

# Biomedical Engineering and Mechanical Engineering

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

## Honors Track 1 Curriculum Check Sheet

160 Credits

| COURSE                          | NAME (PREREQS)   | TERM*    | CR              | COURSE                            | NAME (PREREQS)  | TERM*    | CR              |
|---------------------------------|--|----------|-----------------|-----------------------------------|---|----------|-----------------|
| <b>1<sup>st</sup> Year Fall</b> |  |          |                 | <b>1<sup>st</sup> Year Spring</b> |   |          |                 |
| HONR 192                        | Honors First Year Seminar  | F        | 4               | HONR 193                          | Honors Seminar (HONR 192)   | S        | 3               |
| CHEM 111                        | General Chemistry I (MATH 118 or 141 or 155 or 160 or 161 or 229 or 261)   | F, S, SS | 4               | MECH 105                          | Mechanical Engineering Problem Solving (MECH 103; MATH 160; PH 141 or conc.)                | F, S     | 3               |
| CHEM 112                        | General Chem Lab I (CHEM 111 or 117 or conc.)  | F, S, SS | 1               | MATH 161                          | Calculus for Physical Scientists II (MATH 124; MATH 159 or 160)                             | F, S, SS | 4               |
| MATH 160                        | Calculus for Physical Scientists I (MATH 124 (B or better); MATH 126 (B or better))  | F, S, SS | 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               |
| MECH 103                        | Introduction to Mechanical Engineering   | F,S      | 3               |                                   |   |          |                 |
|                                 |  |          | <b>Total 16</b> |                                   |   |          | <b>Total 15</b> |
| <b>2nd Year Fall</b>            |  |          |                 | <b>2nd Year Spring</b>            |   |          |                 |
| BIOM 101                        | Introduction to Biomedical Engineering   | F        | 3               | CIVE 261^                         | Engineering Mechanics: Dynamics (CIVE 260)  | F, S, SS | 3               |
| MATH 261^                       | Calculus for Physical Scientists III (MATH 161)  | F, S, SS | 4               | LIFE 102^                         | Attributes of Living Systems  | F, S, SS | 4               |
| CIVE 260^                       | Engr. Mechanics: Statics (MATH 160; PH 141 - change pending)   | F, S, SS | 3               | MATH 340^                         | Introduction to Ordinary Differential Equations (MATH 255 or 261)                           | F, S, SS | 4               |
| MECH 201                        | Engineering Design I (MECH 105)  | F, S     | 2               | MECH 200                          | Introduction to Manufacturing Processes (MECH 105 - change pending)                         | F, S, SS | 3               |
| PH 142                          | Physics for Scientists and Engineers II (PH 141; MATH 161 or 255 or 271 or conc.)  | F, S     | 5               | MECH 231                          | Engineering Experimentation (MECH 105; PH 142)  | F, S     | 3               |
|                                 |  |          | <b>Total 17</b> |                                   |   |          | <b>Total 17</b> |
| <b>3rd Year Fall</b>            |  |          |                 | <b>3rd Year Spring</b>            |   |          |                 |
| BMS 300                         | Principles of Human Physiology (BZ 101 or 110 or LIFE 102; CHEM 103 or 107 or 111)   | F, S, SS | 4               | BIOM 300                          | Problem-Based Learning BME Lab (BIOM 101; MATH 340 or 345)                                  | S        | 4               |
| CIVE 360                        | Mechanics of Solids (CIVE 260 or MECH 262)   | F, S, SS | 3               | ECE 204                           | Intro to Electrical Engineering (MATH 161; PH 142)  | F, S, SS | 3               |
| MECH 202                        | Engineering Design II (MECH 200 or conc.; MECH 201)  | F, S     | 3               | MECH 324                          | Dynamics of Machines (CIVE 261; MATH 340 or conc.)  | F, S     | 4               |
| MECH 337                        | Thermodynamics (MATH 261; PH 141)  | F, S     | 4               | MECH 342^                         | Mechanics & Thermodynamics of Flow Processes (MECH 337 or conc.; MATH 340; PH 141)          | F, S     | 3               |
| HONR 292 OR 293                 | Honors Seminar -- Knowing in Arts & Humanities OR -- Knowing Across Cultures (HONR 193)  | F, S     | 3               | HONR 392                          | Honors Seminar (HONR 193)   | F, S     | 3               |
|                                 |  |          | <b>Total 17</b> |                                   |   |          | <b>Total 17</b> |
| <b>4th Year Fall</b>            |  |          |                 | <b>4th Year Spring</b>            |   |          |                 |
| BIOM 441                        | Biomechanics and Biomaterials (BMS 300 or conc.; CIVE 360; MECH 324 or conc.; MECH 331 or conc.; MECH 342)   | F        | 3               | CHEM 245                          | Fundamentals of Organic Chemistry (CHEM 107 or 113)   | F, S, SS | 4               |
| LIFE 210^ & LIFE 211^           | Introductory Eukaryotic Cell Biology (LIFE 102; CHEM 111; CHEM 112) NOTE: Honors requires LIFE 211 (1 cr recitation) and is only needed if LIFE 210 is taken as an Honors course | F        | 4               | MECH 301                          | Engineering Design III (MECH 202 or conc.; MECH 342; CIVE 360)                              | F, S     | 2               |
| MECH 325                        | Machine Design (CIVE 360)  | F, S     | 3               | MECH 344                          | Heat and Mass Transfer (MECH 342)   | F, S     | 3               |
| MECH 331                        | Introduction to Engineering Materials (MECH 231; CHEM 111; CHEM 112)   | F, S     | 4               | MECH 307                          | Mechatronics and Measurement Systems (MECH 231; CIVE 261; ECE 204; MATH 340)                | F, S     | 4               |
| CHEM 113                        | Gen Chem II (CHEM 107 or 111 or 117; MATH 124 or MATH 141, 155, 160, 161, 229, 261 or conc.)   | F, S, SS | 3               | HONR 492                          | Honors Senior Seminar (HONR 392)  | F, S     | 3               |
|                                 |  |          | <b>Total 17</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 330 or BIOM 441 or ECE 441)   | F        | 4               | BIOM486B                          | Biomedical Design Practicum: Capstone Design II (BIOM 486A)                                 | S        | 4               |
| MECH 338                        | Thermal/Fluid Sciences Lab (MECH 337; MECH 342)  | F, S     | 1               | BME-TE                            | BME Technical Elective _____  | F, S, SS | 3               |
| BME-TE                          | BME Technical Elective _____   | F, S, SS | 3               | MECH 402                          | Mechanical Engineering Experimental Analysis (MECH _____)                                   | F, S     | 3               |
| ME-TE                           | MECH Technical Elective _____  | F, S     | 3               | HONR 499                          | Senior Honors Thesis (HONR 399)   | F, S, SS | 3               |
| Advanced Writing                | CHEM 301 or CO300 or CO301B or JTC 300 or LB 300 (CO150, HONR193)  | F, S, SS | 3               |                                   |   |          |                 |
| HONR 399                        | Pre-Thesis - Honors  | F, S     | 1               |                                   |   |          |                 |
|                                 |  |          | <b>Total 15</b> |                                   |   |          | <b>Total 13</b> |

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

### Track 1 Honors Program Required Courses in BLUE:

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

### Key:

- "conc." = concurrent enrollment \*Term: F = Fall, S = Spring, SS = Summer Session
- Grey indicates Biomedical Engineering courses
- Light green indicates labs
- Red indicates exceptionally time-consuming/difficult courses