

INDUSTRIAL TECHNOLOGY CURRICULUM

Department of Agricultural and Biosystems Engineering – Iowa State University
Manufacturing Option – 120 credits required for graduation (2020-2021 Catalog)

Interpersonal and Public Communication Skills (13 credits)

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|---|---------------------|---|
| 3 | ENGL 150 (F.S.SS.) | Critical Thinking and Communication |
| 3 | ENGL 250 (F.S.SS.) | Written, Oral, Visual, and Electronic Composition |
| 3 | ENGL 302 (F.S.SS.) | Business Communication, or |
| | ENGL 309 (F.S.SS.) | Proposal and Report Writing, or |
| | ENGL 314 (F.S.SS.) | Technical Communication, or |
| | AGEDS 327 (F.S.SS.) | Advanced Communication for Agriculture and Life Sciences |
| 3 | SP CM 212 (F.S.SS.) | Fundamentals of Public Speaking, or |
| | AGEDS 311 (F.S.SS.) | Presentation and Sales Strategies for Agricultural Audiences, or |
| | COMST 214 (F.S.SS.) | Professional Communication |
| 1 | LIB 160 (F.S.SS.) | Information Literacy |

Mathematical, Physical, and Life Sciences (25 credits)

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| 3 | MATH 145 (F.S.) | Applied Trigonometry |
| 3 | MATH 151 (F.S.SS.) | Calculus for Business and Social Sciences |
| 5 | PHYS 131 (F.S.SS.) | General Physics |
| 3 | STAT 104 (F.S.SS.) | Introduction to Statistics |
| 4 | CHEM 163 (F.S.SS.) | College Chemistry |
| 1 | CHEM 163L (F.S.SS.) | Laboratory in College Chemistry |
| 3 | BIOL 101 (F.S.SS.) | Introductory Biology or |
| | BIOL 211 (F.S.SS.) | Principles of Biology I or |
| | BIOL 212 (F.S.SS.) | Principles of Biology II or |
| | BIOL 251 (S.) | Biological Processes in the Environment |
| 3 | Life Sciences | (College of Agriculture and Life Sciences list) |
- <https://www.cals.iastate.edu/student-services/life-science>

Business, Humanities, Ethics and Social Sciences (18 credits)

Certain courses in this section may be double counted to fulfill more than one academic requirement. Check with your advisor and this link for more details: <http://www.abe.iastate.edu/undergraduate-students/advising-for-ast-i-tech/>

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| 3 | ACCT 284 (F.S.SS.) | Financial Accounting |
| 3 | ECON 101 (F.S.SS.) | Principles of Microeconomics |
| 3 | Ethics Course | TSM 370 (F.S.) Occupational Safety |
| From approved lists: | | |
| 3 | Humanities | (College of Agriculture and Life Science list) |
| | | https://www.cals.iastate.edu/student-services/humanities |
| 3 | International Perspectives | (University list) |
| | | http://www.registrar.iastate.edu/students/div-ip-guide/IntlPerspectives-current |
| 3 | U.S. Diversity | (University list) |
| | | http://www.registrar.iastate.edu/students/div-ip-guide/usdiversity-courses |

Technology Core (30 credits)

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| 1 | TSM 110 (F.) | Introduction to Technology |
| 1 | TSM 111 (F.S.) | Experiencing Technology |
| 3 | TSM 115 (F.S.) | Solving Technology Problems |
| 3 | TSM 116 (F.S.) | Introduction to Design in Technology |
| 1 | TSM 201 (F.S.) | Preparing for Workplace Seminar |
| 3 | TSM 210 (F.S.) | Fundamentals of Technology |
| 1 | TSM 214 (F.S.) | Managing Technology Projects |
| 3 | TSM 270 (F.S.) | Principles of Injury Prevention and Safety |
| 3 | TSM 310 (F.S.) | Total Quality Improvement |
| 4 | TSM 363 (F.S.) | Electric Power and Electronics for Agriculture and Industry |
| R | TSM 397 (F.S.SS.) | Internship in Technology |
| 2 | TSM 399 (F.S.SS.) | Work Experience in Technology |
| 2 | TSM 415 (F.S.) | Technology Capstone I |
| 3 | TSM 416 (F.S.) | Technology Capstone II |

Option Core (26 credits)

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| 1 | ABE 271 (F.S.) or
ABE 272 (F.S.) or
ABE 273 (F.S.) | Engineering Applications of Parametric Solid Modeling or
Parametric Solid Models, Drawings, and Assemblies using Creo Parametric or
CAD for Process Facilities and Land Use Planning |
| 2 | TSM 216 (F.S.) | Advanced Technical Graphics, Interpretation and CAD |
| 3 | TSM 240 (F.S.) | Introduction to Advanced Manufacturing and Metals Processing |
| 2 | TSM 241 (F.S.) | Introduction to Manufacturing Processes for Plastics |
| 3 | TSM 337 (F.S.) | Fluid Power Systems Technology |
| 3 | TSM 340 (F.S.) | Advanced Automated Manufacturing Processes |
| 3 | TSM 440 (F.S.) | Cellular Lean Manufacturing Systems |
| 3 | TSM 433 (F.S.) | Statics and Strength of Materials for Technology |
| 3 | TSM 444 (F.S.) | Facility Planning |
| 3 | TSM 465 (F.S.) | Automation Systems |

Electives (8 credits)

Electives to strengthen degree