

## Biomedical Engineering Course Plan (16-17)

|               | ✓ | Freshman Year                                    | ✓             | Sophomore Year                                       |
|---------------|---|--|---------------|--|
| <b>Fall</b>   |   | ENGI 1100 – Intro to Engineering                 | <b>Fall</b>   | CHEM 3331 & 3221 – Organic Chemistry I & Lab         |
|               |   | BIOL 1361 & 1161 – Biological Science 1 & Lab    |               | BIOE 2100– Intro to Biomedical Engr                  |
|               |   | CHEM 1331 & 1111 – Chemistry I & Lab             |               | ENGL 1304/1310 – Freshman Comp II                    |
|               |   | ENGL 1303/1309 – Freshman Comp I                 |               | MATH 2433 – Calculus III                             |
|               |   | MATH 1431 – Calculus I                           |               | PHYS 1322 – University Physics II                    |
| <b>Spring</b> |   | ENGI 1331 – Computers & Problem-Solving          | <b>Spring</b> | CHEE 2331 – Chemical Processes                       |
|               |   | BIOL 1362 & 1162 – Biological Science 2 & Lab    |               | ECE 2201 – Circuit Analysis I                        |
|               |   | CHEM 1332 & 1112 – Chemistry 2 & Lab             |               | BCHS 3304 – Biochemistry I                           |
|               |   | MATH 1432 – Calculus II                          |               | MATH 3321 – Engineering Math                         |
|               |   | PHYS 1321 – University Physics I                 |               | Core Course/Social & Behavioral Sciences             |
|               |   |  |               | Core Course/Creative Arts                            |
|               |   | <u>Junior Year</u>                               |               | <u>Senior Year</u>                                   |
| <b>Fall</b>   |   | MECE 3400 – Intro to Mechanics                   | <b>Fall</b>   | BIOE 4315 & 4115 – Intro to Bioinstrumentation & Lab |
|               |   | BIOE 3340 & 3140 – Quantitative Physiology & Lab |               | BIOE 4335 – Capstone Design I                        |
|               |   | Core Course/HIST 1377 – US History to 1877       |               | BIOE Track Course*                                   |
|               |   | ENGI 2304 – Technical Communication              |               | BIOE Track Course*                                   |
|               |   | INDE 2333 – Engineering Statistics               |               | Core Course/POLS 1337 – US Government                |
| <b>Spring</b> |   | BIOE 3341 - Biothermodynamics                    | <b>Spring</b> | BIOE 4336 – Capstone Design II                       |
|               |   | BIOE Track Course*                               |               | BIOE Track Course*                                   |
|               |   | BIOE Track Course*                               |               | BIOE Track Course*                                   |
|               |   | Core Course/HIST 1378 – US History Since 1877    |               | BIOE Track Course*                                   |
|               |   | Core Course/POLS 1336 – US & TX Constitutions    |               | Core Course/Language, Philosophy, & Culture          |

### \*Choose One Track:

| <u>Bionanoscience Track</u>                              | <u>Neural, Cognitive, &amp; Rehabilitation Engineering Track</u> | <u>Biomedical Imaging Track</u>               |
|--|--|---|
| <b>2 Required Courses:</b>                               | <b>4 Required Courses:</b>                                       | <b>5 Required Courses:</b>                    |
| BIOE 4350 & 4150: Genomic & Proteomic Engr               | BIOE 4350 & 4150: Genomic & Proteomic Engr                       | BIOE 4350 & 4150: Genomic & Proteomic Engr    |
| BIOE 4302: Numerical Analysis                            | BIOE 4302: Numerical Analysis                                    | BIOE 4302: Numerical Analysis                 |
| <b>+Choose 3 from the following list:</b>                | <b>+Choose 3 from the following list:</b>                        | BIOE 5320: Introduction to Electrical Imaging |
| BIOE 5341: Advanced Biofluid Dynamics                    | BIOE 4342: Biomedical Signal Processing                          | BIOE 5317: Intro to Imaging                   |
| BIOE 4349: Biomedical Microdevices                       | ECE 3337: Signals & Systems                                      | BIOE 4397: Intro to Optical Imaging           |
| BIOE 5316: Transport Phenomena in Biosystems             | Intro to Neuro-Computing   | <b>+Choose 2 BIOE Technical Electives</b>     |
| BIOE 5323: Regenerative Medicine & Stem Cell Engineering | Brain-Machine Interface  |   |
| <b>+Choose 2 BIOE Technical Electives</b>                | Introduction to Neuromaterials                                   |   |
|  | <b>+Choose 2 BIOE Technical Electives</b>                        |   |