

**BSAE Agricultural Engineering  
Fall 2018**

This document is an example of a BSAE program of study. Several factors can affect the course scheduling sequence. For a copy of the official curriculum, please go to the UGA Bulletin: <http://bulletin.uga.edu/>

**Major Requirements**

Students must earn a grade of "C" (2.0) or better in the courses listed in **bold**.

**High Demand Entrance Requirements**

To be considered as a candidate for BSAE, students must complete the courses listed in *italics* with a grade of "C" (2.0) or better. For more information on entrance requirements, please refer to the UGA Bulletin: <http://bulletin.uga.edu/> and our website.

<b>YEAR ONE</b>					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
<b>MATH 2250</b>	<i>Calculus I</i>	4	<b>MATH 2260</b>	<i>Calculus II</i>	4
<b>CHEM 1211&amp;L</b>	<b>Freshman Chemistry I</b>	4	<b>PHYS 1251</b>	<i>Physics for Engineers I</i>	3
ENGR 1920	Intro to Engineering	1	<b>ENGR 1140</b>	<i>Computational Engr. Methods</i>	2
<b>ENGR 1120</b>	<i>Engineering Graphics</i>	2	ENGL 1102	English Composition II	3
AENG 2100	Principles of Systems Engineering	3		Social Sciences Elective	3
<b>ENGL 1101</b>	<i>English Composition I</i>	3	FYOS	First-Year Odyssey Seminar	1
<b>Total Credit Hours</b>		<b>17</b>	<b>Total Credit Hours</b>		<b>16</b>
<b>YEAR TWO</b>					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
<b>MATH 2500</b>	<b>Multivariable Calculus</b>	3	<b>MATH 2700</b>	<b>Differential Equations</b>	3
<b>PHYS 1252</b>	<b>Physics for Engineers II</b>	3	<b>ENGR 2170</b>	<b>Electrical Circuits</b>	3
<b>ENGR 2120</b>	<b>Statics</b>	3	AENG 2920	Design Methodology	2
	<b>Life Science Elective<sup>1</sup></b>	4	<b>ENGR 3140</b>	<b>Thermodynamics I</b>	3
	<b>Major-Related Elective<sup>2</sup></b>	3	<b>ENGR 2110</b>	<b>Engineering Decision Making</b>	3
				Social Sciences Elective	3
<b>Total Credit Hours</b>		<b>16</b>	<b>Total Credit Hours</b>		<b>17</b>
<b>YEAR THREE</b>					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
<b>ENGR 3150</b>	<b>Heat Transfer</b>	3	ENGR 2180	Intro Modeling of Dynamic Systems	3
<b>ENGR 3160</b>	<b>Fluid Mechanics</b>	3	CVLE 2710	Numerical Methods for Engineers	2
ENVE 3510	Modeling, Stat. Analysis, Uncertainty	3		Area of Emphasis Required Course	3
	Area of Emphasis Required Course	3		Area of Emphasis Required Course	3
COMM 1110 <sup>3</sup>	Intro to Public Speaking	3		Area of Emphasis Required Course	3
				World Lang & Culture Elective	3
<b>Total Credit Hours</b>		<b>15</b>	<b>Total Credit Hours</b>		<b>17</b>
<b>YEAR FOUR</b>					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
AENG 4910	Engineering Design Project I	2	AENG 4911	Engineering Design Project II	2
<b>AENG 4140</b>	<b>Systems Modeling</b>	3		Area of Emphasis Required Course	3
	Area of Emphasis Elective	3		Area of Emphasis Required Course	3
	Area of Emphasis Elective	3		Area of Emphasis Required Course	3
	Area of Emphasis Elective	1		World Lang & Culture Elective	3
	World Lang & Culture Elective	3		Social Sciences Elective	3
<b>Total Credit Hours</b>		<b>15</b>	<b>Total Credit Hours</b>		<b>17</b>

<sup>1</sup>Life Science Elective: Select from BIOL 1107&L, CRSS 2010&L or P BIO 1210&L.

<sup>2</sup>Major-Related Elective: Select from ANTH 1102, FANR 2200 or GEOG 1125.

<sup>3</sup>COMM 1110 is required for BSAE; it will also satisfy the Humanities & The Arts requirement.

## BSAE Areas of Emphasis

Students must declare an Area of Emphasis and complete seven (7) Required Courses (21 credit hours) as well as three (3) Elective Courses (minimum of 7 credit hours).

### Electrical & Electronic Systems

#### Required Courses

ELEE 3270	Electronics I
ELEE 4210/6210	Linear Systems
ELEE 4220/6220	Feedback Control Systems
ELEE 4230/6230	Sensors & Transducers
ELEE 4240	Introduction to Microcontrollers
ELEE 4250/6250	Advanced Microcontrollers
ELEE 4270	Electronics II

#### Elective Courses

AENG 3540	Physical Unit Operations
BCHE 3520	Mass Transport & Rate Phenomena
CSEE 4310	Embedded Robotics
CSEE 4620/6620	Biomedical Imaging
ELEE 4260/6260	Introduction to Nanoelectronics
ELEE 4540/6540	Applied Machine Vision
CVLE/MCHE/LAND 4660/6660	Sustainable Building Design
MCHE 4650/6650	HVAC Systems for Buildings and Industry
ENGR 3101	Applied Vector Analysis (1 hour)

### Mechanical Systems

#### Required Courses

ELEE 3270	Electronics I
<b>ENGR 2130</b>	<b>Dynamics</b>
<b>ENGR 2140</b>	<b>Strength of Materials</b>
ENGR 4350/6350	Introduction to Finite Element Analysis
MCHE 3300	Machine Design I
MCHE 4300	Mechanical Systems
MCHE 4340	Machine Hydraulics

#### Elective Courses

AENG 3540	Physical Unit Operations
BCHE 3520	Mass Transport & Rate Phenomena
CSEE 4310	Embedded Robotics
CVLE 3610	Structural Design
ELEE 4210/6210	Linear Systems
ELEE 4220/6220	Feedback Control Systems
ELEE 4230/6230	Sensors & Transducers
ELEE 4240	Introduction to Microcontrollers
ELEE 4250/6250	Advanced Microcontrollers
ELEE 4540/6540	Applied Machine Vision
ENGR 4490/6490	Renewable Energy Engineering
CVLE/MCHE/LAND 4660/6660	Sustainable Building Design
MCHE 4650/6650	HVAC Systems for Buildings and Industry
ENGR 3101	Applied Vector Analysis (1 hour)
CVLE 3460	Civil Engineering Hydraulics Lab (1 hour)
CVLE 3470	Civil Engineering Structural Lab (1 hour)

### Natural Resource Management

#### Required Courses

CVLE 3440	Hydraulics of Closed Conduit Flow
<b>ENGR 2140</b>	<b>Strength of Materials</b>
ENVE 4435	Natural Resources Engineering
ENVE 4470/6470	Environmental Engr. Unit Operations
ENVE 4710	GIS for Urban Engineering, Planning, Dev.
CVLE/MCHE/LAND 4660/6660	Sustainable Building Design
MCHE 4650/6650	HVAC Systems for Buildings and Industry

#### Elective Courses

BCHE 3520	Mass Transport & Rate Phenomena
CRSS/FANR 3060&L	Soils & Hydrology
CRSS 4600/6600	Soil Physics
CVLE 3420	Introduction to Soil Mechanics
CVLE 3610	Structural Design
ELEE 4230/6230	Sensors & Transducers
ELEE 4240	Introduction to Microcontrollers
ENGR/GEOG4161&L/6161&L	Environmental Microclimatology
ENGR 4490/6490	Renewable Energy Engineering
ENGR 4700L	Hydrology, Geology, Soils of Georgia
ENVE 4410/6430	Open Channel Hydraulics
WASR 4700L/6700L	Hydrology, Geology and Soils of Georgia
CVLE 3450	Civil Engineering Soils Lab (1 hour)
CVLE 3460	Civil Engineering Hydraulics Lab (1 hour)
CVLE 3470	Civil Engineering Structural Lab (1 hour)

### **Structural Systems**

#### **Required Courses**

CVLE 3420	Introduction to Soil Mechanics
CVLE 3610	Structural Design
CVLE 4610	Design of Light Steel Structures
CVLE/MCHE 4720	Design of Residential Structures
<b>ENGR 2140</b>	<b>Strength of Materials</b>
ENGR/LAND 4660/6660	Sustainable Building Design
MCHE 4650/6650	HVAC Systems for Buildings and Industry

#### **Elective Courses**

BCHE 3520	Mass Transport & Rate Phenomena
CVLE 3440	Hydraulics of Closed Conduit Flow
CVLE 4530	Design of Reinforced Concrete Structures
ELEE 4210/6210	Linear Systems
ELEE 4220/6220	Feedback Control Systems
ENGR 4350/6350	Introduction to Finite Element Analysis
ENVE 4435	Natural Resources Engineering
ENVE 4470/6470	Environmental Engr. Unit Operations
ENVE 4710	GIS for Urban Engineering, Planning, Dev.
MCHE 3300	Machine Design I
CVLE 3450	Civil Engineering Soils Lab (1 hour)
CVLE 3470	Civil Engineering Structural Lab (1 hour)

### **Process Operations**

#### **Required Courses**

AENG 3540	Physical Unit Operations
ELEE 3270	Electronics I
ELEE 4210/6210	Linear Systems
ELEE 4220/6220	Feedback Control Systems
ELEE 4230/6230	Sensors & Transducers
ELEE 4240	Intro to Microcontrollers
<b>ENGR 2140</b>	<b>Strength of Materials</b>

#### **Elective Courses**

ELEE 4250/6250	Advanced Microcontrollers
ELEE 4540/6540	Applied Machine Vision
ENGR 4350/6350	Introduction to Finite Element Analysis
ENGR 4490/6490	Renewable Energy Engineering
FORS 4530/6530	Wood Properties & Utilization
MGMT 3000	Principles of Management
MGMT 4000	Operations Management
MGMT 4240	Quality Management
MGMT 4250	Productivity Management
POUL/FDST 4860&L/6860&L	Poultry Processing
ENGR 3101	Applied Vector Analysis (1 hour)