AS

AAS and Certificate C

Certificate B

Certificate A

Crop Production Technology		Course to Program Map						
Program Outcomes:Upon completion of the program, graduates will be able to...	Institutional Skills	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Courses								
AGRI 100 Agriculture in our Society		I	IR	I	I	I	IR	IR
AGRO 101 Crops and Crops Lab		IR	IR	IR	IR	IR	IR	IRM
AGRO 103 Soils and Soils Lab		IR	IR	IR	IRM	IRM	IR	IR
AGRO 110 Weed Science		IRM	IR	IRM	IRM	IRM	IR	IRM
AGRO 111 Technology in Agriculture		IR	I	RM	I	IR	I	IR
AGRO 202 Soil Fertility		RM	IR	IR	RM	RM	IRM	RM
AGRO 112 Agronomic Crop Diseases		IRM	R	IR	RM	RM	IR	R
AGRO 204 Crop Physiology		RM	I	R	RM	R	R	IR
AGRO 205 Crop Production and Recommendation		M	RM	RM	M	RM	IRM	M
AGRO 113 Agronomic Crop Insects		IRM	IRM	IR	IR	R	IRM	RM
AGRO 203 Soil and Water Management		RM	RM	IR	RM	RM	IR	IRM
AGRO 102 Range Management		IR	I	IR	RM	IRM	IRM	R
AGEC 102 Farm Management and Accounting		IRM	IR	IR	IRM	IRM	I	IRM
AGEC 100 Agriculture Economics		IR	IR	I	RM	IRM	IR	IRM
AGEC 103 Agriculture Marketing and Futures		IR	IR	IR	IRM	IR	IR	IRM

AGRI 100 Agriculture in Our Society	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
discover college planning.		**I**					**I**
observe industry challenges and opportunities.	**I**	**I**	**I**	**I**	**I**	**IR**	**IR**
prepare career orientation research and exploration.	**I**	**I**	**I**	**I**	**I**	**I**	**I**
structure career development skills.	**I**	**IR**	**I**	**I**	**I**	**I**	**I**

AGRO 101 Crops	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
visualize development of agriculture.	I	I	IR	IR	IR	IR	IRM
identify crop terminology	I	I	I	IR	I	I	
examine agro ecology.	I	I	I	IR	I	IR	
identify crop production systems	I	I	IR	IR	I	IR	
classify soil types.	I	I		IR	I	I	
examine seeds and seeding	IR	I		IR	IR	I	
analyze crop roots.	IR	I		IR	IR	I	I
classify crop stems and leaves.	I	I		IR	IR	IR	I
discover photosynthesis and respiration.	I	I	IR	IR	IR	I	
classify flowering and reproduction	I	I		IR	IR	I	
evaluate crop improvement	IR	I	IR	IR	IR	IR	IR
identify diseases, pests and weeds.	IR	I	I	IR	IR	IR	I

AGRO 103 Soils & Soils Lab	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
distinguish the importance of soil.	I	I	IR	IRM	RM	I	IR
identify soil origin and development.	IR	I	I	IRM	I	I	I
describe soil classification and survey.	IR	IR	I	IR	I	IR	IR
define physical properties of soil.	IR	I		IR	I	I	I
appraise soil water	R	I		IR	IR	IR	IR
validate water conservation.	R	IR	IR	IRM	IR	I	IR
evaluate drainage and irrigation.	IR	I	RM	I	IR	IR	IR
classify life in the soil.	IR	I		IR	IRM	IR	I
distinguish organic matter.	IR			IRM	IRM	IR	I
translate soil fertility.	IR	IR		IR	IR	I	I
compute soil ph.	IR			IR	IR	I	I
explain plant nutrition.	IR	I	I	IRM	RM	I	IR
identify soil sampling.	IR		IR	IR	R	I	I
analyze fertilizers and amendments.	IR		IR	IR	R	I	I
survey tillage and cropping.	IR	I	IR	IR	RM	I	I
evaluate soil conservation.	IR	I	IR	IR	R	I	IR
establish career development skills	I	RM	I	I	I	I	IRM

AGRO 110 Weed Science	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
Describe pesticide application practices	**IR**		**IR**	**IR**	**I**		
Calculate pesticide application rates				**RM**	**I**	**IR**	**R**
Define and identify weed characteristics					**I**	**I**	**R**
Implement pesticide safety	**I**	**R**	**R**				**R**
Express knowledge of equipment calibration	**I**			**R**			
Scout for weeds	**R**	**RM**		**R**	**RM**	**R**	**M**
Describe new and emerging technology in weed management practices	**I**	**I**	**M**	**I**	**I**	**I**	**I**
Recognize how pesticides react in the environment	**I**	**I**		**R**	**R**	**I**	**RM**
Weigh cost of weed management against level of control of pest	**RM**		**I**	**M**	**RM**	**IRM**	**RM**
Describe herbicide modes of action	**RM**		**IR**	**R**	**RM**		**R**
Create an integrated weed management plan	**RM**	**I**	**R**	**RM**	**RM**	**RM**	**RM**
List Kansas noxious weeds and how they are classified	**I**		**I**	**I**	**I**	**I**	**I**
Describe weed control practices	**R**	**I**	**IR**	**I**	**R**	**I**	**I**

AGRO 111 Technology in Agriculture	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
Explain crop genetic technology	**R**		**RM**	**I**	**IR**	**I**	**I**
Describe agriculture drone technology	**R**		**R**	**I**	**I**	**IR**	**I**
Analyze satellite imagery	**IR**		**R**		**I**	**I**	**I**
Compare the latest technology in agriculture equipment	**R**	**IR**	**RM**				**I**
Describe GIS and how it assists agriculture practices	**R**		**R**	**I**	**I**	**I**	**I**
Articulate how AI will influence farming in the future	**R**	**IR**	**R**				**IR**
Outline basic agriculture guidance systems	**I**	**I**	**R**	**I**	**IR**		**I**
Describe precision agriculture equipment	**R**		**R**		**IR**	**I**	
Define how technology increases efficiency	**I**	**R**	**RM**	**I**	**RM**	**I**	**IR**

AGRO 202 Soil Fertility	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
Calculate fertilizer recommendations	**M**	**R**		**RM**	**RM**	**IRM**	**R**
Describe basic soil classification and principles	**M**	**I**		**R**		**I**	
Capture soil samples	**R**		**IR**	**R**		**R**	**R**
Interpret soil sample results	**M**	**R**		**RM**	**RM**	**IR**	**RM**
Describe crop inputs needed for proper plant growth	**M**	**R**	**R**	**RM**	**M**	**IR**	**R**
Explain soil nutrient management practices	**M**	**I**	**R**	**M**	**RM**	**IR**	**R**
Defend how soil types effect nutrient availability	**R**	**I**		**M**	**RM**	**I**	**R**
Diagnose nutrient deficiency in a crop	**R**		**I**	**M**	**R**	**IR**	**R**
Attain plant tissue samples	**M**		**R**			**I**	
Outline how tissue samples are used in crop production	**M**	**R**	**R**	**R**	**R**	**I**	
Make fertilizer and pH recommendations	**M**	**RM**	**R**	**M**	**RM**	**RM**	**RM**
Classify different types of fertilizer and their uses	**M**		**R**	**R**	**RM**	**R**	**R**
Describe how different crops impact soil nutrients	**M**	**I**		**R**	**R**	**R**	**R**
Describe how weather effects nutrient availability	**M**	**I**	**I**	**R**	**RM**	**R**	**R**

AGRO 112 Agronomic Crop Diseases	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
Name the methods in which crop health is compromised	**R**		**I**	**I**		**IR**	
Assess and diagnose plant sickness	**RM**		**I**	**RM**	**R**	**IR**	**RM**
Name common crop diseases and disorders	**RM**		**I**	**R**		**IR**	
List the causes of crop disease	**RM**		**I**	**RM**		**IR**	**R**
Define treatment and prevention methods for crop disease	**IRM**	**R**	**R**	**RM**	**RM**	**IR**	**R**
Define how disease can be confirmed	**R**		**R**	**R**	**R**	**IR**	**R**
Scout a field for disease and cause of disease	**R**	**R**	**I**	**R**	**R**	**IR**	**R**
Identify disease symptoms for various crops	**IRM**	**R**		**R**		**IR**	
Describe common diseases in common crops	**RM**	**R**		**RM**		**IR**	
Define at what stages crops are most susceptible to different diseases	**IRM**	**R**		**RM**		**IR**	

AGRO 204 Crop Physiology	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
Describe basic agronomy principles	R		R	R	R	R	I
List crop inputs necessary for proper plant growth	R	I	R	R	RM	R	I
Detail photosynthesis and respiration	RM	I		RM	R		
List plant growth stages	RM	I		RM	R		
Explain crop reproduction	RM	I		RM	R		
Describe the process of germination	RM	I		RM	R		
Describe the process of seed engineering and production	R	I	R	R		IR	
Label parts of common agronomic crops	M	I		RM			
Recognize how nutrients effect different processes within the plant	R	I		R	R	R	I
Explain how crops utilize water for plant growth	RM	I		RM	R	R	I
Explain the importance of knowing the growth stage of a crop	M	I		RM	R		R

AGRO 113 Agronomic Crop Insects	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
Scout for insects	IRM	R		I	I	IR	R
Identify insects	RM			I	I	I	
Construct an integrated pest management plan	RM	RM	R	RM	M	IRM	M
List control methods for insects	RM		R	I	R	IR	
Understand the importance of insect monitoring	RM		I	I	RM	IR	R
Recall insecticide safety and use	M	I	I		R	R	R
Match mouth parts and wing structure to common insects	RM					I	
Contrast different methods of insect control	M		R	R	R	IR	RM
Use economic values and critical thinking to calculate thresholds	R	I		M	RM	RM	RM
Count insects properly for accurate decision making	RM			RM	R	RM	I
Describe the impact insects have on crops	R	R	I	IR	R	IR	R
Explain how pesticides react in the environment	R	R	R	I			RM
Explain how to mix chemical and log applications	RM	RM	I	I			

AGRO 205 Crop Production and Recommendation	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
Describe pesticide application practices	M		RM	R	R		RM
Describe basic agronomy principles	M			M	R	I	
Calculate pesticide and fertilizer rates	M	R		M	M		M
Identify weeds, insects and disease in crops	M			M			
Apply pesticide safety to crop consulting practices	M		R	M	R	I	M
Describe how soil type effects performance of crop	M	R		M	M	R	M
Calculate crop emergence (stand counts)	M	R		M	M	RM	M
Work in a crop consulting environment	M	M		M	M	IRM	M
Capture soil samples	M				R	IR	M
Define the day to day work of a crop consultant	M	RM	R		R	IR	M
Describe the basics of how a plant grows	M			M		R	
Explain how weeds grow and reproduce	M			M		R	
Scout for weeds, insects, and disease	M			M	R	R	
Make seed variety recommendations based off producer needs and environment	M	R	M		M	R	M
Articulate how soil nutrient management effects crop performance	M	M	R	M	M	R	M
Diagnose crop deficiency	M			M		R	M
Make fertilizer and pH recommendations	M	M		M	M	R	M
Make pesticide application recommendations	M	M	M	M	M		M
Moniter soil moisture	M		R	R	R	R	
Explain how pesticides react in the environment	M	RM	R	M	R		M
Use economic values and critical thinking to calculate thresholds	M	M		M	M	M	M
Describe technology affecting crop production	M	M	M	M	R	R	
Explain water management	M	M	R		R		M
Write clear and concise crop recommendations	M	M			M	RM	M
Read a field map	M		R			I	
Describe the importance of showing up to work	M	IRM					M
Explain how to mix chemical and log applications	M	RM		M	R		

AGRO 203 Soil and Water Management	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
Describe soil conservation practices	**RM**	**R**	**R**	**R**	**M**	**IR**	**IRM**
Plan land use to avoid soil erosion	**RM**	**R**	**R**		**M**	**IR**	**RM**
Define the causes of soil erosion	**RM**		**I**	**RM**		**IR**	**M**
Define the causes of water pollution	**RM**		**I**	**RM**		**IR**	**M**
Explain water usage in agriculture	**RM**	**R**	**R**		**M**	**IR**	**R**
Elaborate on environmental issues caused by poor soil and water management	**RM**	**RM**	**R**	**RM**	**RM**	**IR**	**R**
Evaluate soil health	**RM**			**RM**	**M**	**R**	**R**
Explore how the dust bowl impacted current farming practices		**R**			**RM**	**IR**	**IRM**
Evaluate the impact crop rotation has on soil health and water	**IR**			**R**	**RM**	**IR**	**R**
Evaluate the impact tillage has on soil health	**IRM**			**R**	**RM**	**IR**	**R**
Make a cropping rotation/management plan that considers soil and water management	**RM**	**RM**	**IR**	**IRM**	**RM**	**RM**	**RM**

AGRO 102 Range Management	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
discover range understanding and managements.	**IR**		**IR**	**RM**	**RM**	**I**	**R**
examine description of rangeland types.	**IR**		**IR**	**RM**	**I**		
describe range plant physiology.	**I**			**RM**	**I**		
examine range ecology.	**I**			**RM**	**I**		
explain range inventory and monitoring.	**IR**	**I**	**IR**	**RM**	**RM**		**R**
compose stocking rates	**I**		**IR**	**RM**	**RM**	**RM**	**R**
survey selection of grazing methods.	**I**		**IR**	**R**	**R**	**RM**	**R**
determine range wildlife management.	**I**			**R**	**R**	**IR**	**R**
establish career development skills.		**I**		**I**	**I**	**I**	**R**

AGEC 100 Agriculture Economics	*Curriculum Mapping*						
Program Outcomes	Describe and implement the practices, tools, and skills used to produce an agricultural crop.	Perform in an agricultural work environment and use oral and written communication effectively.	Apply existing and emerging knowledge and technologies in crop production.	Apply scientific principles and quantitative skills to crop production practices and evaluation.	Prioritize crop needs while considering plant health, profitability, and availability of time and resources.	Analyze plant conditions and crop performance using industry standards and thresholds	Implement problem solving and critical thinking competence in crop production related affairs.
Course SLO: Students will be able to...							
define agricultural economics.	I	IR	I	IR	IRM		RM
describe market price determination.	IR	IR	I	RM	RM	I	IRM
recognize financial markets.	IR	I		IR	IRM		R
identify money and financial intermediaries.	IR	I	I	IR	IRM		I
define monetary policy.	I	IR	I	RM	IR		R
distinguish the circular flow of income.	I	I	I	RM	IRM		RM
research agricultural policy	I	IR	I	R	IR		IRM
recognize the firm as a production unit	I		I	R	IR		RM
examine costs and optimal output levels	IR		I	RM	IRM	IR	IRM
discover career and development skills.	I	IR	I	IR	I		IRM

AGEC 102 Farm Management & Accounting	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
describe competencies in management.	**IRM**	**IR**	**I**	**IR**	**IR**	**I**	**RM**
calculate depreciation	**IR**			**IRM**	**IR**		**I**
calculate balance sheet and income statement	**IRM**			**IRM**	**IR**		**I**
examine forms of budgeting.	**IR**	**I**	**IR**	**IRM**	**IRM**		**IRM**
tabulate performance and organization	**IRM**		**IR**	**IRM**	**IR**	**I**	**IRM**
examine capital and the use of credit.	**IR**	**I**	**I**	**IRM**	**IRM**		**IRM**
administer human resource management.	**IR**	**IR**	**I**	**IR**	**IR**		**IRM**
examine machinery management.	**IR**	**I**	**IR**	**IRM**	**IRM**		**IRM**

AGEC 103 Ag Marketing and Futures	*Curriculum Mapping*						
Program Outcomes	**Describe and implement the practices, tools, and skills used to produce an agricultural crop.**	**Perform in an agricultural work environment and use oral and written communication effectively.**	**Apply existing and emerging knowledge and technologies in crop production.**	**Apply scientific principles and quantitative skills to crop production practices and evaluation.**	**Prioritize crop needs while considering plant health, profitability, and availability of time and resources.**	**Analyze plant conditions and crop performance using industry standards and thresholds**	**Implement problem solving and critical thinking competence in crop production related affairs.**
Course SLO: Students will be able to...							
describe the market.	**I**	**IR**	**IR**	**I**	**I**	**I**	**IRM**
observe futures and options mechanics.	**IR**	**I**	**I**	**IR**	**I**	**IR**	**IRM**
recognize fundamental and technical analysis.	**I**	**I**	**I**	**IR**	**I**	**I**	**IRM**
discover psychology of the markets.	**IR**	**I**	**I**	**I**	**I**	**I**	**IRM**
distinguish price risk management strategies	**IR**	**I**	**IR**	**IRM**	**IR**	**IR**	**IRM**
discover career development skills.	**I**	**IR**	**I**	**I**	**I**	**I**	**IR**