

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

Catalogue
2016-2017

Systems and Network Biology Specialization (BME-SNB)

Student: _____
ID #: _____

Date: _____
Advisor: _____

Year 1

| Semester 1 | Cr | Status | Semester 2 | Cr | Status |
|--|-----------|--------|---|-----------|--------|
| ENGR 002 - Graphical Communication | 2 | | BME 001 - Intro to Biomedical Eng Design ⁵ | 2 | |
| CHEM 031 - General Chemistry I ¹ | 4 | | PHYS 031 - Physics for Engineers I ¹ | 4 | |
| Foundational Writing and Information Literacy ² | 3 | | MLRS 034 - Human Cell Biology ⁷ | 4 | |
| MATH 021 - Calculus I ¹ | 4 | | MATH 022 - Calculus II ¹ | 4 | |
| CS 020 - Programming for Engineers ¹ | 3 | | CHEM 032 - General Chemistry II ⁷ | 4 | |
| ENGR 050 - First Year Engineering Seminar | 1 | | | | |
| <i>Total credits</i> | <i>17</i> | | <i>Total credits</i> | <i>18</i> | |

1. Students must complete the Pre-Engineering Technical (PET) courses with C- or higher by the end of the first year of study. Students not completing the PET Requirement during their first year, will be put on NOTICE and must successfully complete the courses by the end of the fall term of their Sophomore year in order to take additional engineering courses. Student must have a cumulative GPA of at least 2.3 before taking sophomore level engineering courses.

Year 2

| Semester 1 | Cr | Status | Semester 2 | Cr | Status |
|--|-----------|--------|--|-----------|--------|
| EE 100 - Electrical Engr. Concepts I ⁷ | 4 | | CS 064 - Discrete Structures | 3 | |
| CE 001 - Statics ⁷ | 3 | | CS 110 - Intermediate Programming | 4 | |
| ANPS 019 - Human Anatomy & Physiology ⁷ | 4 | | ANPS 020 - Human Anatomy & Physiology ⁷ | 4 | |
| MATH 121 - Calculus III | 4 | | MATH 271 - Adv Engineering Mathematics | 3 | |
| PHYS 125 - Physics for Engineers II | 3 | | BME 081 - Biomedical Engineering Lab I | 2 | |
| | | | | | |
| <i>Total credits</i> | <i>18</i> | | <i>Total credits</i> | <i>16</i> | |

Year 3

| Semester 1 | Cr | Status | Semester 2 | Cr | Status |
|---|-----------|--------|---|-----------|--------|
| CS 124 - Data Structures and Algorithms | 3 | | BME Systems and Network Biology Elective ⁴ | 3 | |
| EE 171 - Signals and Systems | 4 | | BME Systems and Network Biology Elective ⁴ | 3 | |
| STAT 143 - Statistics for Engineering | 3 | | BME Systems and Network Biology Elective ⁴ | 3 | |
| MATH 122 - Applied Linear Algebra | 3 | | BME Systems and Network Biology Elective ⁴ | 3 | |
| BME 151 - Fall BME Workshop | 1 | | BME 152 - Spring BME Workshop | 1 | |
| General Education Elective ³ | 3 | | General Education Elective ³ | 3 | |
| <i>Total credits</i> | <i>17</i> | | <i>Total credits</i> | <i>16</i> | |

Year 4

| Semester 1 | Cr | Status | Semester 2 | Cr | Status |
|---|-----------|--------|---|-----------|--------|
| BME SNB Technical Elective ⁶ | 3 | | BME SNB Technical Elective ⁶ | 3 | |
| BME SNB Technical Elective ⁶ | 3 | | BME SNB Technical Elective ⁶ | 3 | |
| BME 187 - Capstone Design I | 3 | | BME 188 - Capstone Design II | 3 | |
| BME 181 - Biomedical Eng Lab II | 2 | | General Education Elective ³ | 3 | |
| General Education Elective ³ | 3 | | General Education Elective ³ | 3 | |
| <i>Total credits</i> | <i>14</i> | | <i>Total credits</i> | <i>15</i> | |

2. Foundational Writing and Information Literacy: Students must take either ENGS 001 or HCOL 085 (only if the student is enrolled in the Honors College). Students transferring from the College of Arts and Sciences can use a TAP class to fulfill this requirement.

3. Required General Education Electives (GenEd): fifteen credits of approved GenEd electives, including three credits of D1 and three credits of D1 or D2.

4. Systems & Network Biology Electives: CE, EE, ENGR, ME, CS, MATH, STAT and life/physical sciences courses with the approval of BME advisor. At least 9 hours must be 100-level or above engineering courses.

5. First-Year Design Experience: Transfer students without applicable transfer credit have the option of either taking [BME 001](#) or replacing the credits with engineering course work at the 100-level or higher.

6. BME SNB Technical Electives: [BIOC 212](#), [CE 359*](#), [CS 256](#), [CS 302*](#), [CS 352*](#), [EE 207](#), [EE 210](#), [EE 213](#), [MATH 266](#), [MATH 268](#), [MATH 300*](#), [MATH 303*](#), [ME 201](#), [ME 208](#), [ME 209](#), [ME 285](#), [ME 312*](#), [MMG 223](#), [MMG 231](#), [MMG 232](#), [MMG 233](#), [MPBP 323*](#), [PATH 101](#), [PHRM 201](#), [PHRM 240](#), [PHRM 272](#), [STAT 200](#) & [STAT 211](#). Other courses may be pre-approved by advisor and program head. At least 9 credits must be at the 200-level or above. Note that 300-level courses (*) require instructor permission for undergraduate enrollment.

7. Science/Engineering Foundation Courses: Required of all BME students in all specializations