BIOLOGICAL AND AGRICULTURAL ENGINEERING - BS, AGRICULTURAL ENGINEERING TRACK

Agricultural engineers apply their knowledge of physical sciences, mathematics, engineering principles and engineering design to the production and processing of food and fiber, to agricultural systems and processes, and to machine systems that interface with all of these.

Because of their broad general engineering background, agricultural engineering graduates are sought by a wide variety of employers including equipment manufacturers, crop storage and handling industries, the cotton and forest products industries, food and feed processing industries, animal production industries, electric utility companies, and governmental agencies. Agricultural engineers make significant contributions to meeting many basic needs of society such as ensuring sustainable food production and harvesting and advancing manufacturing/processing technology.

Program Requirements

First Year		
Fall		
CHEM 107	General Chemistry for Engineering Students [1]	3
CHEM 117	General Chemistry for Engineering Students Laboratory [1]	1
ENGR 102	Engineering Lab I - Computation [1]	2
ENGL 104	Composition and Rhetoric [1]	3
MATH 151	Engineering Mathematics I [1,2]	4
American history (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) [3]		3
	Semester Credit Hours	**16**
Spring		
ENGL 210	Technical and Professional Writing	3
ENGR 216/ PHYS 216	Experimental Physics and Engineering Lab II - Mechanics [1]	2
MATH 152	Engineering Mathematics II [1]	4
PHYS 206	Newtonian Mechanics for Engineering and Science [1]	3
POLS 206	American National Government	3
	Semester Credit Hours	**15**
Second Year		
Fall		
BAEN 201	Analysis of Biological and Agricultural Engineering Problems [1]	3
BIOL 113	Essentials in Biology [1]	3
ENGR 217/ PHYS 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism [1]	2
MATH 251	Engineering Mathematics III [1]	3
MEEN 221	Statics and Particle Dynamics [1]	3
PHYS 207	Electricity and Magnetism for Engineering and Science [1]	3
	Semester Credit Hours	**17**
Spring		
BAEN 301	Biological and Agricultural Engineering Fundamentals I [1]	3
BAEN 320	Engineering Thermodynamics [1]	3
CVEN 305	Mechanics of Materials [1]	3
MATH 308	Differential Equations [1]	3
MSEN 222/ MEEN 222	Materials Science [1]	3
POLS 207	State and Local Government	3
	Semester Credit Hours	**18**
Third Year		
Fall		
BAEN 340	Fluid Mechanics [1]	3
BAEN 354	Engineering Properties of Biological Materials [1]	3
BAEN 375	Design Fundamentals for Agricultural Machines and Structures [1]	3
ECEN 215	Principles of Electrical Engineering [1]	3
SCSC 301	Soil Science [1]	4
	Semester Credit Hours	**16**
Spring		
BAEN 365	Unit Operations for Biological and Agricultural Engineering [1]	3
BAEN 366	Transport Processes in Biological Systems [1]	3
BAEN 370	Measurement and Control of Biological Systems and Agricultural Processes [1]	3
BAEN 460	Principles of Environmental Hydrology [1]	3
Mathematics elective [1,4]		3
	Semester Credit Hours	**15**
Fourth Year		
Fall		
BAEN 399	Professional Development [5]	0
BAEN 479	Biological and Agricultural Engineering Design I [1,6]	3
Language, philosophy and culture (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) [3]		3
Social and behavioral sciences (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences) [3]		3
Biological and agricultural engineering elective [1,7]		3
Engineering elective [1,8]		3
	Semester Credit Hours	**15**
Spring		
BAEN 412	Hydraulic Power [1]	3
BAEN 480	Biological and Agricultural Engineering Design II [1,6]	3

American history (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) [3]	3
Creative arts (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) [3]	3
Technical elective [1,9]	3
Semester Credit Hours	**15**
Total Semester Credit Hours	**127**

1. Must make a grade of C or better.
2. Entering students will normally be given a placement test in mathematics. Test results will be used in selecting the appropriate starting course which may be at a higher or lower level.
3. The three hours of international and cultural diversity (https://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/) and three hours of cultural discourse (https://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/) courses, as required for graduation, may be met by courses that also satisfy a core curriculum course.
4. Select from CHEN 320; CVEN 302; MATH 304, MATH 417; MEEN 357; STAT 211.
5. All engineering students are required to complete a high-impact experience in order to graduate. The list of possible high-impact experiences is available in the BAEN advising office.
6. All undergraduate students must take at least two (2) specific courses in their major designated as writing intensive.
7. Select from BAEN 400-478 (https://catalog.tamu.edu/undergraduate/course-descriptions/baen/), BAEN 485, BAEN 489.
8. Select from BAEN 400- 478, BAEN 485, BAEN 489; CHEN 451, CHEN 455/SENG 455, CHEN 460/SENG 460; CVEN 301/EVEN 301, CVEN 303, CVEN 336, CVEN 339/EVEN 339, CVEN 402/EVEN 402, CVEN 450, CVEN 455, CVEN 458/EVEN 458, CVEN 462/EVEN 462; MEEN 363, MEEN 364, MEEN 441, MEEN 442, MEEN 444, MEEN 460; MTDE 333; SENG 310, SENG 312, SENG 321; Other courses may be approved by request to the advising office.
9. Select from AGSM 473, ANSC 307, ANSC 320, ANSC 326/FSTC 326, ANSC 327/FSTC 327; BESC 320, BESC 357, BESC 367, BESC 401, BESC 402, BESC 403; BIOL 349, BIOL 351; ECCB 351, ECCB 407, ECCB 444; FSTC 305, FSTC 312, FSTC 313, FSTC 457/ANSC 457, FSTC 470/ANSC 470, FSTC 487/ANSC 487; GEOG 390; GEOL 410; MMET 307; NUTR 410/FSTC 410; POSC 309, POSC 326, POSC 406, POSC 427; SCSC 301, SCSC 311, SCSC 405. Other courses may be approved by request to the advising office.