AGRICULTURAL SYSTEMS & INDUSTRIAL TECHNOLOGY CURRICULUM
Machine Systems
(2007-2009 Catalog)

128.5 credits required for graduation

Interpersonal and Public Communication Skills (12.5 credits)
6 Engl 150 (F.S.SS) Critical Thinking and Communications and
   Engl 250 (F.S.SS) Written, Oral, Visual, and Electronic Composition
3 Engl 302 (F.S.SS) Business Communication, or
   Engl 309 (F.S) Report and Proposal Writing, or
   Engl 314 (F.S.SS) Technical Communication
3 SpCm 212 (F.S.SS) Fundamentals of Public Speaking, or
   AgEdS 311 (F.S) Presentation and Sales Strategies for Agricultural Audiences
0.5 Lib 160 (F.S.SS) Library Instruction

Mathematical, Physical, and Life Sciences (29 credits)
3 Math 142 (F.S.SS) Trigonometry and Analytic and
4 Math 160 (F.S) Survey of Calculus; or
4 Math 165 (F.S.SS) Calculus I
4 Physics 111 (F.S.SS) General Physics and
4 Physics 112 (F.S.SS) General Physics
3 Stat 104 (F.S.SS) Introduction to Statistics
4 Chem 163 (F.S.SS) General Chemistry and
1 Chem 163L (F.S.SS) Laboratory in General Chemistry
6 Life Sciences See Departmental List

Departmental List for Life Science
Biology
3 BIOL 101 (F.S.SS) Introductory Biology or
3 BIOL 211 (F.S) Principles of Biology I
3 BIOL 155 (F.S) Human Biology
3 BIOL 173 (F.S) Environmental Biology
Natural Resources Ecology and Management
3 NREM 120 (F.S) Introduction to Renewable Resources
Biochemistry, Biophysics, and Molecular Biology
3 BBMB 221 (F) Structure and Reactions in Biochemical Processes

Humanities, Ethics and Social Sciences (15 credits)
3 Econ 101 (F.S.SS) Principles of Microeconomics
   From approved lists:
3 Humanities (College of Agriculture list)
   www.agstudent.iastate.edu/agriculturestudentservices/humanities.htm
3 Ethics Course (College of Agriculture list)
   http://www.agstudent.iastate.edu/agriculturestudentservices/ethicslist.html
3 International Perspectives (University list)
   www.iastate.edu/~registrar/courses/ip-list.html
3 U.S. Diversity (University list)
   www.iastate.edu/~registrar/courses/diversity-list.html

Technology Core (30 credits)
1 TSM 110 (F) Introduction to Technology
1 TSM 111 (S) Experiencing Technology
1 TSM 201 (S) Entrepreneurship and Internship Seminar
1 TSM 301 (S) Ethics and Leadership Seminar
1 TSM 401 (F) Senior Seminar
3 TSM 115 (F.S) Solving Technological Problems
3 TSM 210 (F) Fundamentals of Technology
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- **TSM 116 (F.S)** Introduction to Design in Technology
- **TSM 363 (F)** Electric Power and Electronics for Agriculture and Industry
- **TSM 270 (F)** Principles of Injury Prevention
- **TSM 310 (S)** Total Quality Improvement
- **TSM 399 (F.S.SS)** Work Experience in Technology
- **TSM 397 (F.S.SS)** Internship in Technology
- **TSM 415 (F.S.)** Technology Capstone I
- **TSM 416 (F.S.)** Technology Capstone II

**Business Core (6 credits)**
- **ACCT 284 (F.S.SS)** Financial Accounting
- **ECON 330 (F.S)** Farm Business Management or
- **ECON 336 (F)** Agricultural Selling or
- **ECON 355 (F.S)** International Trade and Finance or
- **MGMT 370 (F.S.SS)** Management and Organization or
- **MGMT 414 (F)** International Management

**Option Core (33 credits)**
- **TSM 216 (F.S)** Advanced Technical Graphics, Interpretation, and CAD
- **TSM 240 (F)** Introduction to Manufacturing Processes
- **TSM 330 (F.S)** Agricultural Machinery and Power Management
- **TSM 333 (F)** Precision Farming Systems
- **TSM 335 (F)** Tractor Power
- **TSM 337 (S)** Fluid Power Systems Technology
- **TSM 370 (S)** Occupational Safety
- **TSM 443 (F)** Statics and Strength of Materials for Technology
- **TSM 465 (F)** Automation Systems
- **5 Technical Electives** See Departmental List

**Technical Elective List for Machine Systems Option (AST)**

- **Agronomy**
  - **AGRON 114** Principles of Agronomy
  - **AGRON 154** Fundamentals of Soil Science

- **Engineering Mechanics**
  - **EM 274** Statics of Engineering
  - **EM 324** Mechanics of Materials
  - **EM 327** Mechanics of Materials Lab
  - **EM 345** Dynamics
  - **EM 378** Mechanics of Fluids

- **Material Engineering**
  - **MAT E 272** Principles of Materials Science and Engineering
  - **MAT E 362** Principles of Nondestructive Testing
  - **MAT E 362L** Nondestructive Testing Laboratory

- **Mathematics**
  - **MATH 166** Calculus II
  - **MATH 266** Elementary Differential Equations.

- **Statistics**
  - **STAT 401** Statistical Methods for Research Workers

- **Technology**
  - **Any 300 level or higher TSM and AE course not required in the technology or option cores.**
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