### B.S. in BIOMEDICAL ENGINEERING (2018-2019 Catalog)

**Advisor:\_\_\_\_\_\_\_\_\_**

**\_\_Fast Track \_\_Minor\_\_\_\_\_\_\_\_\_**

**\_\_Dbl Major/Degree**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Other:**

### Student \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ UTD ID \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# MAJOR PREPARATORY REQUIREMENTS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **LD** | **UD** | **NTS** | **COURSE TITLE** | **COURSE #** | **GRADE** | **SEM** | **INFO** |
| 3 |  | 1 | Introduction to Programming for Biomedical Engrs | CS 1324 |  |  |  |
| 4 |  | 1,2,3 | Calculus I | MATH 2414 or 2417 |  |  |  |
| 4 |  | 1,2,3 | Calculus II | MATH 2415 or 2419 |  |  |  |
| 4 |  | 1 | Differential Equations w/ Applications | MATH 2420 |  |  |  |
| 3 |  | 1,2 | Mechanics | PHYS 2325 |  |  |  |
| 1 |  | 1,2 | Physics Laboratory I | PHYS 2125 |  |  |  |
| 3 |  | 1,2 | Electromagnetism and Waves | PHYS 2326 |  |  |  |
| 1 |  | 1 | Physics Laboratory II | PHYS 2126 |  |  |  |
| 3 |  | 1,4,5 | General Chemistry for Engineers OR  General Chemistry I AND General Chemistry II | CHEM 1301 OR  CHEM 1311/1111 and CHEM 1312/1112 |  |  |  |
| 3 |  | 1,4,5 | Introductory Organic Chemistry for Engineers OR  Organic Chemistry I AND Organic Chemistry II | CHEM 2324 OR  CHEM 2323/2123 and  CHEM 2325/2125 |  |  |  |
| 3 |  | 1 | Intro to Modern Biology I | BIOL 2311 |  |  |  |
| 1 |  | 1 | Intro to Modern Biology Workshop I | BIOL 2111 |  |  |  |
| 2 |  | 1 | Introductory Biology Laboratory | BIOL 2281 |  |  |  |
| 35 |  |

MAJOR CORE REQUIREMENTS\* *(\*Courses in this block used to calculate major GPA)*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 |  | 1,6 | Introduction to Engineering and Computer Science | ECS 1100\* |  |  |  |
| 1 |  | 1 | Introduction to Bioengineering I | BMEN 1100\* |  |  |  |
| 2 |  | 1 | Introduction to Bioengineering II | BMEN 1208\* |  |  |  |
| 3 |  | 1 | Linear Algebra for Engineers | ENGR 2300\* |  |  |  |
| 3 |  | 1 | Statics | BMEN 2320\* |  |  |  |
|  | 3 | 1 | Advanced Engineering Math | ENGR 3300\* |  |  |  |
|  | 3 | 1 | Signals and Systems | EE 3302\* |  |  |  |
|  | 1 | 1 | Signals and Systems Lab | EE 3102\* |  |  |  |
|  | 3 | 1 | Electrical & Electronic Circuits in BMEN | BMEN 3320\* |  |  |  |
|  | 1 | 1 | Biomedical Circuits & Instrumentation Lab | BMEN 3120\* |  |  |  |
|  | 3 | 1 | Engineering Physiology of the Human Body | BMEN 3330\* |  |  |  |
|  | 1 | 1 | Engineering Physiology Lab | BMEN 3130\* |  |  |  |
|  | 3 | 1 | Probability Theory & Statistics | ENGR 3341\* |  |  |  |
|  | 3 | 1 | Biomedical Component & System Design | BMEN 3350\* |  |  |  |
|  | 1 | 1 | Biomedical Engineering Lab | BMEN 3150\* |  |  |  |
|  | 3 | 1 | Thermodynamics OR Thermodynamics & Physical Chemistry in Biomedical Engineering | BMEN 3360\* OR BMEN 3315\* |  |  |  |
|  | 3 | 1 | Introductory Biomechanics | BMEN 3399\* |  |  |  |
|  | 3 | 1 | Feedback Systems in Biomedical Engineering | BMEN 4310\* |  |  |  |
|  | 1 | 1 | Biomedical Feedback Systems Lab | BMEN 4110\* |  |  |  |
|  | 3 | 1 | Intermediate Electrical Systems | BMEN 4320\* |  |  |  |
|  | 3 | 1 | Biomaterials and Medical Devices | BMEN 4360\* |  |  |  |
|  | 3 | 1 | Senior Design Project I | BMEN 4388\* |  |  |  |
|  | 3 | 1 | Senior Design Project II | BMEN 4389\* |  |  |  |
|  | 3 | 1 | Major Prescribed Elective | BMEN 33XX/43XX\* |  |  |  |
|  | 3 | 1 | Major Prescribed Elective | BMEN 33XX/43XX\* |  |  |  |
|  | 3 | 1,2 | Social Issues and Ethics in CS & E | ECS 3361\* |  |  |  |
|  | 3 | 1,2 | Professional & Technical Communication | ECS 3390\* |  |  |  |
| 10 | 56 |

REMAINING CORE CURRICULUM

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 3 |  | 1 | Rhetoric | RHET 1302 |  |  |  |
| 3 |  |  | American National Government | GOVT 2305 |  |  |  |
| 3 |  |  | State and Local Government | GOVT 2306 |  |  |  |
| 3 |  | 4 | US History Survey to Civil War (Core: 060) | HIST 1301 |  |  |  |
| 3 |  | 4 | US History Survey From Civil War (Core:060) | HIST 1302 |  |  |  |
| 3 |  | 4 | Exploration of the Humanities (Core: 040) | HUMA 1301 |  |  |  |
| 3 |  | 4 | Exploration of the Arts (Core: 050) | ARTS 1301 |  |  |  |
| 21 |  |

ELECTIVES (0 Hours – Requires Approval from Advisor)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 |  | 6 | Freshman Seminar | | UNIV 1010 |  |  |  |
| 0 |  | 7 | Core Curriculum Assessment | | UNIV 2020 |  |  |  |
| 0 | 0 |
| 66 | 56 | ***Total Hours\_\_\_\_\_\_\_\_\_*** | | ***122 hours required for graduation. Must include minimum 51 hours as Upper Division.\*\*\**** | | | | |

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| **NOTES** | 1. Major requirement. Must earn C- or better.\* | 1. Course meets both Major and Core requirements. | | 1. Must take Math 2413/2414/2415 or Math 2417/2419. |
| 1. Other course options available. See Advisor for details | | 1. Must take Chem 1301/2324 or Chem 1311/1111, 1312/1112, 2323/2123, and 2325/2125 to satisfy. | |
| 1. Incoming freshman (FTIC) must enroll and complete requires of UNIV 1010 and the corresponding school-related freshman seminar course. | | | |
| 1. All students, including transfer students, who complete their core curriculum at UTD must take UNIV 2020. | | | |
| \*\*\*Must have a minimum cumulative 2.0 GPA in all UTD coursework and a cumulative 2.0 GPA in all Major Requirements to graduate. Students must also complete 45 hours in residence and complete 24 of the last 30 hours at UTD. No off-campus coursework in the last semester is allowed. | | | |