

AGRICULTURAL ENGINEERING CURRICULUM
AGRICULTURAL POWER AND MACHINERY ENGINEERING OPTION
(2007-2009 CATALOG)

A total of 127.5 credits required for graduation

I. Communications (9.5 credits)

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|-----------|-----------------|--|
| 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)

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|-------|-----------------|-----------------------------------|
| 4 | Math 165 (FSSS) | Calculus I |
| 4 | 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)

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|-------|-----------------|---|
| 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)

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| 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)

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| 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 departmental-approved list). | |

VI. Engineering (6 credits)

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| R cr. | Engr 101 (FS) | Engineering Orientation |
| 3 cr. | Engr 160 (FS) | Engineering Problems with Computer Applications Laboratory |
| 3 cr. | AE 170 (FS) | Engineering Graphics and Introductory Design |

VII. Agricultural Engineering (34 credits)

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|-------|--------------|---|
| 1 cr. | A E 110 (S) | Experiencing Agricultural and Biosystems Engineering |
| 1 cr | A E 201 (S) | Entrepreneurship and Internship Seminar |
| 3 cr. | A E 316 (F) | Computer Applications and Systems Modeling |
| 3 cr. | A E 216 (S) | Fundamentals of Agricultural and Biological Engineering |
| 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 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.	AE 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. S)	Design of Environmental Modification Systems for Bio Products
or	3 cr.	A E 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 (2 credits)

2 cr.	Mat E 272 (FSSS)	Principles of Materials Science and Engineering
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X. Engineering Mechanics (13 credits)

3 cr.	E M 274 (FSSS)	Statics of Engineering
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

X. 2 cr. Free Elective

XII. Technical Elective ** (to be selected with adviser guidance) (6 credits)

3 cr.	A E 325 (F)	Biorenewable Systems Technology and Management
1-4 cr.	A E 490 (FSSS)	Independent Study – Any Area
3 cr.	A E 403/503 (F)	Modeling and Controls for Agricultural Systems
3 cr.	AE 530 (S)	Agricultural Water Quality Engineering
3 cr.	AE 533 (S)	Erosion and Sediment Transport
3 cr.	AE 478/578 (Alt. S)	Design of Agricultural Structures
3 cr.	A E 469/569 (F)	Grain Processing and Handling
3 cr.	Agron 405/505 (Alt S09)	Environmental Biophysics (Biometeorology)
3 cr.	Agron. 577 (S)	Soil Physics
3 cr.	C E 360 (FS)	Soil Engineering
3 cr.	Con E 380 (FS)	Engineering Law
4 cr.	Cpr E 210 (FS)	Introduction to Digital Design
4 cr.	Econ 451 (F)	Agricultural Law
3 cr.	E M 417 (F)	Experimental Mechanics

3 cr.	E M 425 (S)	Introduction to the Finite Element Method
3 cr.	E M 444 (F)	Mechanical Vibrations
3 cr.	I E 305 (FS)	Engineering Economic Analysis
3 cr.	I E 439 (S)	Industrial Automation
3 cr.	Mgmt 370 (FSSS)	Management of Organizations
3 cr.	M E 410 (S)	Mechanical Engineering Applications of Mechatronics
3 cr.	M E 411 (F)	Automatic Controls
3 cr.	M E 417 (S)	Advanced Machine Design I
4 cr.	M E 436 (FS)	Heat Transfer
3 cr.	M E 445 (F)	Internal Combustion Engines
*3 cr.	Engr 466 (FS)	Multidisciplinary Engineering Design (may be repeated and can replace AE 415 and AE 416)

** Any 300-/400- level AE/BSE course will be accepted.