

ENGINEERING TECHNOLOGY & MANAGEMENT FOR AGRICULTURAL SYSTEMS: CONSTRUCTION MANAGEMENT, BS

for the degree of Bachelor of Science Major in Engineering Technology & Management for Agricultural Systems: Construction Management concentration

Students in the Construction Management concentration are trained in construction skills and concepts, as well as management practices and principles. Students learn to 1) manage residential, agricultural, and industrial construction technologies; 2) operate and manufacture systems that provide the desired environmental conditions for animals, people, crop storage, and greenhouses; 3) maintain systems to handle and treat biowaste; and 4) develop alternative housing and nutrient management practices. Graduates of the Construction Management concentration are prepared for careers with private construction companies, government and environmental agencies, or for entrance into graduate or professional school.

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Prescribed Courses including Campus General Education

| Code | Title | Hours |
|--|---|--------|
| Composition I and Speech | | |
| Select one of the following: | | 6-7 |
| RHET 105 & CMN 101 | Writing and Research and Public Speaking (or equivalent (see college Composition I requirement)) | |
| CMN 111 & CMN 112 | Oral & Written Comm I and Oral & Written Comm II | |
| Advanced Composition | | 3-4 |
| Select from the list below | | |
| AGCM 220 | Communicating Agriculture | |
| BADM 340 | Ethical Dilemmas of Business | |
| BTW 250 | Principles Bus Comm | |
| BTW 261 | Principles Tech Comm | |
| ECE 316 | Ethics and Engineering | |
| ESE 360 | Environmental Writing | |
| ETMA 311 | Humanity in the Food Web | |
| LEAD 230 | Leadership Communications | |
| NRES 419 | Env and Plant Ecosystems | |
| PLPA 200 | Plants, Pathogens, and People | |
| Cultural Studies | | 9 |
| Select one course from Western culture, one from non-Western culture, and one from U.S. minority culture from campus approved lists. | | |
| Foreign Language | | |
| Coursework at or above the third level is required for graduation. | | |
| Quantitative Reasoning I | | |
| MATH 234 | Calculus for Business I (or equivalent) | 4 |
| Quantitative Reasoning II | | 3 or 4 |
| Select one of the following: | | |
| ACE 262 | Applied Statistical Methods and Data Analytics I | |
| CPSC 241 | Intro to Applied Statistics | |
| ECON 202 | Economic Statistics I | |
| STAT 107 | Data Science Discovery | |
| Natural Sciences and Technology | | |
| CHEM 102 & CHEM 103 | General Chemistry I and General Chemistry Lab I | 4 |
| PHYS 101 | College Physics: Mech & Heat | 5 |
| Select one of the following: | | 4-5 |

| | | |
|--|---|--------|
| CHEM 104 & CHEM 105 | General Chemistry II and General Chemistry Lab II | |
| OR | | |
| PHYS 102 | College Physics: E&M & Modern | |
| Humanities and the Arts | | |
| Select from campus approved list. | | 6 |
| Social and Behavioral Sciences | | |
| ACE 100 or ECON 102 | Introduction to Applied Microeconomics Microeconomic Principles | 3-4 |
| Social and behavioral sciences. Select from campus approved list. | | 3 or 4 |
| ACES Prescribed | | |
| ACES 101 | Contemporary Issues in ACES | 2 |
| ETMA Required | | |
| CS 105 | Intro Computing: Non-Tech | 3 |
| ETMA 100 | Technical Systems in Agr | 3 |
| ETMA 339 | Optimization in Engineering Technology and Management | 3 |
| ETMA 421 or ETMA 422 | Industrial and Agricultural Safety-Injury Prevention Industrial and Agricultural Occupational Illness Prevention | 3 |
| ETMA 430 | Project Management | 2 |
| ETMA 439 | Capstone Experience | 4 |
| Business electives | | |
| A total of 6 hours from the Business Electives list which do not satisfy any other requirements. | | |
| ACCY 200 | Fundamentals of Accounting | 3 |
| ACCY 201 | Accounting and Accountancy I | 3 |
| ACCY 202 | Accounting and Accountancy II | 3 |
| ACCY 211 | Understanding Financial Statements | 3 |
| ACCY 212 | Understanding Accounting for Business Decisions | 3 |
| ACE 210 | Environmental Economics | 3 |
| ACE 240 | Personal Financial Planning | 3 |
| ACE 310 | Natural Resource Economics | 3 |
| ACE 345 | Finan Decision Indiv Sm Bus | 3 |
| ACE 346 | Tax Policy and Finan Planning | 3 |
| ACE 432 | Advanced Farm Management | 3 or 4 |
| ACE 435 | Global Agribusiness Management | 3 |
| AGCM 270 | Ag Sales and Persuasive Communication | 3 |
| BADM 300 | The Legal Environment of Bus | 3 |
| BADM 310 | Mgmt and Organizational Beh | 3 |
| BADM 311 | Leading Individuals and Teams | 3 |
| BADM 312 | Designing and Managing Orgs | 3 |
| BADM 313 | Strategic Human Resource Management | 3 |
| BADM 314 | Leading Negotiations | 3 |
| BADM 320 | Principles of Marketing | 3 |
| BADM 322 | Marketing Research | 3 |
| BADM 323 | Marketing Communications | 3 |
| BADM 326 | Pricing Strategy | 3 |
| FIN 221 | Corporate Finance | 3 |
| FIN 230 | Introduction to Insurance | 3 |
| LER 290 | Introduction to Employment Law | 3 |
| LEAD 140 | Harnessing Your Interpersonal Intelligence | 2 |
| LEAD 260 | Foundations of Leadership | 3 |
| LEAD 340 | Leadership Ethics & Society: Addressing Contemporary Challenges | 3 |
| LEAD 380 | Leadership in Groups and Teams | 3 |

| | | |
|----------|--|--------|
| LEAD 440 | Interpersonal Intelligence for Professional Success | 2 |
| SE 361 | Emotional Intelligence Skills | 3 |
| SE 400 | Engineering Law | 3 or 4 |
| TE 230 | Design Thinking/Need-Finding | 3 |
| TE 250 | From Idea to Enterprise | 2 |
| TE 333 | Creativity, Innovation, Vision | 4 |
| TE 360 | Lectures in Engineering Entrepreneurship | 1 |
| TE 450 | Startups: Incorporation, Funding, Contracts, & Intellectual Property | 3 |

Introductory Related Courses

Select 2 courses from the list for your concentration. 6-8

ETMA Electives

A total of 20 hours from the list for your concentration with a minimum of 11 hours at the advanced level. 20

Concentration Electives

Select 18 hours from the list for your concentration, which do not satisfy any other requirements, with a minimum of 12 hours at the advanced level. 18

Total Hours **126**

ETMAS majors will need 40 hours of upper-level courses (300- and 400-level) to satisfy the campus minimum requirement of 40 hours of advanced coursework.

Concentration Requirements:

| Code | Title | Hours |
|--|---|-----------|
| Introductory Related Courses | | |
| Select two courses from this list: | | |
| LEAD 260 | Foundations of Leadership | |
| NRES 201 | Introductory Soils | |
| UP 101 | Introduction to City Planning | |
| UP 136 | Urban Sustainability | |
| ETMA | | 20 |
| ETMA 232 | Materials and Construction Sys | 3 |
| ETMA 371 | Residential Housing Design | 3 |
| ETMA 372 | Environ Control & HVAC Systems | 3 |
| Select an additional 11 hours from the list below for a total of 20 hours with a minimum of 11 hours at the advanced level | | |
| ETMA 130 | Basics of CAD | |
| ETMA 132 | Basics of Project Management | |
| ETMA 233 | Metallurgy & Welding Processes | |
| ETMA 234 | Wiring, Motors and Control Sys | |
| ETMA 262 | Agricultural Machine Systems Management | |
| ETMA 295 | Undergrad Research or Thesis | |
| ETMA 352 | Land and Water Mgt Systems | |
| ETMA 363 | Fluid Power Systems | |
| ETMA 396 | UG Honors Research or Thesis | |
| ETMA 425 | Managing Industrial and Agricultural Safety Risks | |
| ETMA 435 | Elec Computer Ctrl Sys | |
| ETMA 496 | Independent Study | |
| Concentration Electives | | 18 |
| Select 18 hours from the list below with a minimum of 12 hours at the advanced level. | | |
| At least two of: | | |
| CEE 320 | Construction Engineering | |
| CEE 420 | Construction Productivity | |
| CEE 421 | Construction Planning | |
| CEE 422 | Construction Cost Analysis | |
| At least one of: | | |
| BADM 300 | The Legal Environment of Bus | |

| | |
|--|--------------------------------------|
| BADM 310 | Mgmt and Organizational Beh |
| BADM 320 | Principles of Marketing |
| FIN 221 | Corporate Finance |
| FIN 241 | Fundamentals of Real Estate |
| At least one of: | |
| UP 406 | Urban Ecology |
| UP 446 | Sustainable Planning Seminar |
| UP 466 | Energy & the Built Environment |
| UP 475 | Real Estate Development Fundamentals |
| UP 480 | Sustainable Design Principles |
| May select from the below list to achieve 18 hours: | |
| ACE 345 | Finan Decision Indiv Sm Bus |
| CEE 424 | Sustainable Const Methods |
| ESE 482 | Challenges of Sustainability |

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a third level of a language other than English. For more information, see the corresponding section on the Degree General and Education Requirements page (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

First Year

| First Semester | Hours | Second Semester | Hours |
|---|-------|-----------------------|-----------|
| ETMA 100 | | 3 CHEM 102 | 3 |
| ACES 101 | | 2 CHEM 103 | 1 |
| RHET 105 or CMN 101 | | 4 CMN 101 or RHET 105 | 3 |
| ACE 100 | | 4 MATH 234 | 4 |
| Language Other than English (3rd level) | | 4 ETMA Elective | 3 |
| | | 17 | 14 |

Second Year

| First Semester | Hours | Second Semester | Hours |
|--|-------|--|-----------|
| CHEM 104 | | 3 PHYS 101 | 5 |
| CHEM 105 | | 1 ACE 262, CPSC 241, ECON 202, or STAT 107 | 3 |
| CS 105 | | 3 ETMA Elective | 3 |
| ETMA 232 | | 3 Introductory related course | 3 |
| Business Elective | | 3 General Education course | 3 |
| General Education course (choose a Humanities or Social/Behavioral Science course with Cultural Studies designation) | | 3 | |
| | | 16 | 17 |

Third Year

| First Semester | Hours | Second Semester | Hours |
|-----------------------------|-------|--------------------------|-------|
| ETMA 372 | | 3 ETMA 339 | 3 |
| Concentration Elective | | 3 ETMA 371 | 3 |
| Concentration Elective | | 3 Concentration Elective | 3 |
| Introductory Related Course | | 3 Business Elective | 3 |

| | | | | |
|--------------------------|--------------|----------------------------|--------------|---|
| General Education course | | 3 General Education course | | 3 |
| | | 15 | 15 | |
| Fourth Year | | | | |
| First Semester | Hours | Second Semester | Hours | |
| ETMA 430 | | 2 ETMA 439 | | 4 |
| Concentration Elective | | 3 ETMA Elective | | 2 |
| Concentration Elective | | 3 ETMA Elective | | 3 |
| General Education course | | 3 Concentration Elective | | 3 |
| Free Elective course | | 3 General Education course | | 3 |
| General Education course | | 3 | | |
| | | 17 | 15 | |

Total Hours 126

for the degree of Bachelor of Science Major in Engineering Technology & Management for Agricultural Systems: Construction Management concentration in the Department of Agricultural & Biological Engineering.

Agricultural & Biological Engineering

Agricultural & Biological Engineering Website (<https://abe.illinois.edu/>)
 1304 W. Pennsylvania Ave.
 Urbana, IL 61801
 217-333-3570
 Email: abe@illinois.edu

College of Agricultural, Consumer & Environmental Sciences

College of Agricultural, Consumer & Environmental Sciences Website (<https://aces.illinois.edu/>)

ACES Office of Academic Programs

128 Mumford Hall
 1301 West Gregory Drive
 Urbana, IL 61801

Advising

Phone: 217-333-3570
 Email: t-sm-etm-abe-advising@rt.aces.illinois.edu
 Advising Website (<https://abe.illinois.edu/academics/advising/>)

Admissions

ACES Undergraduate Admissions (<https://aces.illinois.edu/admissions/>)
 visit ACES@illinois.edu
 217-333-3380
 University of Illinois Undergrad Admissions (<https://www.admissions.illinois.edu/>)