will be taken in conjunction with advisor approval.</b>
	AG 5000	3	AG 5300	3	
	STA XXXX*	3	NUTR 6930	2	
	FST 5700	2	Elective	3	
			Elective	3	
	<b>Total Units</b>	<b>8</b>	<b>Total Units</b>	<b>11</b>	
			Total Units for Year 1	<b>19</b>	
<b>Year 2</b>	<b>Fall</b>	<b>Units</b>	<b>Spring</b>	<b>Units</b>	<b>Supplement Semester to take elective units. Cannot use 3000 level classes towards Master Requirements *STA XXX is a class in Statistics that will be taken in conjunction with advisor approval.</b>
	FST 5251	3	Elective	2	
	NUTR 6940	2	NUTR 6940	2	
	Elective	1	NUTR 6960	2	
	<b>Total Units</b>	<b>6</b>	<b>Total Units</b>	<b>6</b>	
			Total Units for Year 2	<b>12</b>	

**Graduate Program Two-Year Schedule 2018-2019**

Proposed	Course	Units	Offered
NUTR 5100	Nutrition Research Methods	3	S
FST 5251	Advanced Topics in Food Science & Technology	3	F
NUTR 5330	Advanced Nutrition-Evaluation of the DRIs	2	F
NUTR 5350	Advanced Metabolism Nutrition Science I, II, III, IV, V	2	S, F
NUTR 5360	Advanced Lifecycle Nutrition	3	S
NUTR 5400	Field Experience	(1-2)	N
NUTR 5430	Advanced Medical Nutrition Therapy	2	S
NUTR 5450	Current Topics in Clinical Practice I, II	2	F, S
NUTR 5500	Independent Study	(1-2)	F, S, Su
NUTR 5600	Clinical Practice I, II	4	F, S, Su
NUTR 5600S	Clinical Practice Service Learning I, II	4	F, S, Su
NUTR 5700	Seminar	1	F
FST 5700	Seminar	2	S
NUTR 5710	Seminar-Journal Club	1	S
NUTR 5990/L/A	Special Topics for Graduate Students	(1-3)	F, S, Su
FST 5990/L/A	Special Topics	(1-3)	F, S, Su
NUTR 6300	Critical Review Development	3	F
NUTR 6850	Nutrition in Sports and Exercise	3	S
NUTR 6910	Directed Study (may lead to thesis) 4 units max credit	(1-2)	F, S, Su
NUTR 6920	Directed Study (may not lead to thesis) 4 units max credit	(1-2)	F, S, Su
NUTR 6930	Proposal Defense (advancement to candidacy)	2	F, S, Su
NUTR 6940	Research Thesis I, II	2	F, S, Su
NUTR 6960	Thesis Defense	2	F, S, Su
NUTR 6990	Master's Degree Thesis Continuation	0	F, S, Su

**N= as needed**

**Graduate Program Two-Year Schedule 2019-2020**

Proposed	Course	Units	Offered
NUTR 5100	Nutrition Research Methods	3	S
FST 5251	Advanced Topics in Food Science & Technology	3	S
NUTR 5330	Advanced Nutrition-Evaluation of the DRIs	2	F
NUTR 5350	Advanced Metabolism Nutrition Science I, II, III, IV, V	2	S, F
NUTR 5360	Advanced Lifecycle Nutrition	3	S
NUTR 5400	Field Experience	(1-2)	N
NUTR 5430	Advanced Medical Nutrition Therapy	2	S
NUTR 5450	Current Topics in Clinical Practice I, II	2	F, S
NUTR 5500	Independent Study	(1-2)	F, S, Su
NUTR 5600	Clinical Practice I, II	4	F, S, Su
NUTR 5600S	Clinical Practice Service Learning I, II	4	F, S, Su
NUTR 5700	Seminar	1	F
FST 5700	Seminar	2	S
NUTR 5710	Seminar-Journal Club	1	S
NUTR 5990/L/A	Special Topics for Graduate Students	(1-3)	F, S, Su
FST 5990/L/A	Special Topics	(1-3)	F, S, Su
NUTR 6300	Critical Review Development	3	F
NUTR 6850	Nutrition in Sports and Exercise	3	S
NUTR 6910	Directed Study (may lead to thesis) 4 units max credit	(1-2)	F, S, Su
NUTR 6920	Directed Study (may not lead to thesis) 4 units max credit	(1-2)	F, S, Su
NUTR 6930	Proposal Defense (advancement to candidacy)	2	F, S, Su
NUTR 6940	Research Thesis I, II	2	F, S, Su
NUTR 6960	Thesis Defense	2	F, S, Su
NUTR 6990	Master's Degree Thesis Continuation	0	F, S, Su

**N= as needed**

**College of Agriculture Graduate Mission Statement:**

The Master's Program in the College of Agriculture serves a diverse student population pursuing both applied learning and thesis-based degrees in agriculturally related fields. Upon degree completion, students are equipped to address challenges and critical issues that impact and influence their field of specialization. Mentoring, training and resources essential to skill development that promote life-long learning and critical thinking are provided, positioning graduates as leaders in their chosen discipline.

**College of Agriculture Graduate Program Goals:**

Upon completion of a Master's Degree in Agricultural Science from Cal Poly Pomona, students will be prepared to:

- \* Identify and propose solutions to problems facing their specified field of interest in agriculture
- \* Critically evaluate a body of research to identify problem and methodology, statistics and interpretation of research
- \* Conduct or interpret research in their chosen field of agriculture and have the ability to utilize or produce new findings that advance and enhance knowledge in their discipline of interest (thesis-based graduates)
- \* Demonstrate an advanced level of writing and communication skills

## **Graduate Program Mission and Goals-10/09/15** **MS in Agriculture with an Option in Nutrition and Food Science**

### **Mission**

The Mission of the Master of Science in Agriculture with the sub-plan in Nutrition and Food Science is to prepare and help students acquire the skills to pursue careers in teaching, research industry, or advanced graduate studies by offering a flexible, interdisciplinary in-depth curriculum in principles and application of nutrition and food sciences.

### **Program Goals:**

Program Goal #1: The program prepares Master students for nutrition or food science careers, dietitians, teaching positions or admittance to nutrition or food science related postgraduate program

Program Goal #2: The program will develop research skills and foster an evidence-based approach to practice.

Program Goal #3: The program will produce graduates with the knowledge and skill base to be successful professionals in the food and nutrition/food science field(s).

### **Program Student Learning Objectives:**

Section 1: Scientific and Evidence Base of Practice: integration of scientific information and research into practice

1.1 Students demonstrate how to locate, interpret, evaluate and use professional literature

1.2 Students are able to use current information technologies to locate and apply evidence based guidelines and protocols.

1.3 Students demonstrate effective professional oral and written communication

Section 2: Delivery of information to individuals, groups and populations

1.1 Students are able to describe the role of nutrients and non-nutrients in health promotion and disease prevention or across the lifespan

1.2 Students are able to integrate genetic, physiologic and biochemical mechanisms by which food and nutrients promote optimal health

1.3 Students are able to locate, understand and apply established nutrition guidelines.

1.4 Students apply knowledge of the role of environment, food and lifestyle choices.

1.5 Students develop an educational session/program/educational strategy/research thesis/critical review for target populations

Section 3: The student will develop research skills and foster an evidence-based approach to practice.

1.1 Students develop outcome measures, use informatics principles and technology to collect and analyze data.

1.2 Students are able to understand and demonstrate the scientific method and the application of research methodologies.

1.3 Students are able to interpret statistics used in nutrition and medical research.

Assessment:

Students will be assessed in each class by the professor and the results of the assessment will be sent to the Graduate Coordinator, who will write up an assessment report each semester. These results will be compiled into a report, and put in a file for WASC or ACEND accreditation and/or program evaluation. Recent graduates will be assessed using an online questionnaire for Program Goal #1 assessment from employers and the alumni.

**Section 1: Identify and propose solutions to problems facing their specified field of interest in agriculture**

College Program Goals

Department Program Goals	Identify and propose solutions to problems facing their specified field of interest in agriculture	Critically evaluate a body of research to identify problem and methodology, statistics and interpretation of research	Conduct or interpret research in their chosen field of agriculture and have the ability to utilize or produce new findings that advance and enhance knowledge in their discipline of interest (thesis-based graduates)	Demonstrate an advanced level of writing and communication skills
The program prepares Master students for nutrition or food science careers, dietitians, teaching positions or admittance to nutrition or food science related postgraduate program	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
The program will develop research skills and foster an evidence-based approach to practice	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
The program will produce graduates with the knowledge and skill base to be successful professionals in the food and nutrition/food science field(s).	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

Section 1: Scientific and Evidence Base of Practice: integration of scientific information and research into practice

Program Goals	SLO # 1.1 Students demonstrate how to locate, interpret, evaluate and use professional literature	SLO # 1.2 Students are able to use current information technologies to locate and apply evidence based guidelines and protocols.	SLO # 1.3 Students demonstrate effective professional oral and written communication
The program prepares Master students for nutrition or food science careers, dietitians, teaching positions or admittance to nutrition or food science related postgraduate program	<b>X</b>	<b>X</b>	<b>X</b>
The program will develop research skills and foster an evidence-based approach to practice	<b>X</b>	<b>X</b>	<b>X</b>
The program will produce graduates with the knowledge and skill base to be successful professionals in the food and nutrition/food science field(s).	<b>X</b>		<b>X</b>



Section 2: Delivery of information to individuals, groups and populations

Program Goals	SLO #2.1 Students are able to describe the role of nutrients and non-nutrients in health promotion and disease prevention or across the lifespan	SLO # 2.2 Students are able to integrate genetic, physiologic and biochemical mechanisms by which food and nutrients promote optimal health	SLO # 2.3 Students are able to locate, understand and apply established nutrition guidelines.	SLO # 2.4 Students apply knowledge of the role of environment, food and lifestyle choices.	SLO# 2.5 Students develop a program or educational strategy or research thesis/critical review
The program prepares Master students for nutrition or food science careers, dietitians, teaching positions or admittance to nutrition or food science related postgraduate program	<b>X</b>		<b>X</b>	<b>X</b>	<b>X</b>
The program will develop research skills and foster an evidence-based approach to practice	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
The program will produce graduates with the knowledge and skill base to be successful professionals in the food and nutrition/food science field(s).	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

Section 3: The student will develop research skills and foster an evidence-based approach to practice.

Program Goals	SLO#3.1 Students develop outcome measures, use informatics principles and technology to collect and analyze data.	SLO# 3.2 Students are able to understand and demonstrate the scientific method and the application of research methodologies.	SLO# 3.3 Students are able to interpret statistics used in nutrition and medical research
The program prepares Master students for nutrition or food science careers, dietitians, teaching positions or admittance to nutrition or food science related postgraduate program	<b>X</b>	<b>X</b>	<b>X</b>
The program will develop research skills and foster an evidence-based approach to practice	<b>X</b>	<b>X</b>	<b>X</b>
The program will produce graduates with the knowledge and skill base to be successful professionals in the food and nutrition/food science field(s).		<b>X</b>	<b>X</b>

**Mapping of NFS Master Classes to SLOs**

Course number	1.1.1	1.1.2	1.1.3	2.1.1	2.1.2	2.1.3	2.1.4	2.1.5	3.1.1	3.1.2	3.1.3	Assessment
AG 5000	X	X	X							X		Embedded test questions and project completion
AG 5300	X		X							X		"
STA 5XXX			X						X	X	X	"
NUTR 5100	X	X	X			X			X		X	"
NUTR 5330	X	X	X			X					X	"
NUTR 5700	X	X	X	X		X					X	"
NUTR 5710	X	X	X	X		X					X	"
NUTR 5350	X	X	X	X	X				X		X	"
NUTR 5360	X	X	X	X	X		X	X				"
NUTR 6930	X	X	X						X		X	"
NUTR 6940	X	X	X						X		X	"
NUTR 6300	X		X						X		X	"
NUTR 6960	X	X	X		X		X	X	X		X	"
NUTR 6970			X	X	X			X			X	"
FST 5251	X	X	X				X		X	X	X	"
FST 5700	X	X	X	X			X		X		X	"

Courses are assessed every semester and a report filed with the Department Coordinator