



**UNIVERSITY OF THE DISTRICT OF COLUMBIA**  
**SCHOOL OF ENGINEERING AND APPLIED SCIENCES**  
**Department of Mechanical Engineering**  
**BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING**  
**Effective Fall 2022**



**Student** \_\_\_\_\_ **Student ID #** \_\_\_\_\_

| First Semester   |                                  |         |       | Second semester |                                  |         |       |
|------------------|----------------------------------|---------|-------|-----------------|----------------------------------|---------|-------|
| Course #         | Course Name                      | Credits | Grade | Course #        | Course Name                      | Credits | Grade |
| IGED-110         | Found Writ Arts & Hum            | 3       |       | IGED-111        | Found Writ Soc. & Nat Sc.        | 3       |       |
| IGED-130         | Found Oral Comm.                 | 3       |       | IGED-140        | Found Ethics & Values            | 3       |       |
| CHEM-111         | General Chemistry I Lec          | 3       |       | MATH-152        | Calculus II Lec                  | 3       |       |
| CHEM-113         | General Chemistry I Lab          | 1       |       | MATH-156        | Calculus II Lab                  | 1       |       |
| MATH-151         | Calculus I Lec                   | 3       |       | PHYS-201        | University Physics I Lec         | 3       |       |
| MATH-155         | Calculus I Lab                   | 1       |       | PHYS-205        | University Physics I Lab         | 1       |       |
| CCEN-101         | Intro to Engineering             | 2       |       | BMEG-101        | Survey of Biomedical Engineering | 3       |       |
|                  | Total                            | 16      |       |                 | Total                            | 17      |       |
|                  |                                  |         |       |                 |                                  |         |       |
| Third semester   |                                  |         |       | Fourth semester |                                  |         |       |
| Course #         | Course Name                      | Credits | Grade | Course #        | Course Name                      | Credits | Grade |
| PHYS-202         | University Physics II Lec        | 3       |       | MATH-254        | Differential Eq. (or 260)        | 3       |       |
| PHYS-206         | University Physics II Lab        | 1       |       | CVEN-202        | Engineering Mechanics II         | 3       |       |
| CVEN-201         | Engineering Mechanics I          | 3       |       | BIOL-101        | Biological Science Lec           | 3       |       |
| MECH-107         | ME Computer Graphics             | 3       |       | BIOL-103        | Biological Science Lab           | 1       |       |
| BMEG-235         | Engineering Software & Prog.     | 3       |       | MECH-208        | Thermodynamics                   | 3       |       |
| ELEC-225         | Electric Circuits Lec            | 3       |       | BMEG-301        | Bioinstrumentation Lec           | 3       |       |
| ELEC-226         | Electric Circuits Lab            | 1       |       | BMEG-300        | Bioinstrumentation Lab           | 1       |       |
|                  | Total                            | 17      |       |                 | Total                            | 17      |       |
|                  |                                  |         |       |                 |                                  |         |       |
| Fifth semester   |                                  |         |       | Sixth semester  |                                  |         |       |
| Course #         | Course Name                      | Credits | Grade | Course #        | Course Name                      | Credits | Grade |
| IGED-210         | Discov Expos Writing             | 3       |       | MATH-253        | Calculus III Lec                 | 3       |       |
| CVEN-308         | Appl. Num Analysis               | 3       |       | MATH-255        | Calculus III Lab                 | 1       |       |
| MECH-381         | Microcontrollers in ME           | 3       |       | MECH-351        | Heat Transfer Lec                | 3       |       |
| MECH-321         | Fluid Mechanics Lec              | 3       |       | BMEG-302        | Prof. Issues in Biomed. Eng.     | 3       |       |
| BIOL-111         | Human Anatomy and Physiology Lec | 3       |       | BMEG-371        | Analysis of Physio. Sys. Lec     | 3       |       |
|                  |                                  |         |       | BMEG-373        | Analysis of Physio. Sys. Lab     | 1       |       |
|                  |                                  |         |       | BMEG-304        | Biomechanics                     | 3       |       |
|                  | Total                            | 15      |       |                 | Total                            | 17      |       |
|                  |                                  |         |       |                 |                                  |         |       |
| Seventh Semester |                                  |         |       | Eighth semester |                                  |         |       |
| Course #         | Course Name                      | Credits | Grade | Course #        | Course Name                      | Credits | Grade |
| IGED-280         | Discov Civ/Ser/Team              | 3       |       | BMEG-492        | Capstone Sr. Design Pr. II*      | 3       |       |
| MECH-406         | Engineering Economics            | 3       |       | BMEG-xxx        | BMEG Technical Elective**        | 3       |       |
| MATH-381         | Probability & Statistics         | 3       |       | BMEG-xxx        | BMEG Technical Elective**        | 3       |       |
| BMEG-491         | Capstone Sr. Design Proj I*      | 3       |       | IGED-270        | Discov Loc/Glob Cul              | 3       |       |
| BMEG-xxx         | BMEG Technical Elective**        | 3       |       |                 |                                  |         |       |
|                  | Total                            | 15      |       |                 | Total                            | 12      |       |
|                  |                                  |         |       |                 | GRAND TOTAL CREDITS              | 126     |       |

## BIOMEDICAL ENGINEERING COURSE Co/Pre-Requisite List

| Course No | Course Name   | Co-Req                      | Pre-Requisite  |
|-----------|---|-----------------------------|--|
| CVEN 201  | <i>Engineering Mechanics I</i>                          | -                           | PHYS 201   |
| CVEN 202  | <i>Engineering Mechanics II</i>                         | -                           | CVEN 201   |
| BIOL 101  | <i>Biological Science Lec</i>                           | BIOL 103                    | -  |
| BIOL 103  | <i>Biological Science Lab</i>                           | BIOL 101                    | -  |
| MECH 208  | <i>Thermodynamics</i>                                   | -                           | PHYS 201   |
| ELEC 225  | <i>Electrical Circuits</i>                              | ELEC 226                    | PHYS 201/PHYS 205  |
| BMEG 301  | <i>Bioinstrumentation Lec</i>                           | BMEG 300                    | ELEC 225/ELEC 226 or by permission of instructor                                   |
| BMEG 300  | <i>Bioinstrumentation Lab</i>                           | BMEG 301                    | -  |
| BMEG 302  | <i>Professional Issues in Biomedical Engineering</i>    | -                           | Junior standing, or by permission of instructor.                                   |
| BMEG 304  | <i>Biomechanics</i>                                     | -                           | CVEN 201 and CVEN 202  |
| MECH 381  | <i>Microcontrollers in ME</i>                           | -                           | ELEC 225 and junior standing   |
| BIOL 111  | <i>Human Anatomy and Physiology Lec</i>                 | <i>BIOL 113</i><br>(waived) |  |
| MECH 321  | <i>Fluid Mechanics Lec</i>                              | <i>MECH-322</i><br>(waived) | MATH 254 or MATH 260 and MECH 208  |
| CVEN 308  | <i>Applied Numerical Analysis for Engineers</i>         | -                           | MATH 254 or MATH 260   |
| MECH 351  | <i>Heat Transfer Lec</i>                                | -                           | MECH 321 and MATH 254 or MATH 260  |
| BMEG 371  | <i>Analysis of Physio. Sys. Lec</i>                     | BMEG 373                    | MATH 151/MATH 155, MATH 152/MATH 156, and MATH 254, or by permission of instructor |
| BMEG 373  | <i>Analysis of Physio. Sys. Lab</i>                     | BMEG 371                    | -  |
| MECH 406  | <i>Engineering Economics</i>                            | -                           | Senior standing  |
| BMEG 491  | <i>BME Capstone Sr. Design Proj I</i>                   | -                           | Senior standing  |
| BMEG 492  | <i>BME Capstone Sr. Design Proj II</i>                  | -                           | BMEG 491   |
| BMEG 402  | <i>Biomedical Imaging Systems and Signal Processing</i> | -                           | Junior standing, or by permission of instructor                                    |
| BMEG 405  | <i>Biomedical Research &amp; Clinical Experience</i>    | -                           | Senior standing  |
| BMEG 495  | <i>Special Topics in Biomedical Engineering</i>         | -                           | Senior standing and permission of instructor                                       |
| MECH 302  | <i>Res Exp &amp; Tech Comm</i>                          | -                           | CCEN 101   |
| MECH 465  | <i>Advanced Manufacturing</i>                           | -                           | -  |
| MECH 473  | <i>Microelectromechanical Systems (MEMS)</i>            | -                           | MECH 205 and MECH 321  |
| MECH 478  | <i>Mechatronics</i>                                     | -                           | MECH 381 and senior standing   |
| MECH 483  | <i>Robot Mechanics and Control</i>                      | -                           | MECH 341 and MECH 371, or by permission of instructor                              |
| MECH 484  | <i>Design of Robot Mechanisms</i>                       |                             | MECH 483   |