Biomedical Engineering and Chemical Biological Engineering **Name:**

Honors Track 1 Curriculum Checksheet - Effective FA18 and after — Program Total Credits = 157

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	C
1st Year Fall			
CHEM 111	General Chemistry I (MATH 118 or 141 or 155 or 160 or 161 or 229 or 261; CHEM 105 or an appropriate score in the chemistry preparation module)	F,S, SS	4
CHEM 112^	General Chemistry Lab I (CHEM 111 or 117 or conc.)	F, S, SS	1
HONR 192	Honors First Year Seminar	F	4
LIFE 102^	Attributes of Living Systems	F, S,	4
MATH160	Calculus for Physical Scientists I (**MATH 124 and 126 (B or better)**)	F, S, SS	4
		Total	**17**
2nd Year Fall			
BIOM 100	Overview of Biomedical Engineering (BME)	F	1
CBE 201	Material and Energy Balances (CBE 101 or 160 or conc.; CHEM 111; LIFE 102 or conc.; PH 141 or conc.)	F	3
CBE 205	Intro to Biological Engr (CBE 101; CBE 160; LIFE 102)	F	3
CHEM 341	Modern Organic Chemistry I (CHEM 113)	F,S,SS	3
HONR 193	Honors Seminar (HONR 192-BME spec sec'n)	S	3
MATH 261^	Calculus for Physical Scientists III (MATH 161)	F, S, SS	4
		Total	**17**
3rd Year Fall			
CBE 310	Molecular Concepts and Applications (**CBE 210**; MATH 340)	F	3
CBE 330	Process Simulation (**CBE 210**; MATH 340)	F	3
CBE 331	Momentum Transfer and Mechanical Separations (**CBE 210**; MATH 340)	F	3
HONR 292 OR 293	Honors Seminar -- Knowing in Arts & Humanities OR -- Knowing Across Cultures (HONR 193)	F, S	3
BME BE	BME Broad Elective	F, S, SS	3
		Total	**15**
4th Year Fall			
BIOM 421	Transport Phenomena in Biomedical Engineering (BMS 300; CBE 332 or MECH 344)	F	3
CBE 333	Chemical & Biological Engineering Lab I (CBE 332)	F	2
CBE 442	Separation Processes (**CBE 332**)	F	4
CBE 451	Chemical and Biological Engineering Design I (**CBE 320**; CBE 442 or conc.)	F	3
HONR 392	Honors Seminar (HONR 193)	F, S	3
		Total	**15**
5th Year Fall			
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 301; MECH 307))	F	4
BC 351	Principles of Biochemistry (BZ 110 or 120 or LIFE 102; CHEM 245 or 341 or 345)	F, S, SS	4
BME-TE	BME Technical Elective _____	F, S, SS	2
HONR 399	Pre-Thesis - Honors	F, S	1
Advanced Writing	CHEM 301 or CO300 or CO301B or JTC 300 or LB 300 (CO150, HONR193)	F, S, SS	3
		Total	**14**

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
1st Year Spring			
CBE 101	Introduction to Chemical and Biological Engineering (CBE 160 or conc.)	F, S	3
CBE 160	MATLAB for Chemical and Biological Engineers	F, S	1
CHEM 113	General Chemistry II (CHEM 107 or 111 or 117; MATH 124 or MATH 141, 155, 160, 161, 229, 261 or conc.)	F, S, SS	3
CHEM 114^	General Chemistry Lab II (CHEM 112; CHEM 113 or conc.)	F, S, SS	1
MATH 161	Calc for Physical Scientists II (MATH 124; MATH 159 or	F, S,	4
PH 141	Physics for Scientists and Engineers I (MATH 126 or conc.; MATH 155 or 159 or 160 or conc.)	F, S, SS	5
		Total	**17**
2nd Year Spring			
CBE 210	Thermodynamic Process Analysis (**CBE 201**; MATH 261 or conc.)	S	3
CHEM 343	Modern Organic Chemistry II (CHEM 245 or 341)	F, S, SS	3
CHEM 344	Modern Organic Chemistry Lab (CHEM 245 or 341)	F, S, SS	2
MATH 340^	Intro to Ord'ry Differential Equations (MATH 255 or 261)	F, S, SS	4
MECH 262	Engineering Mechanics (MATH 161; PH 141)	S	4
		Total	**16**
3rd Year Spring			
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
BMS 300	Principles of Human Physiology (BZ 101 or 110 or LIFE 102; CHEM 103 or 107 or 111)	F, S, SS	4
CBE 320	Chemical and Biological Reactor Design (**CBE 310** & **330**)	S	3
CBE 332	Heat and Mass Transfer Fundamentals (**CBE 330** & **331**)	S	3
CBE 393	Professional Development Seminar	S	1
		Total	**15**
4th Year Spring			
BIOM 422	Quantitative Systems and Synthetic Biology (BIOM 421 or CBE 320)	S	3
CBE 430^	Process Control & Instrumentation (**CBE 320** & **442**)	S	3
CBE 443	Chemical and Biological Engineering Lab II (CBE 442)	S	2
PH 142	Physics for Scientists and Engineers II (MATH 161 or 255 or 271 or conc.; PH 141)	F, S	5
STAT 315	Statistics for Engineers and Scientists (MATH 155 or 160)	F, S, SS	3
		Total	**16**
5th Year Spring			
BIOM 486B	Biomedical Design Practicum: Capstone Design II (BIOM 486A; CBE 451 or ECE 312 or (MECH 325; MECH 344; MECH 402) or PH 353)	S	4
BME-TE	BME Technical Elective _____	F, S, SS	3
HONR 492	Honors Senior Seminar (HONR 392)	F, S	3
HONR 499	Senior Honors Thesis (HONR 399)--typically counts as CBE-TE	F, S, SS	3
CBE-TE	CBE Technical Elective _____	F, S, SS	2
		Total	**15**

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

Track 1 Honors Program Required Courses in BLUE:

Key "conc." = concurrent enrollment Term: F = Fall, S = Spring, SS = Summer Session

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* HONR 192, 193, 292 (or 293), 392, 399, 492, 499
* One 200 or 300 level honors course in major (3 credits)
* One 300 or 400 level honors course in major (3 credits)
^ Honors Sections offered in these regular classes.

Grey indicates Biomedical Engineering courses

Light green indicates labs

Red indicates exceptionally time-consuming/difficult courses

Must have at least a "C" in BOLDED courses

REV 5-5-2020