

# BIOLOGICAL AND AGRICULTURAL ENGINEERING - BS

## Program Requirements

### First Year

Fall		Semester Credit Hours
CHEM 107	General Chemistry for Engineering Students	3
CHEM 117	General Chemistry for Engineering Students Laboratory	1
ENGL 104	Composition and Rhetoric	3
ENGR 102	Engineering Lab I - Computation	2
MATH 151	Engineering Mathematics I <sup>1</sup>	4
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>16</b>

Spring		Semester Credit Hours
ENGL 210	Technical and Professional Writing	3
ENGR 216/ PHYS 216	Experimental Physics and Engineering Lab II - Mechanics	2
MATH 152	Engineering Mathematics II	4
PHYS 206	Newtonian Mechanics for Engineering and Science	3
POLS 206	American National Government	3
<b>Semester Credit Hours</b>		<b>15</b>

### Second Year

Fall		Semester Credit Hours
BAEN 201	Analysis of Biological and Agricultural Engineering Problems	3
BIOL 111	Introductory Biology I	4
ENGR 217/ PHYS 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism	2
MATH 251	Engineering Mathematics III	3
MEEN 221	Statics and Particle Dynamics	3
PHYS 207	Electricity and Magnetism for Engineering and Science	3
<b>Semester Credit Hours</b>		<b>18</b>

Spring		Semester Credit Hours
BAEN 301	Biological and Agricultural Engineering Fundamentals I	3
BAEN 320	Engineering Thermodynamics	3
CHEM 222	Elements of Organic and Biological Chemistry	3
CVEN 305	Mechanics of Materials	3
MATH 308	Differential Equations	3
MEEN 222/ MSEN 222	Materials Science	3
<b>Semester Credit Hours</b>		<b>18</b>

### Third Year

Fall		Semester Credit Hours
BAEN 302	Biological and Agricultural Engineering Fundamentals II <sup>3</sup>	3
BAEN 340	Fluid Mechanics	3
BAEN 354	Engineering Properties of Biological Materials	3
BAEN 375	Design Fundamentals for Agricultural Machines and Structures	3
ECEN 215	Principles of Electrical Engineering	3
<b>Semester Credit Hours</b>		<b>15</b>

### Spring

BAEN 365	Unit Operations for Biological and Agricultural Engineering	3
BAEN 366	Transport Processes in Biological Systems	3
BAEN 370	Measurement and Control of Biological Systems and Agricultural Processes	3
POLS 207	State and Local Government	3
Mathematics elective <sup>4</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### Fourth Year

Fall		Semester Credit Hours
BAEN 399	Professional Development <sup>5</sup>	0
BAEN 479	Biological and Agricultural Engineering Design I	3
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> ) <sup>2</sup>		3
Social and behavioral sciences ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences</a> ) <sup>2</sup>		3
BAEN elective <sup>6</sup>		3
ENGR elective <sup>7</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

Spring		Semester Credit Hours
BAEN 480	Biological and Agricultural Engineering Design II <sup>3</sup>	3
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>2</sup>		3
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> ) <sup>2</sup>		3
BAEN elective <sup>6</sup>		3
Technical elective <sup>8</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>
<b>Total Semester Credit Hours</b>		<b>127</b>

<sup>1</sup> 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.

<sup>2</sup> The three hours of international and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>) and three hours of cultural discourse (<http://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.

<sup>3</sup> All undergraduate students must take at least two (2) specific courses in their major designated as writing intensive.

<sup>4</sup> Select from CHEN 320; CVEN 302; MATH 304, MATH 417; MEEN 357; STAT 211.

<sup>5</sup> 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.

<sup>6</sup> Select from BAEN 400-478 (<http://catalog.tamu.edu/undergraduate/course-descriptions/baen/>), BAEN 485, BAEN 489.

<sup>7</sup> Select from BAEN 400-478 (<http://catalog.tamu.edu/undergraduate/course-descriptions/baen/>), 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.

<sup>8</sup> 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 351, BIOL 451; 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.

A grade of C or better is required for all math, science, and engineering courses.