

## Agricultural Engineering, B.S.

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The Bachelor of Science in Agricultural Engineering degree is cutting-edge, innovative and market-driven in order to prepare students for today's industry demands. Three options are offered as a part of the program:

- (1) Power & Machinery;
- (2) Agricultural Production Systems; and
- (3) Soil and Water Systems.

**For full admission into B.S. in Agricultural Engineering program, students must meet the following requirements:**

- Completed the high school core curriculum and received the diploma or the equivalent
- An ACT score of 19 or above or SAT score equivalent (1330 or above OLD TEST) or 980 (NEW TEST). Students with an ACT score of 15 - 18 or SAT score equivalent (1060 - 1320) or 810-940 (NEW TEST) will be considered for conditional admission.
- A high school GPA of 2.5 or above on a 4.0 scale
- Successfully complete prerequisite coursework with a grade of C or better.

## Agricultural Engineering Curriculum

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### English and Communications

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9 hours

- [ENGL 1311 - English Composition I \(ACTS ENGL 1013\)](#) Credits: 3
- [ENGL 1321 - English Composition II \(ACTS ENGL 1023\)](#) Credits: 3
- [MCOM 2390 - Oral Communication \(ACTS SPCH 1003\)](#) Credits: 3

### Natural Science and Mathematics

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13 hours

- [BIOL 1455 - Principles of Biology \(ACTS BIOL 1014\)](#) Credits: 4
- [CHEM 1130 - General Chemistry I Lab \(ACTS 1414; CHEM 1330 co-requisite\)](#) Credits: 1
- [CHEM 1330 - General Chemistry I Lecture \(ACTS 1414\)](#) Credits: 3
- [MATH 2510 - Calculus I](#) Credits: 5

### Humanities

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6 hours

*Choose any two of the following*

- [HUMN 2301 - Humanities](#) Credits: 3
- [HUMN 2340 - Effective Thinking Logic](#) Credits: 3
- [ART 2340 - Art Appreciation and History of Art \(ACTS ARTA 1003\)](#) Credits: 3
- [MUSI 2330 - Music History and Appreciation \(ACTS MUSC 1003\)](#) Credits: 3
- [HLPE 1350 - Dance Appreciation](#) Credits: 3
- [THTR 2324 - Theatre Appreciation](#) Credits: 3

### Social Science

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9 hours

- [GE Hist/Govn 231X - GE History/Government 231X Non-Teaching Elective Options](#) Credits: 3  
*Choose any two of the following*
- [CRJU 2350 - Introduction to Criminal Justice \(ACTS CRJU 1023\)](#) Credits: 3
- [ECON 2311 - Principles of Macroeconomics \(ACTS ECON 2103\)](#) Credits: 3
- [ECON 2321 - Principles of Microeconomics \(ACTS ECON 2203\)](#) Credits: 3
- [GEOG 2360 - World Regional Geography \(ACTS GEOG 2103\)](#) Credits: 3
- [HIST 1330 - Western Civilization I \(ACTS HIST 1213\)](#) Credits: 3
- [HIST 1340 - Western Civilization II](#) Credits: 3
- [PSYC 2300 - General Psychology \(ACTS PSYC 1103\)](#) Credits: 3
- [SOCI 1320 - Introduction to Social Science](#) Credits: 3
- [SOCI 2310 - Intro To Sociology \(ACTS SOCI 1013\)](#) Credits: 3

## Health and Physical Education

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4 hours

- [HLPE HUSC 131X - Personal Health and Safety or Nutrition and Wellness Option](#) Credits: 3
- [HLPE/MLSC 11XX or 12XX - Physical Education Requirement](#) Credits: 1

## Institutional Requirements

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6 hours

- [BAS 1120 - Career and Life Planning](#) Credits: 1
- [BAS 1210 - Personal and Social Development](#) Credits: 2
- [ENGL 23XX - Literature Institutional Requirement](#) Credits: 3

## Agricultural Engineering Core

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45 hours

- [PHYS 3310 - University Physics I Lecture](#) Credits: 3
- [PHYS 3110 - University Physics I Laboratory](#) Credits: 1
- [PHYS 3320 - University Physics II Lecture](#) Credits: 3
- [PHYS 3120 - University Physics II Laboratory](#) Credits: 1
- [MATH 2520 - Calculus II](#) Credits: 5
- [AGRI 1421 - Plant Science](#) Credits: 4
- [AGRI 1321 - Science of Animals](#) Credits: 3
- [AGRI 2331 - Introductory Soils](#) Credits: 3
- [AGEN 1101 - Orientation to Agricultural Engineering](#) Credits: 1
- [CPSC 2300 - Computer Science I](#) Credits: 3
- [TECH 4320 - Estimating and Scheduling/Project Management](#) Credits: 3
- [AGEN 2310 - Agricultural Engineering Fundamentals](#) Credits: 3
- [AGEN 3301 - Computer Assisted Design](#) Credits: 3
- [AGEN 3320 - Agricultural Engineering Safety](#) Credits: 3
- [AGEN 4301 - Agricultural Engineering Project](#) Credits: 3
- [AGEN 3345 - Mechanics of Materials](#) Credits: 3

## Options

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Students can choose from *one* of the following options

### Power and Machinery

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28 hours

**Required courses:**

- [AGEN 4340 - Design of Agricultural Field Machinery](#) Credits: 3
- [AGEN 4310 - Agricultural Hydraulic Power](#) Credits: 3
- [AGEN 3505 - Agricultural Engineering Internship I](#) Credits: 5
- [AGEN 4505 - Agricultural Engineering Internship II](#) Credits: 5

**Choose any four of the following:**

- [AGEN 3322 - Agricultural Electric Power](#) Credits:
- [AGEN 3385 - Agricultural Tractor Power](#) Credits: 3
- [AGEN 4315 - Agricultural HVAC/Environmental Systems](#) Credits: 3
- [TECH 4372 - Fluid Power Systems](#) Credits: 3
- [AGEN 4325 - Design of Agricultural Structures](#) Credits: 3
- [AGEN 3335 - Surveying and Site Preparation](#) Credits: 3

## **Agricultural Production Systems**

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28 hours

**Required courses:**

- [AGEN 4340 - Design of Agricultural Field Machinery](#) Credits: 3
- [AGEN 4325 - Design of Agricultural Structures](#) Credits: 3
- [AGEN 3505 - Agricultural Engineering Internship I](#) Credits: 5
- [AGEN 4505 - Agricultural Engineering Internship II](#) Credits: 5

**Choose any four of the following electives:**

- [AGEN 3355 - Aquaculture Engineering](#) Credits: 3
- [AGEN 3365 - Food Process Engineering](#) Credits: 3
- [AGRI 3326 - Science of Crop Production](#) Credits: 3
- [AGRI 4352 - Agricultural Policy](#) Credits: 3
- [AGRI 4321 - Quality Assurance of Meat & Grain Products](#) Credits: 3
- [AGRI 3341 - Livestock Production](#) Credits: 3
- [AGRI 4386 - Geographic Information Systems \(GIS\) and Watershed Management](#) Credits: 3

## **Soil and Water Systems**

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28 hours

**Required courses:**

- [AGEN 3375 - Soil and Water Resource Engineering](#) Credits: 3
- [AGEN 3328 - Irrigation and Drainage Systems](#) Credits: 3
- [AGEN 3505 - Agricultural Engineering Internship I](#) Credits: 5
- [AGEN 4505 - Agricultural Engineering Internship II](#) Credits: 5

**Choose any four of the following electives:**

- [AGEN 4325 - Design of Agricultural Structures](#) Credits: 3
- [AGEN 4310 - Agricultural Hydraulic Power](#) Credits: 3
- [AGEN 3395 - Soil Mechanics](#) Credits: 3
- [AGRI 4386 - Geographic Information Systems \(GIS\) and Watershed Management](#) Credits: 3
- [AGRI 3334 - Soil Physics](#) Credits: 3
- [AGRI 3324 - Soil and Water Management](#) Credits: 3

## **Suggested Course Sequence**

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### **Freshman Year**

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#### **Fall Semester**

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- [BAS 1210 - Personal and Social Development](#) Credits: 2

- [ENGL 1311 - English Composition I \(ACTS ENGL 1013\)](#) Credits: 3
- [MATH 2510 - Calculus I](#) Credits: 5
- [CHEM 1330 - General Chemistry I Lecture \(ACTS 1414\)](#) Credits: 3
- [CHEM 1130 - General Chemistry I Lab \(ACTS 1414; CHEM 1330 co-requisite\)](#) Credits: 1
- [HLPE/MLSC 11XX or 12XX - Physical Education Requirement](#) Credits: 1
- [AGEN 1101 - Orientation to Agricultural Engineering](#) Credits: 1

**Total Hours: 16**

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### Spring Semester

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- [BAS 1120 - Career and Life Planning](#) Credits: 1
- [ENGL 1321 - English Composition II \(ACTS ENGL 1023\)](#) Credits: 3
- [MATH 2520 - Calculus II](#) Credits: 5
- [PHYS 3310 - University Physics I Lecture](#) Credits: 3
- [PHYS 3110 - University Physics I Laboratory](#) Credits: 1
- [BIOL 1455 - Principles of Biology \(ACTS BIOL 1014\)](#) Credits: 4

**Total Hours: 17**

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### Sophomore Year

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#### Fall Semester

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- [AGRI 1321 - Science of Animals](#) Credits: 3
- [PHYS 3320 - University Physics II Lecture](#) Credits: 3
- [PHYS 3120 - University Physics II Laboratory](#) Credits: 1
- [HUSC 1311 - Nutrition and Wellness](#) Credits: 3
- [AGRI 2331 - Introductory Soils](#) Credits: 3
- [ENGL 23XX - Literature Institutional Requirement](#) Credits: 3

**Total Hours: 16**

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#### Spring Semester

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- [AGEN 2310 - Agricultural Engineering Fundamentals](#) Credits: 3
- [AGRI 1421 - Plant Science](#) Credits: 4
- [GE Hist/Govn 231X - GE History/Government 231X Non-Teaching Elective Options](#) Credits: 3
- [CPSC 2300 - Computer Science I](#) Credits: 3
- [GE Soc. Sci. X3XX - General Education Social Science Elective Options](#) Credits: 3

**Total Hours: 16**

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#### Summer Semester

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- [AGEN 3505 - Agricultural Engineering Internship I](#) Credits: 5

**Total Hours: 5**

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### Junior Year

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#### Fall Semester

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- [MCOM 2390 - Oral Communication \(ACTS SPCH 1003\)](#) Credits: 3
- [GE Soc. Sci. X3XX - General Education Social Science Elective Options](#) Credits: 3
- [AGEN 3320 - Agricultural Engineering Safety](#) Credits: 3
- [AGEN 3345 - Mechanics of Materials](#) Credits: 3
- [AGEN 3301 - Computer Assisted Design](#) Credits: 3

**Total Hours: 15**

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### Spring Semester

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- [TECH 4320 - Estimating and Scheduling/Project Management](#) Credits: 3
- [HUMN X3XX - Humanities General Education Requirement](#) Credits: 3  
*Choose 9 hours from one of the following options- See advisor*
- [AGEN XXXX - Agricultural Production Systems Option](#) Credits: 9
- [AGEN XXXX - Power and Machinery Option](#) Credits: 9
- [AGEN XXXX - Soil and Water Systems Option](#) Credits: 9

**Total Hours: 15**

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### Summer Semester

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- [AGEN 4505 - Agricultural Engineering Internship II](#) Credits: 5

**Total Hours: 5**

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### Senior Year

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#### Fall Semester

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- [HUMN X3XX - Humanities General Education Requirement](#) Credits: 3  
*Choose 6 hours from one of the following options- See advisor*
- [AGEN XXXX - Agricultural Production Systems Option](#) Credits: 6
- [AGEN XXXX - Power and Machinery Option](#) Credits: 6
- [AGEN XXXX - Soil and Water Systems Option](#) Credits: 6

**Total Hours: 9**

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#### Spring Semester

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- [AGEN 4301 - Agricultural Engineering Project](#) Credits: 3  
*Choose 3 hours from one of the following options- See advisor*
- [AGEN XXXX - Agricultural Production Systems Option](#) Credits: 3
- [AGEN XXXX - Power and Machinery Option](#) Credits: 3
- [AGEN XXXX - Soil and Water Systems Option](#) Credits: 3

**Total Hours: 6**

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**Total Hours: 120**

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