

**Biomedical Engineering and Chemical Biological Engineering**

Name: \_\_\_\_\_

**Honors Track 2 Curriculum Checksheet - Effective FA18 and after**

**Program Total Credits = 163**

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR	COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
<b>1<sup>st</sup> Year Fall</b>				<b>1<sup>st</sup> Year Spring</b>			
CHEM 111	General Chemistry I (MATH 118 or 127 or 141 or 155 or 160 or 161 or 229 or 261)	F, S, SS	4	CBE 101A	Intro to Chemical and Biological Engr: Lecture (CBE 160/conc)	F, S	2
CHEM 112	General Chemistry Lab I (CHEM 111/conc or CHEM 117/conc)	F, S, SS	1	CBE 101B	Intro to Chemical and Biological Engr: Lab (CBE 101A/conc)	F, S	1
HONR 192	Honors First Year Seminar	F, S	4	CBE 160	MATLAB for Chemical and Biological Engineers	F, S	1
LIFE 102	Attributes of Living Systems	F, S, SS	4	CHEM 113	General Chemistry II ((CHEM 107 or 111 or 117); (MATH 124 or 127 or 141/conc or 155/conc or 160/conc or 161/conc or 229/conc or 261/conc))	F, S, SS	3
MATH 160	Calculus for Physical Scientists I ( <b>All require a B or better: MATH 124; (MATH 126 or 127)</b> )	F, S, SS	4	CHEM 114	General Chemistry Lab II (CHEM 113/conc; (CHEM 108 or 112))	F, S, SS	1
				MATH 161	Calc for Physical Scientists II ((MATH 124 or 127); (MATH 159 or 160))	F, S, SS	4
				PH 141	Physics for Scientists and Engineers I (MATH 159/conc or MATH 160/conc or (MATH 126/conc; MATH 155/conc) or (MATH 127/conc; MATH 155/conc))	F, S, SS	5
			<b>Total 17</b>				<b>Total 17</b>
<b>2nd Year Fall</b>				<b>2nd Year Spring</b>			
BIOM 100	Overview of Biomedical Engineering	F	1	<b>CBE 210</b>	Thermodynamic Process Analysis ( <b>CBE 201</b> ; MATH 261/conc)	S	3
<b>CBE 201</b>	Material and Energy Balances ((CBE 101 or CBE 101A or CBE 160/conc or MATH 151/conc); (LIFE 102/conc; CHEM 111; PH 141/conc))	F	3	CHEM 343	Modern organic Chemistry II ( <b>All require a C- or better: CHEM 241 or 245 or 341 or 345</b> )	F, S, SS	3
<b>CBE 205</b>	Fundamentals of Biological Engineering ((CBE 101 or 101A); (CBE 160; LIFE 102))	F	3	CHEM 344	Modern organic Chemistry Lab (CHEM 114; CHEM 343/conc)	F, S, SS	2
<b>CHEM 341</b>	Modern Organic Chemistry I (CHEM 113)	F, S, SS	3	MATH 340	Intro to Ordinary Differential Equations (MATH 255 or 261)	F, S, SS	4
(C- or better)				MECH 262	Engineering Mechanics (MATH 161; PH 141)	S	4
MATH 261	Calculus for Physical Scientists III (MATH 161)	F, S, SS	4				
CO 150	College Composition (CO 130 or placement by ACT or SAT or DSP Survey or Challenge Exam)	F, S, SS	3				
			<b>Total 17</b>				<b>Total 16</b>
<b>3rd Year Fall</b>				<b>3rd Year Spring</b>			
<b>CBE 310</b>	Molecular concepts and Applications ( <b>CBE 210</b> ; MATH 340)	F, S	3	BIOM 300	Problem-Based Learning BME Lab ((BIOM 101 or BIOM 200 or (BIOM 100; CBE 205; MECH 262); (MATH 340 or 345))	S	4
<b>CBE 330</b>	Process Simulation ( <b>CBE 210</b> ; MATH 340)	F	3	BMS 300	Principles of Human Physiology ((BZ 101 or 110 or LIFE 102); (CHEM 103 or 107 or 111))	F, S, SS	4
<b>CBE 331</b>	Momentum Transfer and Mechanical Separations ( <b>CBE 210</b> ; MATH 340)	F	3	<b>CBE 320</b>	Chemical and Biological Reactor Design ( <b>CBE 205; 310; 330; 332/conc</b> )	S	3
HONR 292	Honors Seminar (HONR 192)	F, S	3	<b>CBE 332</b>	Heat & Mass Transfer Fundamentals ( <b>CBE 330; 331</b> )	S	3
A, B, or C	*Check with Honors advisor for A/B/C selection			CBE 393	Professional Development Seminar	S	1
STAT 315	Intro to Theory & Practice of Stat (MATH 155 or 159 or 160)	F, S, SS	3	AUCC		F, S, SS	3
			<b>Total 15</b>				<b>Total 18</b>
<b>4th Year Fall</b>				<b>4th Year Spring</b>			
BIOM 421	Transport Phenomena in Biomedical Engineering (BMS 300; (CBE 332 or MECH 344))	F	3	BIOM 422	Quantitative Systems and Synthetic Biology (BIOM 421 or CBE 320)	S	3
<b>CBE 333</b>	Chemical & Biological Engineering Lab I (CBE 332)	F	2	CBE 430	Process Control & Instrumentation ( <b>CBE 320; 442</b> )	S	3
<b>CBE 442</b>	Separation Processes ( <b>CBE 332</b> )	F	4	CBE 443	Chemical and Biological Engineering Lab II (CBE 442)	S	2
<b>CBE 451</b>	Chemical and Biological Engineering Design I ( <b>CBE 320</b> ; CBE 442/conc)	F	3	PH 142	Physics for Scientists and Engineers II (PH 141; (MATH 161/conc or 255/conc or 271/conc))	F, S, SS	5
<b>BME BE</b>	BME Broad Elective	F, S, SS	3	Advanced Writing	CHEM 301 or CO300 or CO301B or JTC 300 or LB 300 (CO150 or HONR193, check course catalog for all prereqs)	F, S, SS	3
			<b>Total 15</b>				<b>Total 16</b>
<b>5th Year Fall</b>				<b>5th Year Spring</b>			
BIOM 486A	Biomedical Design Practicum: Capstone Design I (BIOM 300; ((BIOM 421; CBE 320; CBE 442) or (BIOM 431; ECE 311; ECE 332; ECE 342) or (BIOM 441; MECH 301A; MECH 301B/conc; MECH 307))	F	4	BIOM 486B	Biomedical Design Practicum: Capstone Design II (BIOM 486A; (PH 353 or CBE 451 or ECE 312 or (MECH 325; MECH 344))	S	4
BC 351	Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345))	F, S, SS	4	HONR 499	Senior Honors Thesis (HONR 399) -- CBE-TE	F, S, SS	3
HONR 399	Pre-Thesis - Honors	F, S	1	BME-TE	BME Technical Elective _____	F, S, SS	3
CBE-TE	CBE Technical Elective _____	F, S, SS	2	AUCC		F, S, SS	3
BME-TE	BME Technical Elective _____	F, S, SS	2	AUCC		F, S, SS	3
AUCC		F, S, SS	3				
			<b>Total 16</b>				<b>Total 16</b>

Please note that curricula can change; be sure to check with your advisors regularly to ensure you are on track.

**Track 2 Honors Program Required Courses in BLUE:**  
 \* HONR 192, 292 A, B, or C, 399, 499  
 \* 5 honors courses in major (15 credits) \*\*only 3cr 200-300 level  
[Click here to find list of honors course offerings.](#)

**AUCCs- Additional All University Core Courses (click here for list)**  
 3 credits - 3B Arts and Humanities:  
 3 credits - 3C Social/Behavioral Science:  
 3 credits - 3D Historical Perspective:  
 3 credits - EITHER 3B OR C1 Diversity Equity & Inclusion:  
 \*\*HONR 292B counts as 3B and HONR 292C counts as 1C

**Key:**  
 /conc = may be taken concurrently Term: F = Fall, S = Spring, SS = Summer Session  
 Grey indicates Biomedical Engineering courses  
 Light green indicates labs  
 Red indicates time-consuming/difficult courses  
**Must have at least a "C" in BOLDED courses**