Program: Animal Science CERTA Food Science	*Curriculum Map*								
Program Outcomes: Upon completion of the program, graduates will be able to…	**Essential Skills**	**demonstrate knowledge of the importance to food safety to human well-being.**	**describe the role that food companies have in making efficient and safe food products.**	**extrapolate the role of HACCP and other food safety programs to the safety of food.**	**explain the role of sanitation in regards to food safety.**	**differentiate the differences between inspection and grading of meat products.**	**describe desirable and undesirable traits of common cleaners and sanitizers.**	**explain the impact of other interventions, including hurdle methods, in food safety.**	**discuss the importance of intrinsic factors in foods that affect food safety characteristics.**
Courses									
ANSI 129 - Meat & Carcass Evaluation	2,5		I			I			
ANSI 131 - Introduction to Food Science	1,3,5	IR	IR	IR	I	IR		IR	I
ANSI 206 - Principles of Meat Evaluation	3			R		R			
ANSI 207 - Principles of Meat Science	1,3,5	IR	IR	IR	IR	MA	IRMA	IR	IR
ANSI 209 - Food Sanitation Management	1,3,5	RMA	RMA	RMA	RMA		RMA	RMA	RMA
ANSI 212 - Food Safety	1,3,5	RMA	RMA	RMA	RMA		RMA	RMA	RMA
ANSI 2701, 2702, 2703, 2704, 2705, 2706 - Food Science	1	IRMA		IRMA				IRMA	

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

Essential Skills	
1	written communication
2	oral communication
3	critical thinking
4	cultural diversity
5	social responsibility

ANSI 129: Meat and Carcass Evaluation	*Curriculum Map*							
Program Outcomes	**demonstrate knowledge of the importance to food safety to human well-being.**	**describe the role that food companies have in making efficient and safe food products.**	**extrapolate the role of HACCP and other food safety programs to the safety of food.**	**explain the role of sanitation in regards to food safety.**	**differentiate the differences between inspection and grading of meat products.**	**describe desirable and undesirable traits of common cleaners and sanitizers.**	**explain the impact of other interventions, including hurdle methods, in food safety.**	**discuss the importance of intrinsic factors in foods that affect food safety characteristics.**
Course SLO: Students will be able to								
reconstruct the yield grade equation from base numbers to numerical terms.		I			I			
measure a beef ribeye within 2 tenths of an inch.		I			I			
calculate the weight and ribeye adjustment for the yield grade equation.		I			I			
compare and contrast USDA Yield Grade 1 with a USDA Yield Grade 5.		I			I			
evaluate the difference between fat thicknesses in beef carcasses.		I			I			
reconstruct the maturity and marbling relation chart to determine USDA Quality Grades.		I			I			
conduct a grading rail with a minimum of 250 points combined score.		I			I			
compare bone maturity between mature and youthful carcasses.		I			I			
rank a class of beef carcasses based on quality and yield grades.		I			I			
arrange notes to answer questions on beef quality classes.		I			I			
determine the cutability and quality limits for unacceptable beef.		I			I			
evaluate classes of pork carcasses, hams, and loins on quality attributes.		I			I			

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

determine final ranking of a lamb carcass class.		I			I			
analyze a class on note cards for written questions.		I			I			
rank a class to 90% accuracy.		I			I			
compare the PYG of the USDA Yield Grading system to tenths of inches.		I			I			
determine the difference in 1 square inch of ribeye in beef, pork and lamb.		I			I			
organize note cards for efficiency studying and review of notes.		I			I			
arrange a class with a learning topic for students with questions.		I			I			
defend a placing of a class in a contest.		I			I			
calculate the US grading scheme for pork carcasses.		I			I			
calculate percent muscle on a pork carcass.		I			I			
differentiate between PSE, RFN and DFD pork.		I			I			
relate the value of placing beef carcasses using a grid pricing system.		I			I			
list and differentiate between various cut locations in beef: ribeye, lower rib, round, inside round, sirloin, loin, rib, chuck, brisket, cod/udder, and KPH.		I			I			
list and differentiate between various cut locations of a pork carcass: loineye, lower rib, ham, sirloin, loin, center loin, first rib, last rib, last lumbar, collar, clear plate, belly pocket, navel edge, sternum, Boston and picnic shoulder and exposed lumbar lean.		I			I			

list and differentiate between various cuts/regions on a lamb carcass: leg, sirloin, dock, rack, loin, shoulder, crotch, kidney, pelvic, flank, cod/udder, stifle joint, breast, neck, break joints, spool joins, primary and secondary flanks.		I			I			
describe the basic quality factors for beef, pork and lamb.		I			I			
design an effective method for taking notes on questions classes.		I			I			
discriminate between acceptable and unacceptable quality and cutability.		I			I			

ANSI 131: Introduction to Food Science	*Curriculum Map*							
Program Outcomes	**demonstrate knowledge of the importance to food safety to human well-being.**	**describe the role that food companies have in making efficient and safe food products.**	**extrapolate the role of HACCP and other food safety programs to the safety of food.**	**explain the role of sanitation in regards to food safety.**	**differentiate the differences between inspection and grading of meat products.**	**describe desirable and undesirable traits of common cleaners and sanitizers.**	**explain the impact of other interventions, including hurdle methods, in food safety.**	**discuss the importance of intrinsic factors in foods that affect food safety characteristics.**
Course SLO: Students will be able to								
define the new opportunities in the food service industry from present challenges.	IR	IR	IR	I	IR		IR	I
list the various types of food establishments in the US.	IR	IR	IR	I	IR		IR	I
describe and define the terms foodborne illness and foodborne outbreak.	IR	IR	IR	I	IR		IR	I
describe susceptible people to foodborne illness infections.	IR	IR	IR	I	IR		IR	I
define the different food sensory characteristics.	IR	IR	IR	I	IR		IR	I
compare and contrast different economics that influence food consumption and production.	IR	IR	IR	I	IR		IR	I
define differences in heat transfer and microwave cooking.	IR	IR	IR	I	IR		IR	I
illustrate the differences in composition of food items.	IR	IR	IR	I	IR		IR	I
note types of food ingredients found in desserts, frozen foods, pastry, breads and quick breads.	IR	IR	IR	I	IR		IR	I
describe components and nutritional values of fruits and vegetables.	IR	IR	IR	I	IR		IR	I

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

compare, contrast and describe the nutritional values and components of milk, eggs, meat and seafood in a healthy diet.	IR	IR	IR	I	IR		IR	I
describe the role of beverages noting the most consumed in the US	IR	IR	IR	I	IR		IR	I
describe methods of food packaging and preservation.	IR	IR	IR	I	IR		IR	I
define methods of freezing and canning foods as well as nutritional changes in these forms of storage.	IR	IR	IR	I	IR		IR	I

ANSI 206: Principles of Meat Evaluation	*Curriculum Map*							
Program Outcomes	**demonstrate knowledge of the importance to food safety to human well-being.**	**describe the role that food companies have in making efficient and safe food products.**	**extrapolate the role of HACCP and other food safety programs to the safety of food.**	**explain the role of sanitation in regards to food safety.**	**differentiate the differences between inspection and grading of meat products.**	**describe desirable and undesirable traits of common cleaners and sanitizers.**	**explain the impact of other interventions, including hurdle methods, in food safety.**	**discuss the importance of intrinsic factors in foods that affect food safety characteristics.**
Course SLO: Students will be able to								
reconstruct the yield grade equation from base numbers to numerical terms.		R			R			
measure a beef ribeye within 2 tenths of an inch.		R			R			
calculate the weight and ribeye adjustment for the yield grade equation.		R			R			
compare and contrast USDA Yield Grade 1 with a USDA Yield Grade 5.		R			R			
evaluate the difference between fat thicknesses in beef carcasses.		R			R			
reconstruct the maturity and marbling relation chart to determine USDA Quality Grades.		R			R			
conduct a grading rail with a minimum of 250 points combined score.		R			R			
compare bone maturity between mature and youthful carcasses.		R			R			
rank a class of beef carcasses based on quality and yield grades.		R			R			
arrange notes to answer questions on beef quality classes.		R			R			
determine the cutability and quality limits for unacceptable beef.		R			R			
evaluate classes of pork carcasses, hams, and loins on quality attributes.		R			R			

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

determine final ranking of a lamb carcass class.		R			R			
analyze a class on note cards for written questions.		R			R			
rank a class to 90% accuracy.		R			R			
compare the PYG of the USDA Yield Grading system to tenths of inches.		R			R			
determine the difference in 1 square inch of ribeye in beef, pork and lamb.		R			R			
organize note cards for efficiency studying and review of notes.		R			R			
arrange a class with a learning topic for students with questions.		R			R			
defend a placing of a class in a contest.		R			R			
calculate the US grading scheme for pork carcasses.		R			R			
calculate percent muscle on a pork carcass.		R			R			
differentiate between PSE, RFN and DFD pork.		R			R			
relate the value of placing beef carcasses using a grid pricing system.		R			R			
list and differentiate between various cut locations in beef: ribeye, lower rib, round, inside round, sirloin, loin, rib, chuck, brisket, cod/udder, and KPH.		R			R			
list and differentiate between various cut locations of a pork carcass: loineye, lower rib, ham, sirloin, loin, center loin, first rib, last rib, last lumbar, collar, clear plate, belly pocket, navel edge, sternum, Boston and picnic shoulder and exposed lumbar lean.		R			R			

list and differentiate between various cuts/regions on a lamb carcass: leg, sirloin, dock, rack, loin, shoulder, crotch, kidney, pelvic, flank, cod/udder, stifle joint, breast, neck, break joints, spool joins, primary and secondary flanks.		R			R			
describe the basic quality factors for beef, pork and lamb.		R			R			
design an effective method for taking notes on questions classes.		R			R			
discriminate between acceptable and unacceptable quality and cutability.		R			R			

ANSI 207: Principles of Meat Science	*Curriculum Map*							
Program Outcomes	demonstrate knowledge of the importance to food safety to human well-being.	describe the role that food companies have in making efficient and safe food products.	extrapolate the role of HACCP and other food safety programs to the safety of food.	explain the role of sanitation in regards to food safety.	differentiate the differences between inspection and grading of meat products.	describe desirable and undesirable traits of common cleaners and sanitizers.	explain the impact of other interventions, including hurdle methods, in food safety.	discuss the importance of intrinsic factors in foods that affect food safety characteristics.
Course SLO: Students will be able to								
explain and analyze the structure and composition of muscle and associated tissues.		IR			IR	IRMA		
outline and diagram the growth and development of carcass tissues.		IR			IR	IRMA		
explain and illustrate the mechanism of muscle contraction and relaxation.		IR			IR	IRMA		
discuss the conversion of muscle to meat.		IR			IR	IRMA		
explain the development of meat quality postmortem.		IR			IR	IRMA		
list and discuss the properties of fresh meat.		IR			IR	IRMA		
define the principles of meat processing.		IR			IR	IRMA		
examine the effects and prevention of microorganisms in meat products.	IR	IR	IR	IR	IR	IRMA	IR	IR
discuss deterioration and contamination of meat products.	IR	IR	IR	IR	IR	IRMA	IR	IR
list and discuss proper storage and preservation of meat products.		IR			IR	IRMA		
explain the role of meat merchandizing.		IR			IR	IRMA		
discuss meat in the foodservice setting.		IR			IR	IRMA		
define the factors that contribute the palability of meat.		IR			IR	IRMA		
list and describe the proper cookery of meat products.	IR	IR			IR	IRMA		

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

examine the nutritional value of meat products.		IR			IR	IRMA		
compare and contrast meat inspection and meat grading.		IR			MA	IRMA		
analyze meat products through evaluation.		IR			IR	IRMA		
discuss the role of by-products in the meat industry.		IR			IR	IRMA		

ANSI 209: Food Sanitation Management	*Curriculum Map*							
Program Outcomes	**demonstrate knowledge of the importance to food safety to human well-being.**	**describe the role that food companies have in making efficient and safe food products.**	**extrapolate the role of HACCP and other food safety programs to the safety of food.**	**explain the role of sanitation in regards to food safety.**	**differentiate the differences between inspection and grading of meat products.**	**describe desirable and undesirable traits of common cleaners and sanitizers.**	**explain the impact of other interventions, including hurdle methods, in food safety.**	**discuss the importance of intrinsic factors in foods that affect food safety characteristics.**
Course SLO: Students will be able to								
define and describe various types of foodborne illness.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
understand concepts to prevent foodborne illness outbreaks	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
list and describe various practices to ensure food safety.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
describe and define the term pathogen.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
list the disease, symptoms, onset, duration, illness and other specifics about viruses, bacteria, parasites, fungi, biological toxins, and emerging pathogens in foods.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
compare and contrast the varying chemical, biological and physical contaminants in foods.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
list and describe various food handling techniques for safety and note the importance of good persona hygiene.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
extrapolate on the topics of the flow of food from preventing cross-contamination, general storage guidelines, preparing food (thawing, cooking requirement temperatures, cooling and reheating), to food service.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**
define various prerequisite food safety programs including HACCP.	**RMA**	**RMA**	**RMA**	**RMA**		**RMA**	**RMA**	**RMA**

Mapping	
I	**Introduced**
R	**Reinforced**
M	**Mastered**
A	**Assessed/Artifact**

design a sanitation regime for a food service facility in regards to cleaning, sanitizing as well as equipment standards and installation/maintenance of equipment and facilities.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
compare, contrast and define the differences between cleaning and sanitizing and note varying tools for each.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
describe and develop an integrated pest management system with treatment, control measures, and identification of pests and procedures for using and storing chemicals.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
define the objectives of a food service inspection program as well as the governmental regulatory system for food.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
briefly describe the FDA Food Code; how and why it was established and what it does for the industry.	RMA	RMA	RMA	RMA		RMA	RMA	RMA

ANSI 212: Food Safety	*Curriculum Map*							
Program Outcomes	demonstrate knowledge of the importance to food safety to human well-being.	describe the role that food companies have in making efficient and safe food products.	extrapolate the role of HACCP and other food safety programs to the safety of food.	explain the role of sanitation in regards to food safety.	differentiate the differences between inspection and grading of meat products.	describe desirable and undesirable traits of common cleaners and sanitizers.	explain the impact of other interventions, including hurdle methods, in food safety.	discuss the importance of intrinsic factors in foods that affect food safety characteristics.
Course SLO: Students will be able to								
understand the importance of food safety from an industry and consumer point of view.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
understand the current governmental regulations of food.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
understand the concepts of: Good Manufacturing Practices (GMPs), Sanitation Standard Operating Procedures (SSOPs), Standard Operating Procedures (SOPs) and Hazard Analysis Critical Control Points (HACCP).	RMA	RMA	RMA	RMA		RMA	RMA	RMA
describe the key concepts in an effective sanitation program.	RMA	RMA	RMA	RMA		RMA	RMA	RMA
understand the significance of recalls to the food industry.	RMA	RMA	RMA	RMA		RMA	RMA	RMA

Mapping	
I	Introduced
R	Reinforced
M	Mastered
A	Assessed/Artifact

ANSI 2701 to 2706: Food Science Internship	*Curriculum Map*							
Program Outcomes	**demonstrate knowledge of the importance to food safety to human well-being.**	**describe the role that food companies have in making efficient and safe food products.**	**extrapolate the role of HACCP and other food safety programs to the safety of food.**	**explain the role of sanitation in regards to food safety.**	**differentiate the differences between inspection and grading of meat products.**	**describe desirable and undesirable traits of common cleaners and sanitizers.**	**explain the impact of other interventions, including hurdle methods, in food safety.**	**discuss the importance of intrinsic factors in foods that affect food safety characteristics.**
Course SLO: Students will be able to								
display personal skills that will relate to job preparedness.	**IRMA**		**IRMA**				**IRMA**	
develop and increase interpersonal skills within the food industry by addressing responsibility, working as a team, leadership and negotiating skills.	**IRMA**		**IRMA**				**IRMA**	
enhance problem solving skills by learning to identify problems and applying learned concepts for solutions.	**IRMA**		**IRMA**				**IRMA**	
increase communication skills by learning to follow directions, writing clearly on documentation forms, and giving accurate details of events performed.	**IRMA**		**IRMA**				**IRMA**	
use technology and equipment available in the course as well as in the food position including safety rules, operation of equipment and environmental regulations.	**IRMA**		**IRMA**				**IRMA**	

Mapping	
I	**Introduced**
R	**Reinforced**
M	**Mastered**
A	**Assessed/Artifact**