

AGRICULTURAL ENGINEERING CURRICULUM GUIDE CONTINUED

The Agricultural Engineering concentration has three suggested emphasis areas:

Machine Systems			Processing Systems			Natural Resources and Environmental Systems			
Select electives with emphasis on machine, power, structural and electrical/electronic systems to solve problems involving engineering aspects of food, feed and fiber production.			Select electives with emphasis on combining engineering, biological, and physical sciences in the application of engineering principles to handling and processing of biomaterials for food and non-food products.			Select electives with emphasis on areas that contribute to solving problems in environmental engineering, natural resources management, hydrology, irrigation, drainage, watershed management, and waste management.			
Course #	Course Name	Cr.	Course #	Course Name	Cr.	Course #	Course Name	Cr.	
ABEN Electives	ABEN 358	Electric Energy App in Ag	3	ABEN 358	Electric Energy App in Ag	3	ABEN 358	Electric Energy App in Ag	3
	ABEN 452	Bioenvironmental Systems Design	3	ABEN 444	Transport Processes	3	ABEN 444	Transport Processes	3
	ABEN 458	Process Engr for Food, Biofuels/products	3	ABEN 450	Bioprocess Engineering	3	ABEN 452	Bioenvironmental Systems Design	3
	ABEN 464	Resource Conservation & Irrigation	4	ABEN 452	Bioenvironmental Systems Design	3	ABEN 458	Process Engr for Food, Biofuels/prod.	3
	ABEN 473	Agricultural Power	3	ABEN 456	Biobased Energy	3	ABEN 464	Resource Conservation & Irrigation	4
	ABEN 478	Machinery Analysis & Design	3	ABEN 458	Process Engr for Food, Biofuels/products	3	ABEN 484	Drainage & Wetland Engineering	3
	ABEN 479	Fluid Power Systems Design	3						
Chemical/Biological/Environmental Science Electives	ASM/SOIL/NRM 264	Natural Resource Mgmt Syst.	3	ASM/SOIL/NRM 264	Natural Resource Mgmt Syst.	3	ASM/SOIL/NRM 264	Natural Resource Mgmt Syst.	3
	ANSC 220	Livestock Production	3	BIOL 111/L	Concepts of Biology/Lab	3/1	BIOL 111/L	Concepts of Biology/Lab	3/1
	ENT 210	Insects, Humans & the Environment	3	BIOL 124/L	Environmental Science/Lab	3/1	BIOL 124/L	Environmental Science/Lab	3/1
	NRM 322	Environmental Law & Policy	3	BIOL 150/L	General Biology I/Lab	3/1	BIOL 150/L	General Biology I/Lab	3/1
	PLSC 110	World Food Crops	3	BIOL 151/L	General Biology II/Lab	3/1	BIOL 151/L	General Biology II/Lab	3/1
	PLSC 215	Weed Identification	1	CFS 210	Introduction to Food Science & Tech	2	CHEM 121L	General Chemistry I Lab	3/1
	PLSC 225	Principles of Crop Production	3	CFS 370	Food Processing I	3	CHEM 122L	General Chemistry II Lab	3/1
	PLSC 320	Principles of Forage Production	3	CFS 450	Cereal Technology	3	CHEM 240	Survey of Organic Chemistry	3
	PLSC 323	Principles of Weed Science	2	CHEM 121L	General Chemistry I Lab	1	ENT 210	Insects, Humans & the Environ.	3
	PLSC 335	Seed Technology & Production	3	CHEM 122L	General Chemistry II Lab	1	NRM 322	Environmental Law & Policy	3/1
	SOIL 210	Intoduction to Soil Science	3	CHEM 240	Survey of Organic Chemistry	3	MICR 202/L	Introduction Microbiology/Lab	3/1
	SOIL 217	Introduction to Meterology & Climatology	3	MICR 202/L	Introduction Microbiology/Lab	3/1	MICR 350/L	General Microbiology/Lab	3/1
	SOIL 410	Soils and Land Use	3	MICR 350/L	General Microbiology/Lab	3/1	PLSC 110	World Food Crops	3
	SOIL 480	Soils and Pollution	3	NRM 322	Environmental Law & Policy	3	PLSC 215	Weed Indentification	1
				PLSC 110	World Food Crops	3	PLSC 225	Principles of Crop Production	3
				PLSC 215	Weed Identification	1	PLSC 315	Genetics	3
				PLSC 225	Principles of Crop Production	3	PLSC 320	Principles of Forage Production	3
				PLSC 315	Genetics	3	PLSC 323	Principles of Weed Science	3
				RNG 225	Natural Resource & Agro-Ecosystems	3	PLSC 335	Seed Technology & Production	2
				SOIL 210	Intoduction to Soil Science	3	RNG 225	Nat. Resource & Agro-Ecosystems	3
			SOIL 410	Soils and Land Use	3	SOIL 210	Intoduction to Soil Science	3	
			SOIL 480	Soils and Pollution	3	SOIL 217	Intro to Meterology & Climatology	3	
						SOIL 410	Soils and Land Use	3	
						SOIL 480	Soils and Pollution	3	
Technical Electives can be additional courses from ABEN, Engineering, Chem/Bio/Enviro, or Computer Electives.									
<i>ABEN 348 - Ag Tech Expo (1 add'l cr.) may be used as a Technical Elective. ABEN 496 - Field Exp./Internship, 1 cr., may be used as an ABEN Elective or as a Technical Elective. A maximum of two credits of ABEN 496 FE/Internship may be counted towards degree requirements.</i>									
Technical Electives	ASM 323	Post Harvest Technology	3	ASM 323	Post Harvest Technology	3	CE 204	Surveying	4
	ASM 373/4	Tractors & Power Units/Lab	3/1	CE 310	Fluid Mechanics Lab	1	CE 310	Fluid Mechanics Lab	1
	ASM 378	Machinery Principles & Mgmt	3	CE 343	Structural Engr. & Analysis	4	CE 343	Structural Engr. & Analysis	4
	ASM 429	Hydraulic Power Principles	3	CE 404	Reinforced Concrete	3	CE 370/1	Intro to Environmental Engr./Lab	3/1
	CE 310	Fluid Mechanics Lab	1	CE 472	Solid Waste Management	3	CE 404	Reinforced Concrete	3
	CE 343	Structural Engr. & Analysis	4	IME 330	Manufacturing Processes	3	CE 408	Water Resources & Supply	3
	ECE 275	Digital Design	4	IME 430	Process Engineering	3	CE 410	Water & Wastewater Engr.	3
	ECE 301	Electrical Engineering I	3	IME 456	Program & Project Management	3	CE 421	Open Channel Flow	3
	ECE 303	Electrical Engineering II	3	IME 461	Quality Assurance & Control	3-4	CE 451	Advanced Surveying	2
	ECE 376	Embedded Systems	4	ME 331	Materials Science & Engineering	4	CE 472	Solid Waste Management	3
	IME 330	Manufacturing Processes	3	ME 353	Thermodynamics II	3	CE 473	Air Pollution	3
	IME 335	Welding Technology	3	ME 454	Heat and Mass Transfer	3	CE 477	Applied Hydrology	3
	IME 380	CAD/CAM for Manufacturing	3	ME 473	Engineering with Polymeric Materials	3	CE 478	Water Quality Mgmt	3
	IME 430	Process Engineering	3	ME 474	Mechanics of Composite Materials	3	CE 479	Adv. Water & Wastewater Engr.	3
	IME 431	Production Engineering	3	ME 475	Automatic Controls	3	CE 483	Contracts and Specifications	3
	IME 450	Systems Engineering & Mgmt	3	STAT 461	Applied Rgression Models	3	GEOG 105	Fundamentals of GIS	3
	IME 455	Mgmt of People Systems	2	STAT 462	Intro to Experiemental Design	3	GEOG 455	Intro. Geographic Info Systems	4
	IME 456	Program & Project Management	3				GEOG 456	Adv. Geographic Info Systems	3
	IME 461	Quality Assurance & Control	3-4				IME 456	Program & Project Management	3
	ME 331	Materials Science & Engineering	4				ME 475	Automatic Controls	3
	ME 341	Mechanics of Machinery	3				RNG 326	Modeling of Range & Agro-Eco	3
	ME 353	Thermodynamics II	3				STAT 461	Applied Rgression Models	3
	ME 421	Theory of Vibrations	3				STAT 462	Intro to Experiemental Design	3
	ME 423	Intermediate Mechanics of Materials	3						
	ME 442	Machine Design I	3						
	ME 454	Heat and Mass Transfer	3						
	ME 471	Experimental Stress Analysis	3						
	ME 473	Engineering with Polymeric Materials	3						
	ME 474	Mechanics of Composite Materials	3						
	ME 475	Automatic Controls	3						
ME 487	Internal Combustion Engines	3							
STAT 461	Applied Regression Models	3							
STAT 462	Intro to Experiemental Design	3							

Notes	

Projected ABEN Course Offerings						
Semester	Required		Elective		Graduate	
Fall	110-3	486-2	358-3	473-3	658-3	679-3
ODD	255-3		458-3	479-3	673-3	765-3
Years					790-1	
Spring	263-3	482-3	456-3		644-3	682-3
EVEN	377-3	487-2	444-3		656-3	758-3
Years		391-1	478-3		678-3	
Fall	110-3	486-2	358-3	473-3	652-3	684-3
EVEN	255-3		452-3	479-3	673-3	747-3
Years			484-3		679-3	790-1
Spring	263-3	482-3	444-3	464-4	644-3	682-3
ODD	377-3	487-2	478-3		664-4	750-3
Years		391-1			678-3	758-3