

## AGRICULTURAL SYSTEMS & INDUSTRIAL TECHNOLOGY CURRICULUM

### Machine Systems (2007-2009 Catalog)

128.5 credits required for graduation

#### Interpersonal and Public Communication Skills (12.5 credits)

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|-----|-------------------|--|
| 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, <b>or</b>                            |
|     | Engl 309 (F.S)    | Report and Proposal Writing, <b>or</b>                       |
|     | Engl 314 (F.S.SS) | Technical Communication                                      |
| 3   | SpCm 212 (F.S.SS) | Fundamentals of Public Speaking, <b>or</b>                   |
|     | 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)

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|---|----------------------|--------------------------------------|
| 3 | Math 142 (F.S.SS)    | Trigonometry and Analytic <b>and</b> |
| 4 | Math 160 (F.S)       | Survey of Calculus; <b>or</b>        |
| 4 | Math 165 (F.S.SS)    | Calculus I                           |
| 4 | Physics 111 (F.S.SS) | General Physics <b>and</b>           |
| 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 <b>and</b>         |
| 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

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|---|----------------|-------------------------------------|
| 3 | NREM 120 (F.S) | Introduction to Renewable Resources |
|---|----------------|-------------------------------------|

##### Biochemistry, Biophysics, and Molecular Biology

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|---|--------------|--|
| 3 | BBMB 221 (F) | Structure and Reactions in Biochemical Processes |
|---|--------------|--|

#### Humanities, Ethics and Social Sciences (15 credits)

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|---|-----------------------------|--|
| 3 | Econ 101 (F.S.SS)           | Principles of Microeconomics   |
|   | <b>From approved lists:</b> |  |
| 3 | Humanities                  | (College of Agriculture list)<br><a href="http://www.agstudent.iastate.edu/agriculturestudentservices/humanities.htm">www.agstudent.iastate.edu/agriculturestudentservices/humanities.htm</a>          |
| 3 | Ethics Course               | (College of Agriculture list)<br><a href="http://www.agstudent.iastate.edu/agriculturestudentservices/ethicslist.html">http://www.agstudent.iastate.edu/agriculturestudentservices/ethicslist.html</a> |
| 3 | International Perspectives  | (University list)<br><a href="http://www.iastate.edu/~7eregistrar/courses/ip-list.html">www.iastate.edu/~7eregistrar/courses/ip-list.html</a>  |
| 3 | U.S. Diversity              | (University list)<br><a href="http://www.iastate.edu/~registrar/courses/diversity-list.html">www.iastate.edu/~registrar/courses/diversity-list.html</a>  |

#### Technology Core (30 credits)

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|---|----------------|---|
| 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          |

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3	TSM 210 (F)	Fundamentals of Technology
3	TSM 116 (F.S)	Introduction to Design in Technology
4	TSM 363 (F)	Electric Power and Electronics for Agriculture and Industry
3	TSM 270 (F)	Principles of Injury Prevention
3	TSM 310 (S)	Total Quality Improvement
2	TSM 399 (F.S.SS)	Work Experience in Technology
R	TSM 397 (F.S.SS)	Internship in Technology
2	TSM 415 (F.S.)	Technology Capstone I
2	TSM 416 (F.S.)	Technology Capstone II

#### Business Core (6 credits)

3	ACCT 284 (F.S.SS)	Financial Accounting
3	ECON 330 (F.S)	Farm Business Management <b>or</b>
3	ECON 336 (F)	Agricultural Selling <b>or</b>
3	ECON 355 (F.S)	International Trade and Finance <b>or</b>
3	MGMT 370 (F.S.SS)	Management and Organization <b>or</b>
3	MGMT 414 (F)	International Management

#### Option Core (33 credits)

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

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

##### Agronomy

3	AGRON 114	Principles of Agronomy
3	AGRON 154	Fundamentals of Soil Science

##### Engineering Mechanics

3	EM 274	Statics of Engineering
3	EM 324	Mechanics of Materials
1	EM 327	Mechanics of Materials Lab
3	EM 345	Dynamics
3	EM 378	Mechanics of Fluids

##### Material Engineering

2	MAT E 272	Principles of Materials Science and Engineering
3	MAT E 362	Principles of Nondestructive Testing
1	MAT E 362L	Nondestructive Testing Laboratory

##### Mathematics

4	MATH 166	Calculus II
3	MATH 266	Elementary Differential Equations.

##### Statistics

4	STAT 401	Statistical Methods for Research Workers
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##### Technology

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

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