

Biomedical Engineering and Computer Engineering
Curriculum Checksheet - Effective Fall 2023 and after

Name: _____

TOTAL PROGRAM CREDITS 157-158

| COURSE | NAME (PREREQS (";" DENOTES "AND")) | TERM | CR | COURSE | NAME (PREREQS (";" DENOTES "AND")) | TERM | CR |
|----------------------------------|--|---------------|--------------|-----------------------------------|---|----------|--------------|
| 1st Year Fall | | | | 1st Year Spring | | | |
| BIOM 100 | Overview of Biomedical Engineering | F | 1 | CS 164*[†] | CS1- Computational Thinking with Java (CS 150B* or CS 152* or CS 163) <i>See footnote for alternative options</i> | F, S | 4 |
| CO 150 | College Composition (CO 130 or placement by ACT or SAT or DSP Survey or Challenge Exam) | F, S, SS | 3 | ECE 251 | Intro to Microprocessors (ECE102) | F, S | 4 |
| CS 150B*[†] | Culture and Coding: Python (no prereqs) <i>See footnote for alternative options</i> | F, S | 3 | LIFE 102 | Attributes of Living Systems | F, S, SS | 4 |
| ECE 102 | Digital Circuit Logic | F, S | 4 | MATH 161 | Calc for Physical Scientists II ((MATH 124 or 127); (MATH 159 or 160)) | F, S, SS | 4 |
| MATH 160 | Calculus for Physical Scientists I (MATH 124* ; (MATH 126* or 127*)) | F, S, SS | 4 | | | | |
| | Total | | 15 | | | | Total |
| | | | | | | | 16 |
| 2nd Year Fall | | | | 2nd Year Spring | | | |
| BIOM 200 | Fundamentals of Biomedical Engineering (BIOM 100/conc; LIFE 102; MATH 160) | F | 2 | ECE 202 | Circuit Theory Applications (ECE 103; MATH 161) | S, SS | 4 |
| CS 165 | (CS2) Data Structures (CS 162 or 163 or 164 or CIS 340) | F, S | 4 | ECE 232 | Introduction to Project Practices (ECE 202/conc or ECE 395B/conc or ECE 495B/conc) | F, S | 1 |
| ECE 103 | DC Circuit Analysis (MATH 159 or 160) | F, S | 3 | ECE/STAT 303 | Introduction to Communications Principles (MATH 261; MATH 340/conc) | S | 3 |
| MATH 261 | Calculus for Physical Scientists III (MATH 161) | F, S, SS | 4 | MATH 340 | Intro to ordinary Differential Equations (MATH 261) | F, S, SS | 4 |
| PH 141 | Physics for Scientists and Engineers I (MATH 159/conc or MATH 160/conc) | F, S, SS | 5 | MECH 262 | Engineering Mechanics (MATH 161; PH 141) | S | 4 |
| | Total | | 18 | | | | Total |
| | | | | | | | 16 |
| 3rd Year Fall | | | | 3rd Year Spring | | | |
| CS 220 | Discrete Struct and their Applications ((CS 150A* or CS 150B* or CS 152* or CS 162 or CS 163 or CS 164); (MATH 155 or 156 or 159 or 160)) | F, S | 4 | 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 |
| ECE 311 | Linear Systems Analysis (ECE 202; MATH 340; ECE 451 or ECE 528 or CS 356 or concurrent) | F | 3 | 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 |
| PH 142 | Physics for Scientists and Engineers II (PH 141; MATH 161 /conc) | F, S | 5 | CHEM 112 | General Chemistry Lab I (CHEM 111/conc or CHEM 117/conc) | F, S, SS | 1 |
| CpE Elec* - | ECE 450+451 - Digital System Design (ECE 102; ECE 202) | F | 4 | MATH 369 or DSCI 369 | MATH 369 -Linear Algebra I (MATH 156 or 161 or 255 or 271) DSCI 369 - Linear Algebra for Data science (MATH 124; (126 or 157); (159 or 155 or 156 or 160 or 161) | F, S, SS | 3-4 |
| Recommend ECE 450+451 OR ECE 528 | ECE 528 - Embedded Systems/Machine Learning (CS 270 or ECE 251) | | | CS 214 | Software Development (CS 165) - Curricular changes pending | F, S | 3 |
| | Total | | 16 | | | | Total |
| | | | | | | | 15-16 |
| 4th Year Fall | | | | 4th Year Spring | | | |
| BMS 300 | Principles of Human Physiology ((BZ 101 or 110 or LIFE 102); (CHEM 103 or 107 or 111)) | F, S, SS | 4 | BIOM 431 | Biomedical Signal and Image Processing (ECE/STAT 303; ECE 311; PH 142) | S | 3 |
| 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 | ECON 202 (AUCC 3C) | Principles of Microeconomics (MATH 117 or 118 or 127 or 160) | F, S, SS | 3 |
| MECH 337 | Thermodynamics (MATH 261; PH 141) | F, S | 4 | CHEM 245 | Fundamentals of organic Chemistry (CHEM 107 or 113) | F, S, SS | 4 |
| CT 301 | Foundations of C++ (CS 162 or 163 or 164) - Curricular changes pending | F, S | 2 | CpE or Tech Elec* | Click hyperlink to see approved list - note that prereqs for many electives may require grades of C or higher | F, S | 3-4 |
| AUCC | | F, S, SS | 3 | AUCC | | | 3 |
| | Total | | 16 | | | | Total |
| | | | | | | | 16-17 |
| 5th Year Fall | | | | 5th Year Spring | | | |
| 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 |
| CO 301B or JTC 300 | CO 301B: Writing in Disciplines: Science JTC 300: Strategic Writing & Communication (CO 150 or HONR 193 for both) | F,S or F,S,SS | 3 | BME-TE | | F, S, SS | 3 |
| CpE or Tech Elec* | See approved list - note that prereqs for many electives may require grades of C or higher | F,S | 0-6 | CpE or Tech Elec* | See approved list - note that prereqs for many electives may require grades of C or higher | F, S | 4-9 |
| AUCC | | F, S, SS | 3 | | | | |
| | Total | | 10-16 | | | | Total |
| | | | | | | | 12-16 |

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

All course prerequisites for 100-, 200-, 300- and 400-level required ECE courses must be completed with a C or better.

Many elective courses require prerequisite courses w/C or higher grades.

[†] CS 150B + CS 164: Students may also choose one of the following: 1)Arts/Humanities AUCC + CS 152+CS162 -OR- 2)Arts/Humanities AUCC+CS 163

* 19 credits of CpE electives are required (11 - 18 credits of CpE Electives and 2-9 credits of Technical Electives) - curricular changes pending (from 20 to 19 CpE/Tech Electives)

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| AUCCs- Additional All University Core Courses (click here for list) |
| 3 credits - 1C Diversity, Equity, and Inclusion: |
| 6 credits - 3B Arts and Humanities: CS 150B |
| 3 credits - 3C Social/Behavioral Science: ECON 202 |
| 3 credits - 3D Historical Perspective: |

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| 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 exceptionally time-consuming/difficult courses |
| Must have at least a "C" in BOLDED courses |
| BOLDED and * = Must have at least a "B" in courses |
| Rev BEB-10-31-2023 |