AGRICULTURAL ENGINEERING CURRICULUM
ANIMAL PRODUCTION SYSTEMS ENGINEERING OPTION
(2015-2016 Catalog)

A total of 128 credits required for graduation

I. Communications (10 credits)
3 cr. Engl 150 (FSSS) Critical Thinking and Communication
3 cr. Engl 250 (FSSS) Written, Oral, Visual, and Electronic Composition
3 cr. Comm. Elect. Select one of the courses below:
   Engl 309 (FS) Report and Proposal Writing
   Engl 314 (FSSS) Technical Communication
   Sp Cm 212 (FSSS) Fundamentals of Public Speaking
   Ag Eds 311 (FS) Presentation and Sales Strategies for Ag Audiences
   Mkt 343 Personal Sales
1 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. Agricultural and Biological Sciences (6 credits)
3 cr. An. Sci/Agron. Elect. Select one of the courses below:
   Agron 206 (FS) Introduction to Meteorology
   AN S 223 (FS) Poultry Science
   AN S 225 (FS) Swine Science
   AN S 226 (FS) Beef Cattle Science
   AN S 229 (FS) Sheep Science
   AN S 235 (F) Dairy Cattle Science
3 cr. Biology Select one of the courses below:
   Biol 251 (S) Biological Processes in the Environment
   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 Engr 101 (FS) Engineering Orientation
3 cr. A B E 160 (FS) Engineering Problems with Computer Applications Lab
3 cr. A B E 170 (FS) Engineering Graphics and Introductory Design
VII. **Agricultural Engineering** (28 credits)

1 cr. A B E 110 (S) Experiencing Agricultural and Biological Engineering
1 cr. A B E 201 (FS) Entrepreneurship and Internship Seminar
3 cr. A B E 216 (F) Fundamentals of Agricultural and Biological Engineering
2 cr. A B E 218 (S) Project Management & Design in Ag & Biological Systems Engr
1 cr. Computer Graphics Select one of the courses below:
   - A B E 271 (FS) *Engineering Applications of Parametric Solid Modeling*
   - A B E 272 (FS) *Parametric Solid Models, Drawings, and Assemblies Using Pro/ENG*
   - A B E 273 (S) *CAD for Process Facilities and Land Use Planning (Preferred)*
3 cr. A B E 316 (F) Computer Applications and Systems Modeling
4 cr. A B E 404 (F) Instrumentation for Agricultural and Biological Engineering
3 cr. A B E 469 (S) Grain Processing and Handling
3 cr. A B E Elect Select one of the courses below:
   - A B E 431 (F) *Design and Evaluation of Soil and Water Conservation Systems*
   - A B E 430 (F) *Functional Analysis and Design of Agricultural Field Machinery*
   - A B E 480 (F) *Engineering Analysis of Biological Systems*
   - A B E 408 (F) *GIS and Natural resource Management*
2 cr. A B E 415 (FS) Agricultural Engineering Design I
2 cr. A B E 416 (FS) Agricultural Engineering Design II

VIII. **Mechanical Engineering** (7 credits)

3 cr. M E 231 (FS) Thermodynamics
4 cr. M E 436 (FSSS) Heat Transfer

IX. **Engineering Mechanics** (10 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 378 (FSSS) Mechanics of Fluids

X. **Animal Production Systems Focus** (20 credits)

3 cr. A B E 472 Design of Environmental Systems for Agricultural Structures
   *(S-even sem. only)*
3 cr. A B E 478 Design of Agricultural Structures
   *(S-odd sem. only)*
2 cr. A B E 475 (FS) APSE Practicum
3 cr. C E 332 (FS) Structural Analysis I
3 cr. C E 333 (FS) Structural Steel Design I
3 cr. C E 334 (FSSS) Reinforced Concrete Design I
3 cr. Technical Elective* OPEN/FREE

* highly recommend one of: ME 370, ME 410, ME 441, A B E 424 (modules A and B+E) to strengthen non-structural interest or one of: CE 360, CE 436, CE 460 to strengthen structural interest.

*Please check the current catalog and Schedule of Classes for most recent offerings*