

AGRICULTURAL ENGINEERING CURRICULUM
AGRICULTURAL POWER AND MACHINERY ENGINEERING OPTION
(2011-2012 CATALOG)

A total of 127.5 credits required for graduation

I.	Communications (9.5 credits)		
	3 cr.	Engl 150 (FSSS)	Critical Thinking and Communication
	3 cr.	Engl 250 (FSSS)	Written, Oral, Visual, and Electronic Composition
	3 cr.	Engl 309 (FS)	Report and Proposal Writing
	or 3 cr.	Engl 314 (FSSS)	Technical Communication
	or 3 cr.	Sp Cm 212 (FSSS)	Fundamentals of Public Speaking
	or 3 cr.	Ag Eds 311 (FS)	Presentation and Sales Strategies for Ag Audiences
	0.5 cr.	Lib 160 (FSSS)	Library Instruction
II.	Mathematical Sciences (14 credits)		
	4 cr.	Math 165 (FSSS)	Calculus I
	4 cr.	Math 166 (FSSS)	Calculus II
	3 cr.	Math 266 (FSSS)	Elementary Differential Equations
	3 cr.	Stat 305 (FSSS)	Engineering Statistics
III.	Physical Sciences (15 credits)		
	4 cr.	Chem 167 (FS)	General Chemistry for Engineering Students
	1 cr.	Chem 167L (FS)	Laboratory in General Chemistry for Engineering
	5 cr.	Phys 221 (FSSS)	Introduction to Classical Physics I
	5 cr.	Phys 222 (FSSS)	Introduction to Classical Physics II
IV.	Biological and/or Natural Resource Sciences (6 credits)		
	3 cr.	Agron 154 (FS)	Fundamentals of Soil Science
	3 cr.	Biol 211(FS)	Principles of Biology I
V.	Social Sciences and Humanities (12 credits)		
	3 cr.	U. S. Diversity Course (Select from University-approved list)	
	3 cr.	International Perspectives Course (Select from University-approved list)	
	6 cr.	Social Science and Humanities Electives (Select from CALS-approved list)	
VI.	Engineering (6 credits)		
	R cr.	Engr 101 (FS)	Engineering Orientation
	3 cr.	Engr 160 (FS)	Engineering Problems with Computer Applications Laboratory
	3 cr.	A E 170 (FS)	Engineering Graphics and Introductory Design
VII.	Agricultural Engineering (34 credits)		
	1 cr.	A E 110 (S)	Experiencing Agricultural and Biosystems Engineering
	1 cr.	A E 201 (FS)	Entrepreneurship and Internship Seminar
	3 cr.	A E 216 (F)	Fundamentals of Agricultural and Biological Engineering
	2 cr.	A E 218 (S)	Project Management and Design
	1 cr.	A E 271 (FS)	Engineering Applications of Parametric Solid Modeling
	or 1 cr.	A E 272 (FS)	Parametric Solid Models, Drawings, Assemblies using
Pro/ENGINEER			
	3 cr.	A E 316 (F)	Computer Applications and Systems Modeling
	3 cr.	A E 340 (F)	Functional Analysis and Design of Agricultural Field Machinery
	3 cr.	A E 342 (S)	Agricultural Tractor Power
	4 cr.	A E 363 (F)	Agri-Industrial Applications of Electric Power and Electronics
	3 cr.	A E 404 (F)	Instrumentation for Agricultural and Biological Engineering
	*2 cr.	A E 415 (FS)	Agricultural Engineering Design I
	*2 cr.	A E 416 (FS)	Agricultural Engineering Design II
	3 cr.	A E 413 (F)	Fluid Power Engineering
	3 cr.	A E 431 (F)	Design and Evaluation of Soil and Water Conservation Systems
	or 3 cr.	A E 469 (S)	Grain Processing and Handling
	or 3 cr.	A E 472 (Alt. S10)	Design of Environmental Modification Systems for Bio Products

or 3 cr. A E 478 (Alt. S11) Design of Agricultural Structures
 or 3 cr. BSE 480 (S) Engineering Analysis of Biological Systems

VIII. Mechanical Engineering (10 credits)

4 cr. M E 324 (FS) Manufacturing Engineering
 3 cr. M E 325 (FS) Machine Design
 3 cr. M E 330 (FS) Thermodynamics

IX. Materials Engineering (3 credits)

3 cr. Mat E 273 (FSSS) Principles of Materials Science and Engineering

X. Engineering Mechanics (13 credits)

3 cr. E M 324 (FSSS) Mechanics of Materials
 1 cr. E M 327 (FSSS) Mechanics of Materials Laboratory
 3 cr. E M 345 (FSSS) Dynamics
 3 cr. E M 378 (FSSS) Mechanics of Fluids

XI. Technical Elective **(to be selected with adviser guidance) (5 credits)

3	AE 325	Biorenewable Systems Technology and Management
3	AE 388	Sustainable Engineering and International Development
3	BSE 380	Principles of Biological Systems Engineering
3	CE 360	Geotechnical Engineering
3	CE 372	Engineering Hydrology and Hydraulics
3	Con E 322	Construction Equipment and Heavy Construction Methods
3	Con E 380	Engineering Law
3	EM 350	Introduction to Nondestructive Evaluation Engineering
3	EM 362	Principles of Nondestructive Testing
1	EM 362L	Nondestructive Testing Laboratory
3	ME 335	Fluid Flow
3	IE 305	Engineering Economic Analysis
3	IE 312	Optimization
3	IE 361	Statistical Quality Assurance
3	AGRON 354	Soils and Plant Growth
1	AGRON 354L	Soils and Plant Growth Laboratory
3	AGRON 356	Site-Specific Crop and Soil Management
3	AGRON 405/505	Environmental Biophysics
3	AGRON 477/577	Soil Physics
3	TSM 310	Total Quality Improvement
3	TSM 333/433	Precision Farming Systems
3	TSM 340	Advanced Automated Manufacturing Processes
3	TSM 370	Occupational Safety
3	TSM 440	Cellular Lean Manufacturing Systems
3	TSM 465	Automation Systems
1. Any non-seminar/internship 300, 400 and 500 level AE/BSE course not required for P&M option		
2. Any non-seminar/internship 400 and 500 level Engineering course not required for P&M option		
3. Any non-seminar/internship 500 level TSM course		
4. Any non-seminar/internship 300 and 400 level Econ course		
5. Any non-seminar/internship 300 and 400 level Mgmt course		