Dual Degree -- Biological Engineering/Biochemistry

Credit Hours Required for Graduation: 169

Freshman Year

First Semester				Second Semester			
0.5	AGR	11100	Introduction to Agricultural and Biological Engineering (recommended)	4	CHM	11600	General Chemistry II
4	CHM	11500	General Chemistry I	3	COM	11400	Fundamentals of Speech Communications
4	ENGL	10600	English Composition I	2	ENGR	19500	Transforming Ideas to Innovation II
2	ENGR	19500	Transforming Ideas to Innovation I	4	MA	16600	Plane Analytic Geometry & Calculus II
4	MA	16500	Plane Analytic Geometry & Calculus I	4	PHYS	17200	Modern Mechanics
3			HUM SS Elective				
17				17			

Sophomore Year

Third Semester				Fourth Semester			
4	ABE	20100	Thermodynamics of Biological Systems I	3	ABE	20200	Thermodynamics of Biological Systems II
1	ABE	29000	Sophomore Seminar	3	BCHM	22100	Analytical Biochemistry
2	BIOL	12100	Biology I: Diversity, Ecology, & Behavior	2	BIOL	13100	Biology II: Dev., Structure, & Function of Organisms
4	MA	26100	Multivariate Calculus	3	MA	26500	Linear Algebra
3	PHYS	24100	Electricity and Optics	3	MA	26600	Ordinary Differential Equations
3			HUM SS Elective	3			Engineering Elective
17				17			

Junior Year

Fifth Semester				Sixth Semester			
3	ABE	30300	Physical Properties of Biological Materials	1	BCHM	29000	Experimental Design Seminar
3	BIOL	23100	Biology III: Cell Struct. & Function	3	BCHM	36100	Molecules
2	BIOL	23200	Lab.in Biology III: Cell Struct. & Function	3	BIOL	24100	Biology IV: Genetics & Molecular Biology
3	CHE	37700	Momentum Transfer	2	BIOL	24200	Laboratory in Biology IV: Genetics & Molecular Biology
3	CHM	26100	Organic Chemistry	3	CHM	26200	Organic Chemistry
1	CHM	26300	Organic Chemistry Lab	1	CHM	26400	Organic Chemistry Lab
3			HUM SS Elective	3	CHE	37800	Heat and Mass Transfer
18				16			

Senior Year

Seventh Semester				Eighth Semester			
3	ABE	31000	Thermodynamics of Food & Biol Systems	3	ABE	37000	Biological/Microbial Kinetics & Reaction Engr
2	BCHM	32200	Analytical Biochemistry	4	ABE	45400	Transport Processes in Biological & Food
3	BCHM	46200	Metabolism	4	CHM	37200	Physical Chemistry
3			Engineering Elective (IE 343 recommended)	3	CHE	32000	Statistical Modeling and Quality Control
6			HUM SS Elective	3			HUM SS Elective
17				17			

Senior Year (Fifth Year)

Ninth Semester				Tenth Semester			
1	ABE	49000	Professional Practice in Ag & Bio Engineering	3	ABE	46000	Sensors and Process Control
4	ABE	55500	Biological & Food Processing Unit Operations	4	ABE	55600	Biological and Food Process Design
3	BCHM	46300	Macromolecular Machines	3	ABE	58000	Bioprocess Engineering-Renewable Resources
1	BCHM	49800	Undergraduate Thesis	1	BCHM	49000	Undergraduate Seminar
3	BIOL	43800	General Microbiology	2	BCHM	49800	Undergraduate Thesis
6			HUM SS Elective	2	BCHM	56500	Biochemistry of Life Processes
18				15			

You need to meet with Sherry Pogranichniy in Biochemistry by the third semester.
A list of College of Engineering approved HUM-SS courses, College of Ag International Understanding Electives and Multicultural Awareness courses are available in Room 201 in Agricultural and Biological Engineering. ABE and BCHM may have different requirements for HUM/SS, International Understanding and Multicultural Awareness courses.

1-5-11