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

Curriculum Checksheet - Effective Fall 2025 And After **Program Total Credits = 157**

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
1st Year Fall			
CHEM 120	General Chemistry I (MATH 118 or 127 or 141 or 155 or 160 or 161 or 229 or 261)	F, S	4
CHEM 121	General Chemistry Lab I (CHEM 120/conc)	F, S	1
CO 150	College Composition (CO 130 or placement by ACT or SAT or DSP Survey or Challenge Exam)	F, S, SS	3
ENGR 111	Fundamentals of Engineering	F, S	3
MATH 160	Calculus for Physical Scientists I (All require a B or better: MATH 124; (MATH 126 or 127))	F, S, SS	4
		Total	**15**
2nd Year Fall			
CBE 201	Material and Energy Balances ((CBE 101A/B and CBE 160) or ENGR 114 or ENGR 123); LIFE 102/conc; (CHEM 113/conc or CHEM 120/conc); PH 141/conc)	F	3
CBE 205	Fundamentals of Biological Engineering ((CBE 101A/B and CBE 160) or ENGR 114 or ENGR 123); LIFE 102/conc; (CHEM 113/conc or CHEM 120/conc)	F	3
MATH 261	Calculus for Physical Scientists III (MATH 161)	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	F, S, SS	5
		Total	**15**
3rd Year Fall			
BC 351 or BMS 300	Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345)) 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 205; CBE 210; CBE 330/conc; MATH 340)	F, S, SS	3
CBE 330	Process Simulation (CBE 210; MATH 340)	F	3
CBE 331	Momentum Transfer and Mechanical Separations (CBE 210; MATH 340)	F	3
CBE 334	CBE Design and Experimentation II (**CBE 223**; CBE 320/conc; CBE 330/conc; CBE 332/conc)	F	1
AUCC		F, S, SS	3
		Total	**17**
4th Year Fall			
BIOM 422	Quantitative Systems and Synthetic Biology (CBE 320)	F	3
CBE 442	Separation Processes (CBE 332)	F	4
CBE 443	Chemical and Biological Engineering Lab II (CBE 442)	F	2
CBE 451	Chemical and Biological Engineering Design I (CBE 320; CBE 442/conc)	F	3
BME BE	BME Broad Elective _____	F, S, SS	3
AUCC		F, S, SS	3
		Total	**18**
5th Year Fall			
BIOM 486A	Biomedical Design Practicum: Capstone Design I (BIOM 300; BIOM 422; CBE 320; CBE 442)	F	4
BMS 300 or BC 351	Principles of Human Physiology ((BZ 101 or 110 or LIFE 102); (CHEM 103 or 107 or 111)) Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345))	F, S, SS	4
BME-TE	BME Technical Elective _____	F, S, SS	3
CBE-TE	CBE Technical Elective _____	F, S, SS	2
AUCC		F, S, SS	3
		Total	**16**

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
1st Year Spring			
ENGR 114	Engineering for Grand Challenges (ENGR 111 or MECH 104A or CBE 104A or CIVE 182A)	F, S	3
LIFE 102	Attributes of Living Systems	F, S, SS	4
MATH 161	Calc for Physical Scientists II ((MATH 124 or 127); (MATH 159 or 160))	F, S, SS	4
AUCC		F, S, SS	3
		Total	**14**
2nd Year Spring			
CBE 210	Thermodynamic Process Analysis (CBE 201; MATH 261/conc)	S	3
CBE 223	CBE Design and Experimentation I (**CBE 201; CBE 205; CBE 210/conc**)	S	2
CHEM 241	Foundations of Organic Chemistry (CHEM 120)	F, S	4
CHEM 242	Foundations of Organic Chemistry Lab (CHEM 121; CHEM 241/conc)	F, S	1
MATH 340	Intro to ordinary Differential Equations (MATH 255 or 261)	F, S, SS	4
CBE 393	Professional Development Seminar	S	1
		Total	**15**
3rd Year Spring			
BIOM 300	Problem-Based Learning BME Lab (BIOM 200 or (CBE 205; MECH 262/conc)); (MATH 340 or 345))	S	4
CBE 332	Heat & Mass Transfer Fundamentals (CBE 330; 331)	S	3
CBE 335	CBE Design and Experimentation III (**CBE 334**; CBE 340/conc; CBE 332/conc)	S	1
CBE 340	Data Science for CBE Applications - Statistics (CBE 330/conc)	S	3
MECH 262	Engineering Mechanics (MATH 161; PH 141)	S	4
		Total	**15**
4th Year Spring			
BIOM 440	Computational Statistics for Bioengineering (BIOM 422; CBE 320; (STAT 315 or CBE 340))	S	3
CBE 430	Process Control & Instrumentation (CBE 320; 442)	S	3
PH 142	Physics for Scientists and Engineers II (PH 141; (MATH 161/conc or 255/conc or 271/conc))	F, S, SS	5
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
Chemistry Elective	Chemistry Elective _____		3
		Total	**17**
5th Year Spring			
BIOM 486B	Biomedical Design Practicum: Capstone Design II (BIOM 486A; CBE 451)	S	4
BME-TE	BME Technical Elective _____	F, S, SS	2
CBE-TE	CBE Technical Elective _____	F, S, SS	3
Chemistry Elective	Chemistry Elective _____		3
AUCC		F, S, SS	3
		Total	**15**

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

AUCCs- Additional All University Core Courses (click here for list)
3 credits - 1C Diversity, Equity, and Inclusion:
6 credits - 3B Arts and Humanities: _____ _____
3 credits - 3C Social/Behavioral Science:
3 credits - 3D Historical Perspective:

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

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

Honors Track 1 Curriculum Checksheet - Effective Fall 2025 And After — Program Total Credits = 159

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
1st Year Fall			
CHEM 120	General Chemistry I (MATH 118 or 127 or 141 or 155 or 160 or 161 or 229 or 261)	F, S	4
CHEM 121	General Chemistry Lab I (CHEM 120/conc)	F, S	1
ENGR 111	Fundamentals of Engineering	F, S	3
HONR 192	Honors First Year Seminar	F, S	4
MATH 160	Calculus for Physical Scientists I (All require a B or better: MATH 124; (MATH 126 or 127))	F, S, SS	4
		Total	**16**
1st Year Spring			
ENGR 114	Engineering for Grand Challenges (ENGR 111 or MECH 104A or CBE 104A or CIVE 182A)	F, S	3
HONR 193	Honors Seminar (HONR 192)	F, S	3
LIFE 102	Attributes of Living Systems	F, S, SS	4
MATH 161	Calc for Physical Scientists II ((MATH 124 or 127); (MATH 159 or 160))	F, S, SS	4
		Total	**14**
2nd Year Fall			
CBE 201	Material and Energy Balances ((CBE 101A/B and CBE 160) or ENGR 114 or ENGR 123); LIFE 102/conc; (CHEM 113/conc or CHEM 120/conc); PH 141/conc)	F	3
CBE 205	Fundamentals of Biological Engineering ((CBE 101A/B and CBE 160) or ENGR 114 or ENGR 123); LIFE 102/conc; (CHEM 113/conc or CHEM 120/conc)	F	3
MATH 261	Calculus for Physical Scientists III (MATH 161)	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	F, S, SS	5
		Total	**15**
2nd Year Spring			
CBE 210	Thermodynamic Process Analysis (CBE 201; MATH 261/conc)	S	3
CBE 223	CBE Design and Experimentation I (**CBE 201; CBE 205; CBE 210/conc**)	S	2
CHEM 241	Foundations of Organic Chemistry (CHEM 120)	F, S	4
CHEM 242	Foundations of Organic Chemistry Lab (CHEM 121; CHEM 241/conc)	F, S	1
HONR 292 A, B, or C	Honors Seminar (HONR 192; 193) *HONR 292B is recommended to fulfill AUCC 3B	F, S	3
MATH 340	Intro to ordinary Differential Equations (MATH 255 or 261)	F, S, SS	4
		Total	**17**
3rd Year Fall			
BC 351 or BMS 300	Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345)) 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 205; CBE 210; CBE 330/conc; MATH 340)	F, S, SS	3
CBE 330	Process Simulation (CBE 210; MATH 340)	F	3
CBE 331	Momentum Transfer and Mechanical Separations (CBE 210; MATH 340)	F	3
CBE 334	CBE Design and Experimentation II (**CBE 223**; CBE 320/conc; CBE 330/conc; CBE 332/conc)	F	1
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
		Total	**17**
3rd Year Spring			
BIOM 300	Problem-Based Learning BME Lab (BIOM 200 or (CBE 205; MECH 262/conc)); (MATH 340 or 345))	S	4
CBE 332	Heat & Mass Transfer Fundamentals (CBE 330; 331)	S	3
CBE 335	CBE Design and Experimentation III (**CBE 334**; CBE 340/conc; CBE 332/conc)	S	1
CBE 340	Data Science for CBE Applications - Statistics (CBE 330/conc)	S	3
CBE 393	Professional Development Seminar	S	1
MECH 262	Engineering Mechanics (MATH 161; PH 141)	S	4
		Total	**16**
4th Year Fall			
BIOM 422	Quantitative Systems and Synthetic Biology (CBE 320)	F	3
CBE 442	Separation Processes (CBE 332)	F	4
CBE 443	Chemical and Biological Engineering Lab II (CBE 442)	F	2
CBE 451	Chemical and Biological Engineering Design I (CBE 320; CBE 442/conc)	F	3
BME BE	BME Broad Elective _____	F, S, SS	3
		Total	**15**
4th Year Spring			
BIOM 440	Computational Statistics for Bioengineering (BIOM 422; CBE 320; (STAT 315 or CBE 340))	S	3
CBE 430	Process Control & Instrumentation (CBE 320; 442)	S	3
HONR 392	Honors Seminar (HONR 193)	F, S	3
PH 142	Physics for Scientists and Engineers II (PH 141; (MATH 161/conc or 255/conc or 271/conc))	F, S, SS	5
Chemistry Elective	Chemistry Elective _____		3
		Total	**17**
5th Year Fall			
BIOM 486A	Biomedical Design Practicum: Capstone Design I (BIOM 300; BIOM 422; CBE 320; CBE 442)	F	4
BMS 300 or BC 351	Principles of Human Physiology ((BZ 101 or 110 or LIFE 102); (CHEM 103 or 107 or 111)) Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345))	F, S, SS	4
HONR 492	Honors Senior Seminar (HONR 392)	F, S	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
		Total	**17**
5th Year Spring			
BIOM 486B	Biomedical Design Practicum: Capstone Design II (BIOM 486A; CBE 451)	S	4
HONR 499	Senior Honors Thesis (HONR 399)	F, S, SS	3
BME-TE	BME Technical Elective _____	F, S, SS	2
CBE-TE	CBE Technical Elective _____	F, S, SS	3
Chemistry Elective	Chemistry Elective _____		3
		Total	**15**

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

Track 1 Honors Program Required Courses in BLUE:

* HONR 192, 193, 292 A, B, or C, 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)

Reach out to your Honors advisor for Honors course offerings

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

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

Honors Track 2 Curriculum Checksheet - Effective Fall 2025 And After **Program Total Credits = 165**

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
1st Year Fall			
CHEM 120	General Chemistry I (MATH 118 or 127 or 141 or 155 or 160 or 161 or 229 or 261)	F, S	4
CHEM 121	General Chemistry Lab I (CHEM 120/conc)	F, S	1
ENGR 111	Fundamentals of Engineering	F, S	3
HONR 192	Honors First Year Seminar	F, S	4
MATH 160	Calculus for Physical Scientists I (All require a B or better: MATH 124; (MATH 126 or 127))	F, S, SS	4
		Total	**16**
2nd Year Fall			
CBE 201	Material and Energy Balances ((CBE 101A/B and CBE 160) or ENGR 114 or ENGR 123); LIFE 102/conc; (CHEM 113/conc or CHEM 120/conc); PH 141/conc)	F	3
CBE 205	Fundamentals of Biological Engineering ((CBE 101A/B and CBE 160) or ENGR 114 or ENGR 123); LIFE 102/conc; (CHEM 113/conc or CHEM 120/conc)	F	3
MATH 261	Calculus for Physical Scientists III (MATH 161)	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	F, S, SS	5
AUCC		F, S, SS	3
		Total	**18**
3rd Year Fall			
BC 351 or BMS 300	Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345)) 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 205; CBE 210; CBE 330/conc; MATH 340)	F, S, SS	3
CBE 330	Process Simulation (CBE 210; MATH 340)	F	3
CBE 331	Momentum Transfer and Mechanical Separations (CBE 210; MATH 340)	F	3
CBE 334	CBE Design and Experimentation II (**CBE 223**; CBE 320/conc; CBE 330/conc; CBE 332/conc)	F	1
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
		Total	**17**
4th Year Fall			
BIOM 422	Quantitative Systems and Synthetic Biology (CBE 320)	F	3
CBE 442	Separation Processes (CBE 332)	F	4
CBE 443	Chemical and Biological Engineering Lab II (CBE 442)	F	2
CBE 451	Chemical and Biological Engineering Design I (CBE 320; CBE 442/conc)	F	3
BME BE	BME Broad Elective _____	F, S, SS	3
AUCC		F, S, SS	3
		Total	**18**
5th Year Fall			
BIOM 486A	Biomedical Design Practicum: Capstone Design I (BIOM 300; BIOM 422; CBE 320; CBE 442)	F	4
BMS 300 or BC 351	Principles of Human Physiology ((BZ 101 or 110 or LIFE 102); (CHEM 103 or 107 or 111)) Principles of Biochemistry ((BZ 110 or 120 or LIFE 102); (CHEM 241 or 245 or 341 or 345))	F, S, SS	4
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
		Total	**17**

COURSE	NAME (PREREQS (";" DENOTES "AND"))	TERM	CR
1st Year Spring			
ENGR 114	Engineering for Grand Challenges (ENGR 111 or MECH 104A or CBE 104A or CIVE 182A)	F, S	3
CO 150	College Composition (CO 130 or placement by ACT or SAT or DSP Survey or Challenge Exam)	F, S, SS	3
LIFE 102	Attributes of Living Systems	F, S, SS	4
MATH 161	Calc for Physical Scientists II ((MATH 124 or 127); (MATH 159 or 160))	F, S, SS	4
		Total	**14**
2nd Year Spring			
CBE 210	Thermodynamic Process Analysis (CBE 201; MATH 261/conc)	S	3
CBE 223	CBE Design and Experimentation I (**CBE 201; CBE 205; CBE 210/conc**)	S	2
CHEM 241	Foundations of Organic Chemistry (CHEM 120)	F, S	4
CHEM 242	Foundations of Organic Chemistry Lab (CHEM 121; CHEM 241/conc)	F, S	1
HONR 292 A, B, or C	Honors Seminar (HONR 192; 193) *HONR 292B is recommended to fulfill AUCC 3B	F, S	3
MATH 340	Intro to ordinary Differential Equations (MATH 255 or 261)	F, S, SS	4
		Total	**17**
3rd Year Spring			
BIOM 300	Problem-Based Learning BME Lab (BIOM 200 or (CBE 205; MECH 262/conc)); (MATH 340 or 345))	S	4
CBE 332	Heat & Mass Transfer Fundamentals (CBE 330; 331)	S	3
CBE 335	CBE Design and Experimentation III (**CBE 334**; CBE 340/conc; CBE 332/conc)	S	1
CBE 340	Data Science for CBE Applications - Statistics (CBE 330/conc)	S	3
CBE 393	Professional Development Seminar	S	1
MECH 262	Engineering Mechanics (MATH 161; PH 141)	S	4
		Total	**16**
4th Year Spring			
BIOM 440	Computational Statistics for Bioengineering (BIOM 422; CBE 320; (STAT 315 or CBE 340))	S	3
CBE 430	Process Control & Instrumentation (CBE 320; 442)	S	3
PH 142	Physics for Scientists and Engineers II (PH 141; (MATH 161/conc or 255/conc or 271/conc))	F, S, SS	5
Chemistry Elective	Chemistry Elective _____		3
AUCC		F, S, SS	3
		Total	**17**
5th Year Spring			
BIOM 486B	Biomedical Design Practicum: Capstone Design II (BIOM 486A; CBE 451)	S	4
HONR 499	Senior Honors Thesis (HONR 399)	F, S, SS	3
BME-TE	BME Technical Elective _____	F, S, SS	2
CBE-TE	CBE Technical Elective _____	F, S, SS	3
Chemistry Elective	Chemistry Elective _____		3
		Total	**15**

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

Additional Requirements for Honors Track 2:
200 Level Honors Option in Major (3 cr): _____
300-400 Level Honors Option in Major (12 cr) : _____ _____ _____ _____
3 credits - 1C Diversity, Equity, Inclusion: _____
6 credits - 3B Arts and Humanitites: _____ _____
3 credits - 3C Social/Behavioral Science: _____
3 credits - 3D Historical Perspective: _____

Key:

/conc = may be taken concurrently Term: F = Fall, S = Spring, SS = Summer Session

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