AGRICULTURAL & BIOLOGICAL ENGINEERING, BS AND AGRICULTURAL & BIOLOGICAL ENGINEERING, BSAG

for the dual degree of Bachelor of Science in Agricultural & Biological Engineering and the Bachelor of Science in Agriculture in Agricultural and Biological Engineering

department website: https://abe.illinois.edu/undergraduate/
department faculty: https://abe.illinois.edu/directory/faculty

College websites: Agricultural, Consumer & Environmental Sciences (http://catalog.illinois.edu/schools/aces/academic-units) & Engineering (https://engineering.illinois.edu)

Dual Degree – Five Year Academic Program

Students who successfully complete this five-year academic program receive the Bachelor of Science with a major in Agricultural and Biological Engineering from the College of Engineering as well as the Bachelor of Science in Agriculture with a major in Agricultural Engineering and Agricultural Science from the College of ACES.

Students enroll in the College of ACES and then transfer to the College of Engineering after two years. Students then complete the ABET-accredited degree program in Agricultural and Biological Engineering in the College of Engineering before entering a fifth year in ACES in the Bachelor of Science in Agriculture degree program. The suggested program of study that follows fulfills graduation requirements for both the College of Engineering and the College of ACES.

Agricultural and biological engineering is the application of mathematics, physical and biological science, and engineering to agriculture, food systems, energy, natural resources, the environment, and related biological systems. This program has special emphasis on environmental protection and the biological interface of plants, animals, soils, and microorganisms with the design and performance of environments, machines, mechanisms, processes, and structures. Graduates are employed by industry, consulting firms, and government for research, education, and manufacturing.

for the degree of Bachelor of Science in Agricultural & Biological Engineering

department website: https://abe.illinois.edu/undergraduate/
department faculty: Agricultural & Biological Engineering Faculty (https://abe.illinois.edu/directory/faculty)

overview of college admissions & requirements: Agricultural, Consumer & Environmental Sciences (http://catalog.illinois.edu/schools/aces/academic-units)
college websites: https://aces.illinois.edu/ and https://engineering.illinois.edu
e-mail: abe@illinois.edu

Students pursuing this major select one of two concentrations:

• Agricultural Engineering Concentration (http://catalog.illinois.edu/undergraduate/eng_aces/agricultural-biological-engineering-bs/agricultural-engineering)
• Biological Engineering Concentration (http://catalog.illinois.edu/undergraduate/eng_aces/agricultural-biological-engineering-bs/biological-engineering)

for the dual degree of Bachelor of Science with a Major in Agricultural & Biological Engineering and the Bachelor of Science in Agriculture with a Major in Agricultural and Biological Engineering

After completion of the Agricultural & Biological Engineering, BS the student enters a fifth year in ACES for the BSAG degree. The curriculum is as follows:

Agricultural & Biological Engineering, BSAG Requirements in addition to completion of Agricultural & Biological Engineering, B.S.

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<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>CMN 101</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>ANSC 100</td>
<td>Intro to Animal Sciences</td>
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<tr>
<td>ANSC 221</td>
<td>Cells, Metabolism and Genetics</td>
</tr>
<tr>
<td>ANSC 350</td>
<td>Cellular Metabolism in Animals</td>
</tr>
<tr>
<td>ANSC 363</td>
<td>Behavior of Domestic Animals</td>
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<tr>
<td>ANSC 400</td>
<td>Dairy Herd Management</td>
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<tr>
<td>ANSC 401</td>
<td>Beef Production</td>
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<tr>
<td>ANSC 402</td>
<td>Sheep Production</td>
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<tr>
<td>ANSC 403</td>
<td>Pork Production</td>
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<tr>
<td>ANSC 404</td>
<td>Poultry Science</td>
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<tr>
<td>ANSC 406</td>
<td>Zoo Animal Conservation Sci</td>
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<tr>
<td>ANSC 450</td>
<td>Comparative Immunobiology</td>
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<tr>
<td>ATMS 201</td>
<td>General Physical Meteorology</td>
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<tr>
<td>ATMS 307</td>
<td>Climate Processes</td>
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<tr>
<td>CHEM 232</td>
<td>Elementary Organic Chemistry I</td>
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<tr>
<td>CHEM 233</td>
<td>&amp;CHEM 233and Elementary Organic Chem Lab I</td>
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<tr>
<td>CHEM 312</td>
<td>Inorganic Chemistry</td>
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<td>CHEM 332</td>
<td>Elementary Organic Chem II</td>
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<td>CHEM 360</td>
<td>Chemistry of the Environment</td>
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<td>CHEM 460</td>
<td>Green Chemistry</td>
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<td>CPSC 112</td>
<td>Introduction to Crop Sciences</td>
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<td>CPSC 261</td>
<td>Biotechnology in Agriculture</td>
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<td>CPSC 265</td>
<td>Genetic Engineering Lab</td>
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<td>CPSC 270</td>
<td>Applied Entomology</td>
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<td>CPSC 352</td>
<td>Plant Genetics</td>
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<tr>
<td>CPSC 414</td>
<td>Forage Crops and Pasture Eco</td>
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<td>CPSC 415</td>
<td>Bioenergy Crops</td>
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<tr>
<td>CPSC 418</td>
<td>Crop Growth and Management</td>
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<tr>
<td>CPSC 431</td>
<td>Plants and Global Change</td>
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<tr>
<td>CPSC 437</td>
<td>Principles of Agroecology</td>
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<tr>
<td>CPSC 473</td>
<td>Mgmt of Field Crop Insects</td>
</tr>
<tr>
<td>FSHN 101</td>
<td>Intro Food Science &amp; Nutrition</td>
</tr>
<tr>
<td>FSHN 414</td>
<td>Food Chemistry</td>
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</tbody>
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Information listed in this catalog is current as of 08/2019
FSHN 416  Food Chemistry Laboratory  
FSHN 461  Food Processing I  
FSHN 471  Food & Industrial Microbiology  
GEOL 107  Physical Geology  
GEOL 380  Environmental Geology  
HORT 100  Introduction to Horticulture  
HORT 341  Greenhouse Mgmt and Production  
HORT 344  Planting for Biodiversity and Aesthetics  
HORT 360  Vegetable Crop Production  
HORT 361  Small Fruit Production  
HORT 362  Tree Fruit Production  
HORT 363  Postharvest Handling Hort Crop  
HORT 421  Horticulural Physiology  
HORT 435  Urban Food Production  
IB 103  Introduction to Plant Biology  
IB 150  Organismal & Evolutionary Biol  
& IB 151  Organismal & Evol Biol Lab  
IB 203  Ecology  
IB 329  Animal Behavior  
IB 335  Plant Systematics  
IB 411  Biinspiration  
IB 420  Plant Physiology  
IB 439  Biogeography  
IB 444  Insect Ecology  
IB 452  Ecosystem Ecology  
IB 482  Insect Pest Management  
IB 485  Environ Toxicology & Health  
IB 486  Pesticide Toxicology  
MCB 100  Introductory Microbiology  
& MCB 101  and Intro Microbiology Laboratory  
MCB 150  Molec & Cellular Basis of Life  
& MCB 151  and Molec & Cellular Laboratory  
MCB 244  Human Anatomy & Physiology I  
& MCB 245  and Human Anat & Physiol Lab I  
MCB 250  Molecular Genetics  
& MCB 251  and Exp Techniqs in Molecular Biol  
MCB 252  Cells, Tissues & Development  
& MCB 253  and Exp Techniqs in Cellular Biol  
MCB 300  Microbiology  
& MCB 301  and Experimental Microbiology  
MCB 314  Introduction to Neurobiology  
MCB 316  Genetics and Disease  
MCB 450  Introductory Biochemistry  
NRES 201  Introductory Soils  
NRES 219  Principles of Ecosystem Mgmt  
NRES 348  Fish and Wildlife Ecology  
NRES 351  Introduction to Environmental Chemistry  
NRES 419  Env and Plant Ecosystems  
NRES 420  Restoration Ecology  
NRES 429  Aquatic Ecosystem Conservation  
NRES 439  Env and Sustainable Dev  
NRES 471  Pedology  
NRES 475  Environmental Microbiology  
NRES 487  Soil Chemistry  
NRES 488  Soil Fertility and Fertilizers  
PLPA 204  Introductory Plant Pathology  
PLPA 401  Plant Pathogenic Fungi  
PLPA 402  Phytoparasitic Nematodes  
PLPA 404  Plant Virology  
PLPA 405  Plant Disease Diagnosis & Mgmt  
PLPA 406  Phytobacteriology  
PLPA 407  Diseases of Field Crops  

Agricultural Sciences Coursework \(^2\)  15  

Free Electives \(^3\)  

Total hours required to receive an Agricultural and Biological Engineering, BS and an Agricultural and Biological Engineering, BSAG 158  

\(^1\) In addition to the Biological and Natural Sciences Elective hours required for Agricultural and Biological Engineering (6 hours), a further 4 hours of biological sciences must be completed to make up a total of 10 hours.  

\(^2\) Fifteen hours of agricultural sciences with courses from at least two subject areas other than Agricultural and Biological Engineering and Technical Systems Management, and approval of advisers are required.  

\(^3\) Sufficient free electives selected to total minimum curriculum requirement of 158 hours. All requirements of the combined curriculum must be completed to satisfy the requirements for both degrees.