

Biomedical Engineering

131 credits**, 2018/2019

First Year

Fall Semester

| | |
|----------|-------------------------------------------------|
| 3 | ENC 1101 Composition I |
| 4 | MAC 2281 or MAC 2311 Calculus I |
| 3 | CHM 2045 General Chemistry I |
| 1 | CHM 2045L General Chemistry I Lab |
| R | EGN 3000 Foundations of Engineering |
| <u>3</u> | EGN 3000L Foundations of Engineering Lab (TGEC) |
| 14 | <i>Total Credits</i> |

Spring Semester

| | |
|----------|------------------------------------|
| 4 | MAC 2282 or MAC 2312 Calculus II |
| 3 | CHM 2046 General Chemistry II |
| 1 | CHM 2046L General Chemistry II Lab |
| 3 | PHY 2048 General Physics I |
| 1 | PHY 2048L General Physics I Lab |
| <u>3</u> | ENC 1102 Composition II |
| 15 | <i>Total Credits</i> |

Second Year

Fall Semester

| | |
|----------|--------------------------------------------------------|
| 4 | MAC 2283 or MAC 2313 Calculus III |
| 3 | PHY 2049 General Physics II |
| 1 | PHY 2049L General Physics II Lab |
| 3 | EGN 3311 Statics |
| 3 | BME 4100 Biomedical Engineering |
| <u>3</u> | EGN 3443 Probability & Statistics for Engineers (TGEI) |
| 17 | <i>Total Credits</i> |

Spring Semester

| | |
|----------|-----------------------------------------------------------------------------|
| 3 | EGN 3433 Modeling & Analysis Eng Syst or MAP 2302 Differential Equations |
| 3 | EGN 3343 Thermodynamics |
| 3 | BME 3053 Computer Prog. BME |
| 3 | BSC 2010 Cellular Processes |
| 1 | BSC 2010L Cellular Processes Lab |
| <u>3</u> | * General Education Core Social Science |
| 16 | <i>Total Credits</i> |

Summer

| | |
|----------|------------------------------|
| 3 | CHM 2210 Org Chem I |
| 2 | CHM 2210 Org Chem I Lab |
| 3 | ENC 3246 Comm. for Engineers |
| <u>1</u> | Professional Elective |
| 9 | <i>Total Credits</i> |

Third Year

Fall Semester

| | |
|----------|--------------------------------------------------|
| 3 | EGN 3365 or EMA 4003 Materials |
| 3 | BME 4508 Biomedical Signals and Systems Analysis |
| 3 | BME 4503 Biomedical Instrumentation |
| 3 | EGN 3373 Introduction to Electrical Systems I |
| <u>3</u> | General Education Core Humanities |
| 15 | <i>Total Credits</i> |

Spring Semester

| | |
|----------|----------------------------------------|
| 2 | BME 4056C Biomedical Eng. Lab I |
| 3 | BME 3312 Molecular and Cellular Eng. |
| 3 | BME 4409 Engineering Physiology |
| 3 | EGN 3321 Dynamics |
| <u>3</u> | General Ed. Human & Cultural Diversity |
| 14 | <i>Total Credits</i> |

Internship/Co-op

List
Company/employer
name and position

Fourth Year

Fall Semester

| | |
|----------|------------------------------------------|
| 3 | BME 3032 Biomedical Transport Process |
| 2 | BME 4057C Biomedical Engineering Lab II |
| 3 | BME 4882 Biomedical Engineering Design I |
| 3 | BME Upper-Level Elective |
| <u>3</u> | STEM Upper-Level Elective |
| 14 | <i>Total Credits</i> |

Spring Semester

| | |
|----------|-------------------------------------------------|
| 3 | BME 4883 Biomedical Engineering Design II (HIP) |
| 3 | BME Upper-Level Elective |
| 3 | STEM Upper-Level Elective |
| 5 | ** General Elective |
| <u>3</u> | Gen. Ed. Ethical Reasoning & Civil Engagement |
| 12 | <i>Total Credits</i> |

Note: Continuation requirements noted on overleaf.

* Students must meet the Civic Literacy requirement with credit for AMH 2020, POS 2041 or passing an exam TBD.

TGE = Tampa General Education; C = Creative Thinking, I = Information & Data Literacy

HIP – Proposing for High Impact Practice Capstone

** Proposed Curriculum approved by USF and Board of Trustees is 126 hours without 5 credits of General Elective in Fourth Year.

Approval expected from Board of Governors fall 2018.

Continuation Requirements:

- “C” is the minimum acceptable grade in an engineering course that is a prerequisite for a subsequent course.
- In other engineering courses, any passing grade may be applied but a minimum 2.0 GPA in the following categories must be maintained at all times: Overall, USF, Math/Science, Engineering and Specialization.
- All math, science and engineering courses must be successfully completed in no more than **two** registered attempts. Grades of W, I, IF, U, R, and M are considered attempts. Registration that is canceled for non-payment is also considered an attempt.

Course Electives

- **Pre-med students** may apply Organic Chemistry II, CHM 2211/L, and Biology II, BSC 2011/L, towards the 6 credit hours of required upper level STEM electives.
- The credit hour of Professional elective may be met with undergraduate research, an independent study, or an internship.
- See the BME advisor for a list of BME electives.

Course Equivalencies

| Courses at USF | Courses at a Florida State Institution |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| MAC 2281 Engineering Calculus I or MAC 2311 Calculus I | MAC X311 or MAC X281 |
| MAC 2282 Engineering Calculus II or MAC 2312 Calculus II | MAC X312 or MAC X282 |
| MAC 2283 Engineering Calculus III or MAC 2313 Calculus III | MAC X313 or MAC X283 |
| MAP 2302 Differential Equations or EGN 3433 Modeling Analysis of Eng Systems | MAP X302 or MAP X305 |
| CHM 2045/CHM 2045L General Chemistry I with Lab Or CHS 2440/2440L General Chemistry for Engineers with lab | CHM X045/X045L or CHM X045C or CHM X041/X045L or CHS X440/X440L |
| PHY 2048/2048L General Physics I with PHY 2048L | PHY X048/X048L or PHY X048C or PHY X043/X048L |
| PHY 2049/2049L General Physics II or PHY 2061 Enriched Physics II with PHY 2049L | PHY X049/X049L or PHY X049C or PHY X044/X049L |