



# WHAT TO DO WITH A MAJOR IN...

## BIOLOGICAL

### Description of Major

Biological engineering is characterized by the application of engineering principles to problems in biological systems. These systems can consist of cells in tissue culture responding to corrosion byproducts, the human body as it reacts to medical implants, animals generation solid wastes at animal production facilities, or production and processing of plants in agricultural systems. These problems are multi-disciplinary in nature and present challenges for which biological engineers are uniquely qualified. In addition to taking a solid core of traditional engineering courses, students in biological engineering take courses in chemistry, biological sciences, biochemistry, and microbiology. Undergraduate students may choose from the following emphasis areas: biomedical engineering, environmental engineering, precision agriculture/agricultural systems, or premedical studies. A large number of biological engineering undergraduates go on to graduate and professional school.

### Possible Job Titles

Note: This list is not comprehensive, and some positions may require further education and training.

Advanced Product Technologies Engineer  
Agribusiness Consultant  
Agricultural Systems Engineer  
Applications Engineer  
Biomechanics Research Associate  
Biomedical Engineer  
Design Engineer  
Environmental Engineer  
Field Engineer  
Manufacturing Engineer

Plant Engineer  
Precision Agriculture Engineer  
Process Engineer  
Product & Process Stimulation Specialist  
Product Development Engineer  
Professor  
Researcher  
Senior Research Technician  
Technical Specialist

The following links are excellent resources on specific careers such as those listed above:

- **O-net:** <http://online.onetcenter.org/>
- **Occupational Outlook Handbook:** <https://www.bls.gov/ooh/>
- **Federal Occupations by College Major:** <https://tinyurl.com/y9sx5fr3>

### Possible Employment Settings/Fields

Agricultural Equipment Manufacturing  
Agriculture Industry  
Architectural & Engineering Firms  
Consumer Products Industry  
Corps of Engineers  
Data Processing/Computer Analysis Firms  
Engineering Consulting Firms  
Environmental Consulting Firms  
Environmental Protection Agency  
Food Industry  
Geographic Information Systems

Global Positioning Systems  
Healthcare Facilities  
Information Services  
Large Farming Operations  
Natural Resources Conservation Service  
Processing Industry  
Remote Sensing  
State Departments of Environmental Quality  
United States Government  
Universities

**Strategies for Success**

- Prepare for graduate school if a pre-professional or advanced position is desired.
- Volunteer to gain relevant experience.
- Participate in MSU's Cooperative Education program.
- Ask to job shadow or interview a professional.
- Talk to faculty, recent graduates, and current students in the field.
- Seek involvement in The Institute for Biological Engineering or The Society for Biomaterials.
- Purchase a personal computer.

**Departmental Information for Biological Engineering**

**Office Address:** 150 Agricultural and Biological Engineering Building

**Phone:** (662) 325-3282

**Website:** <http://www.abe.msstate.edu/Undergraduate/Biological/index.html>