

BSAE Agricultural Engineering
Fall 2023

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.

YEAR ONE					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
MATH 2250	<i>Calculus I</i>	4	MATH 2260	<i>Calculus II</i>	4
CHEM 1211&L	Freshman Chemistry I	4	PHYS 1251	<i>Physics for Engineers I</i>	3
ENGR 1920	Intro to Engineering	1	ENGR 1140	Computational Engr. Methods	2
ENGR 1120	Engineering Graphics	2	ENGL 1102	English Composition II	3
AENG 2100	Principles of Systems Engineering	3		Social Sciences Elective	3
ENGL 1101	English Composition I	3	FYOS	First-Year Odyssey Seminar	1
Total Credit Hours		17	Total Credit Hours		16
YEAR TWO					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
MATH 2500	Multivariable Calculus	3	MATH 2700	Differential Equations	3
PHYS 1252	Physics for Engineers II	3	ENGR 2170	Electrical Circuits	3
ENGR 2120	Statics	3	AENG 2920	Design Methodology	2
	Life Science Elective¹	4	ENGR 3140	Thermodynamics I	3
	Major-Related Elective²	3	ENGR 2110	Engineering Decision Making	3
				Social Sciences Elective	3
Total Credit Hours		16	Total Credit Hours		17
YEAR THREE					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
ENGR 3150	Heat Transfer	3	AENG 3100	Motion and Time Studies	3
ENGR 3160	Fluid Mechanics	3	MCHE 3410	Numerical Methods in Mech. Engr.	3
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 ³	Intro to Public Speaking	3		Area of Emphasis Required Course	3
				World Lang & Culture Elective	3
Total Credit Hours		15	Total Credit Hours		18
YEAR FOUR					
<u>Fall Semester</u>		<u>Hours</u>	<u>Spring Semester</u>		<u>Hours</u>
AENG 4910	Capstone Design I	2	AENG 4911	Capstone Design II	2
AENG 4140	Systems Modeling	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
	World Lang & Culture Elective	3		World Lang & Culture Elective	3
				Social Sciences Elective	3
Total Credit Hours		14	Total Credit Hours		17

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

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

³COMM 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 (27 credit hours). **At least one design course (3 credit hours, indicated by italics) must be selected from the list of electives for each of the Area of Emphasis.**

Agricultural Systems Automation Engineering

Required Courses

INFO 2000	Experiential Data Science I
ELEE 3270	Electronics I
ELEE 4210/6210	Linear Systems
ELEE 4220/6220	Feedback Control Systems
ELEE 4230/6230	Sensors & Transducers
ELEE 4270	Electronics II
ELEE 4280/6280	Introduction to Robotics Engineering

Elective Courses

AENG 3540
AENG 4120/6120
AENG 4130
CSCI 3360
CSEE 4620/6620
ELEE 4260/6260
ENGR 3620
ENGR 4545
FANR 3800-3800L
FDST 3000
FDST 4012/6012&L
POUL/FDST 4860/6860&L

Physical Unit Operations
Introduction to Logistical Engineering
Precision Farming Controls & Sensors
Data Science I
Biomedical Imaging
Introduction to Nanoelectronics
Introduction to E-Mobility
Engineering Entrepreneurship
Spatial Analysis of Natural Resources
Intro to Food Science and Technology
Food Processing II
Poultry Processing

BioLogistics

Required Courses

AENG 3540	Physical Unit Operations
AENG 4110	Postharvest Facilities Engineering
AENG 4120/6120	Introduction to Logistical Engineering
AENG 4160/6160	Introduction to Operations Research
ELEE 3270	Electronics I
ENGR 2140	Strength of Materials
ENGR 4670/6670	Quality Engineering

Elective Courses

CVLE 3730
ELEE 4210/6210
ELEE 4230/6230
ENGR 3620
ENGR 4350/6350
ENGR 4490/6490
ENGR 4545
FDST 3000
FDST 4012/6012&L
HORT/CRSS 4430/6430
MGMT 4000
POUL/FDST 4860/6860&L
STAT 4260/6260

Civil Engineering Project Management
Linear Systems
Sensors & Transducers
Introduction to E-Mobility
Introduction to Finite Element Analysis
Renewable Energy Engineering
Engineering Entrepreneurship
Intro to Food Science and Technology
Food Processing II
Plant Physiology
Operations Management
Poultry Processing
Statistical Quality Assurance

Food Engineering

Required Courses

ELEE 3270	Electronics I
ELEE 4230/6230	Sensors & Transducers
ENGR 2140	Strength of Materials
FDST 4012/6012&L	Food Processing II
FDST 4013/6013&L	Food Processing III
MCHE 3300	Machine Design I
MCHE 4300	Mechanical Systems

Elective Courses

AENG 3540
AENG 4110
ELEE 4710
ENGR 3620
ENGR 4545
ENGR 4670/6670
FDST 3000
FDST/MIBO 4030/6030&L
FDST 4040/6040&L
FDST 4250/6250&L
FDST/EHSC/MIBO 4320/6320&L
MCHE 4650/6650
PATH/HORT/FDST 3050
POUL/FDST 4860/6860&L
STAT 4260/6260

Physical Unit Operations
Postharvest Facilities Engineering
Fundamentals of Power Engineering
Introduction to E-Mobility
Engineering Entrepreneurship
Quality Engineering
Intro to Food Science and Technology
Food Microbiology
Food Chemistry
Principles of Food Product Development
Food Safety Control Systems
HVAC Systems for Buildings & Industry
Viticulture & Enology/Med Region
Poultry Processing
Statistical Quality Assurance

Mechanical Systems

Required Courses

ELEE 3270
ENGR 2130
ENGR 2140
ENGR 4350/6350
MCHE 3300
MCHE 4300
MCHE 4340

Electronics I
Dynamics
Strength of Materials
Intro to Finite Element Analysis
Machine Design I
Mechanical Systems
Machine Hydraulics

Elective Courses

AENG 3540
CVLE 3460L
CVLE 3470L
CVLE 3610
CVLE/MCHE/LAND 4660/6660
ELEE 4210/6210
ELEE 4220/6220
ELEE 4230/6230
ENGR 3620
ENGR 4490/6490
ENGR 4545
ENGR 4670/6670
ENVE 4470/6470
MCHE 3150
MCHE 4390
MCHE 4500/6500
MCHE 4530/6530
MCHE 4650/6650

Physical Unit Operations
Civil Engr. Hydraulics Lab (1 hour)
Civil Engr. Structural Lab (1 hour)
Structural Design
Sustainable Building Design
Linear Systems
Feedback Control Systems
Sensors & Transducers
Introduction to E-Mobility
Renewable Energy Engineering
Engineering Entrepreneurship
Quality Engineering
Environmental Engr. Unit Operations
Engineering Thermodynamics II
Mechanical Vibration
Advanced Thermal Fluid Systems
Combustion and Flames
HVAC Systems for Buildings & Industry

Natural Resources Engineering

Required Courses

CVLE 3420
CVLE 3440
ENGR 2140
ENVE 4435/6435
ENVE 4470/6470
ENVE 4710

WASR/CRSS/ECOL/ENGR/GEOG/
GEOL 4700L/6700L

Intro to Soil Mechanics
Hydraulics of Closed Conduit Flow
Strength of Materials
Natural Resources Engr.
Env. Engr. Unit Operations
GIS for Urban Engineering,
Planning, Development
Hydrology, Geology and Soils
of Georgia

Elective Courses

AENG 4130
AENG 4150/6150
AENG/CVLE 4170
AENG/CVLE 4180
CRSS/FANR 3060&L
CRSS 4600/6600

CVLE 2210

CVLE 3450L
CVLE 3460L
CVLE 3610
CVLE/MCHE/LAND 4660/6660
ELEE 4230/6230
ENGR/ATSC/GEOG4161&L/6161&L
ENGR 3620
ENGR 4490/6490
ENGR 4545
ENVE 4410/6410
MCHE 4650/6650
WASR 4500/6500

Precision Farming Controls & Sensors
Environmental Biophysics
Wind and Water Erosion Prediction
Irrigation Systems Design
Soils & Hydrology
Soil Physics

Surveying and Geomatics

Civil Engr. Soils Lab (1 hour)
Civil Engr. Hydraulics Lab (1 hour)
Structural Design
Sustainable Building Design
Sensors & Transducers
Environmental Microclimatology
Introduction to E-Mobility
Renewable Energy Engineering
Engineering Entrepreneurship
Open Channel Hydraulics
HVAC Systems for Buildings & Industry
Quantitative Methods in Hydrology

Structural Systems

Required Courses

CVLE 3420
CVLE 3610
CVLE 4530
CVLE 4610
CVLE/MCHE/LAND 4660/6660
ENGR 2140
MCHE 4650/6650

Intro to Soil Mechanics
Structural Design
Design/Reinforced Concrete
Design/Light Steel Structures
Sustainable Building Design
Strength of Materials
HVAC Systems for Buildings &
Industry

Elective Courses

CVLE 3440
CVLE 3450L
CVLE 3470L
CVLE 3730
CVLE 4330/6330
CVLE 4450
CVLE 4720

ENGR 3620
ENGR 4350/6350
ENGR 4545
ENVE 4435/6435
ENVE 4450/6450
ENVE 4470/6470
ENVE 4710

MCHE 3300

Hydraulics of Closed Conduit Flow
Civil Engr. Soils Lab (1 hour)
Civil Engr. Structural Lab (1 hour)
Civil Engineering Project Management
Advanced Structural Analysis
Geotechnical Structures
Design/Residential Structures

Introduction to E-Mobility
Introduction to Finite Element Analysis
Engineering Entrepreneurship
Natural Resources Engineering
Engineering Hydrology and Hydraulics
Environmental Engr. Unit Operations
GIS for Urban Engineering, Planning,
Development
Machine Design I