Name: _____ Exp. Grad.: Fall _____ / Spring _____

Biomaterials Engineering
Curriculum by Semester
(For students entering Fall 2018 – Spring 2019)

Semester 1		***Semester 2***		***Semester 3***		***Semester 4***	
Course (cr. hr.)	***X***	***Course (cr. hr.)***	***X***	***Course (cr. hr.)***	***X***	***Course (cr. hr.)***	***X***
CHEM 105 (4)		BIOL 150 (4)		CEMS 214 (3)		BIOL 211 (4)	
ENGL 101 (4)*		CHEM 106 (4)		ENGR 110 (4)		CEMS 215 (3)	
ENGR 101 (2)		ENGR 104 (2)		ENGR 360 (0)		CEMS 216 (3)	
ENGR 102 (2)		ENGR 11x** (1)		MATH 253 (4)		CEMS 235 (4)	
ENGR 160 (0)		ENGR 11x** (1)		PHYS 125 (4)		ENGR 360 (0)	
MATH 151 (4)		ENGR 160 (0)		Hum/SS/Arts (4)		MATH 271 (3)	
Hum/SS/Arts (4)		MATH 152 (4)					
Total (16)		**Total (16)**		**Total (19)**		**Total (17)**	

* If required; does not count towards graduation. ** Select from ENGR 111-116 ENGR Exploration Labs.

Semester 5		***Semester 6***		***Semester 7***		***Semester 8***	
Course (cr. hr.)	***X***	***Course (cr. hr.)***	***X***	***Course (cr. hr.)***	***X***	***Course (cr. hr.)***	***X***
BIOL 402 (4)		CEMS 251 (3)		BIOL 307 (4) ++		BIOL Elective (4)	
CEMS 347 (2)		CEMS 334 (3)		CEMS 336 (3)		BIOL Elective (4)	
CEMS 349 (2)		CEMS 466 (3)++		CEMS 465 (4)		ENGR 360 (0)	
CEMS 368 (3)		CHEM 310 (3)		CEMS 468 (3)		ENGR 480 (2)	
ENGR 306 (2)		ENGR 305 (3) ***or*** BIOL 226 (4)		ENGR 360 (0)		Tech Elective (3)	
ENGR 360 (0)		ENGR 360 (0)		ENGR 480 (2)		Hum/SS/Arts (4)	
Hum/SS/Arts (4)		ENGR 395 (2)		Tech Elective (3)			
Total (17)		**Total (14-18)**		**Total (15-19)**		**Total (17)**	

++ Take CEMS 466 (3) ***OR*** BIOL 307 (4) **Total Credits: 134-136**

Additional Requirements:

1. AU Global Perspective
2. AU Physical Education Requirement
3. SOE Minimum Credit Requirement: At least 128 credits, excluding physical education
4. SOE GPA requirement and 'D' policy
5. SOE Written Communication Requirement: Typically ENGL 101 and ENGR 110. Some students may be exempt from ENGL 101, which does not count towards the minimum credits required for graduation.
6. SOE Humanities/Social Science/Arts Requirement

Current SOE requirements

Degree Evaluation

Definitions of Electives:
BIOL Electives: BIOL 302, BIOL 307, BIOL 308, BIOL 420, BIOL 422
Technical Electives: (1) Most 300- and 400-level courses designated CEMS, CHEM, ENGR, MATH, MECH, PHYS, or RNEW. Exceptions include MATH 331 and some special topic courses. (2) FIN 348 **OR** MGMT 328 qualifies as a technical elective.

Revised: 06/12/2018

Name: _____ Exp. Grad.: Fall _____ / Spring _____

Biomaterials Engineering (BME) Progress toward Degree (1/2)

(For students entering Fall 2018 – Spring 2019)

Directions: Before submitting an ***Application for Graduation*** to the Registrar's Office, students should complete this ***Progress toward Degree Form*** in consultation with their advisor.

Written Communication Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
ENGL 101 or equivalent	0		
ENGR 110 – Technical Communications	4		
Written Communication Total	**4**		

Humanities / Social Science / Arts Requirement	Substitution/Waiver/Transfer & Institution, if not AU	Designation A,B,C,D,E, II	Cr. Hrs. or IP*
Total Hum/SS/ Arts (≥ 16 cr. hrs.)			

Humanities/Social Science/Arts Additional Requirement	Check if met (X)
At least 16 credits (excluding ENGL 101 and ENGR 110)	
At least 3 Designated Areas	
No more than 4 credit hours of Arts counting towards 16 credits	

Mathematics Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
MATH 151 – Calculus I	4		
MATH 152 – Calculus II	4		
MATH 253 – Calculus III	4		
MATH 271 – Differential Equations	3		
ENGR 305 **or** BIOL 226 – Engineering Statistics **or** Biostatistics	3-4		
Mathematics Total	**18-19**		

Chemistry Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
CHEM 105 – General Chemistry I	4		
CHEM 106 – General Chemistry II	4		
CHEM 310 – Basic Organic Chemistry	3		
Chemistry Total	**11**		

Physics Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
PHYS 125 – Physics I	4		
Physics Total	**4**		

**Enter number of credit hours completed or IP=In progress*

Revised: 06/12/2018

Name: _____ Exp. Grad.: Fall _____ / Spring _____

Biomaterials Engineering (BME) Progress toward Degree (2/2)

(For students entering Fall 2018 – Spring 2019)

Biology Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
BIOL 150 – Biological Foundations	4		
BIOL 211 – Cell Biology	4		
BIOL 402 – Immunology	4		
BIOL Elective	4		
BIOL Elective	4		
Biology Total	**20**		

Basic Engineering Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
ENGR 101 – Introduction to Engineering	2		
ENGR 102 – Computer Aided Design	2		
ENGR 104 – Computer Aided Engineering	2		
ENGR 111-116 (pick 2) – Explorations	2		
Basic Engineering Total	**8**		

Biomaterials Engineering Requirement	Req. Cr. hrs.	Substitution/Waiver/Transfer & Institution, if not AU	Cr. Hrs. or IP*
CEMS 214 – Structure & Properties of Materials	3		
CEMS 215 – Microscopy & Microstructural Characterization	3		
CEMS 216 – Bonding & Structure of Materials	3		
CEMS 235 – Thermodynamics of Materials	4		
CEMS 251 – Mechanics of Materials	3		
CEMS 334 – Introduction to Polymers	3		
CEMS 336 – Physical Metallurgy I	3		
CEMS 347 – Spectroscopy	2		
CEMS 349 – X-ray Characterization	2		
CEMS 368 – Introduction to Bioengineering	3		
CEMS 465 – Biocompatibility	4		
CEMS 466 **or** BIOL 307 – Skeletal Tissue **or** Anatomy & Physiology: Nerves, Muscles, Skeleton	3-4		
CEMS 468 – Biomedical Materials	3		
ENGR 306 – Engineering Economics	2		
ENGR 395 – Engineering Design	2		
ENGR 480 – Senior Capstone Individual Project	2		
ENGR 480 – Senior Capstone Individual Project	2		
Technical Elective I	3		
Technical Elective II	3		
Biomaterials Engineering Total	**53-54**		

Additional Requirements	Substitution/ waivers, if any	Check if Met (X)
Engineering seminar		
Global Perspective		
ENGR GPA and "D" Policy	N/A	
Physical Education / Wellness I		
Physical Education / Wellness II		
Total Eligible Credits ≥ 134	**(excluding ENGL 101 & Phys. Ed. Credits)**	

**Enter number of credit hours completed or IP=In progress*

Revised: 06/12/2018