The B.S. BME degree has six (6) electives that may be used in developing program of study to meet individual student career goals. These include two (2) biomedical engineering (BIOM) electives, three (3) engineering electives and one (1) technical elective.

The BIOM electives must be selected from the upper division BIOM courses. The engineering electives may be selected from upper division MECH, EECE, or CIVL engineering courses in the HCoE. The technical elective may be selected from upper division courses in BIOL, CHEM, Engineering (including BIOM), MATH, PHYS and Engineering Technology (TECH). These elective courses should be chosen with permission of your advisor. Students may need to take other courses to satisfy pre-requisite requirements for upper division courses outside of the department.

The following flowcharts provide highly recommended courses in the following focus areas:

1] Biomaterials/Tissue Engineering;
2] Bioelectrical Devices and Systems;
3] Biomechanics;
4] BioSensor Devices and Systems
5] BioImaging
6] Pre-medical Studies*

Focus areas are not official degree designations and students may develop curriculum to overlap/integrate one or more focus areas for their particular career goals or can develop other areas of focus or follow the General degree program. Not all possible electives have been specified for each focus area. Students should refer to the Advising Guide and consult with advisor on selection of electives.

*To be able to meet BME degree requirements and pre-med requirements for medical applications/admissions, there are only two (2) engineering electives for the student to choose.
BS BIOMEDICAL ENGINEERING DEGREE PROGRAM: Biomaterials/Tissue Engr Focus (Begin Fall 2023)

Name: ___________________________ UUID: ___________________________ Advisor: ___________________________ Date of beginning program: ___________________________

- CHEM 1110 (3)
- CHEM 1111 (1)
- ENGR 1010 (Term)
- MATH 1910 (4)
- BIOM 1701 (1)
- BIOM 1702 (1)
- ENGR 1010 (Term)

 sanctioned courses

1. “C-” or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. [https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
3. 6 hours of Social Science from approved list. [https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
4. Must be an upper division (3XXX/4XXX) Engineering course. TECH 4472 may also be applied as an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (Note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

Total hours = 125

updated March 2023
B.S BIOMEDICAL ENGINEERING DEGREE PROGRAM: Bioelectr Devices & Systems Focus (Begin Fall 2023)

Name:         UUID:   Advisor:         Date of beginning program:

CHEM 1110    (3)     Term     Grade
CHEM 1111    (1)     Term     Grade
ENGK 1010    (3)     Term     Grade
MATH 1910    (4)     Term     Grade
BIOM 1701    (1)     Term     Grade
BIOM 1702    (3)     Term     Grade
ENGL 1010    (3)     Term     Grade

CHEM 1120    (3)     Term     Grade
CHEM 1121    (3)     Term     Grade
BIOM 1720    (3)     Term     Grade
MATH 1920    (4)     Term     Grade
PHYS 2110    (3)     Term     Grade
PHYS 2111    (1)     Term     Grade
ENGL 1020    (3)     Term     Grade

BIOL 1110    (3)     Term     Grade
BIOL 1111    (1)     Term     Grade
BIOM 2720    (3)     Term     Grade
MATH 2120    (3)     Term     Grade
PHYS 2120    (3)     Term     Grade
PHYS 2121    (1)     Term     Grade

BIOL 2010 or 2021(1)    Term     Grade
EECE 2210/2220(4)     Term     Grade
MATH 2110    (4)     Term     Grade
CIVL 2131    (3)     Term     Grade
MECH 2320 or MECH 2332(3)     Term     Grade
Soc Sci 1\(^3\)     Term     Grade
ENGL 2201 or 2202(3)     Term     Grade

Human 1 \(^2\)     Term     Grade
BIOM 4730     (4)     Term     Grade
BIOM 3010     (4)     Term     Grade
BIOM 3710     (3)     Term     Grade
BIOM 4760     (3)     Term     Grade
BIOM 3110\(^6\) (or BIOL 3730) (3)     Term     Grade

BIOM 1701     (1)     Term     Grade
BIOM 1720    (3)     Term     Grade
MATH 1910    (4)     Term     Grade
PHYS 2110    (3)     Term     Grade
PHYS 2111    (1)     Term     Grade
ENGL 1010    (3)     Term     Grade

Human 2 \(^2\)     Term     Grade
BIOM 4720(3)     Term     Grade
BIOM 4782(2)     Term     Grade
BIOM 4784(2)     Term     Grade
BIOM 4760     (3)     Term     Grade

Human 1 \(^2\)     Term     Grade
BIOM 4720(3)     Term     Grade
BIOM 4782(2)     Term     Grade
BIOM 4784(2)     Term     Grade

Total hours = 125

1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212
4. Must be an upper division (3XXX/4XXX) Engineering course. TECH 4472 may also be applied as an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

updated March 2023
B.S BIOMEDICAL ENGINEERING DEGREE PROGRAM: Biomechanics Focus (Begin Fall 2023)

Name:         UUID:   Advisor:         Date of beginning program:

1. “C-” or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. [https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
3. 6 hours of Social Science from approved list. [https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
4. Must be an upper division (3XXX/4XXX) Engineering course. TECH 4472 may also be applied as an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only
Name:         UUID:   Advisor:         Date of beginning program:

1. “C-“ or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. [Link](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
3. 6 hours of Social Science from approved list. [Link](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
4. Must be an upper division (3XXX/4XXX) Engineering course. TECH 4472 may also be applied as an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

Total hours = 125

updated March 2023
B.S. BIOMEDICAL ENGINEERING DEGREE PROGRAM: BioImaging (Begin Fall 2023)

Name: ____________________________  UUID: ____________________________  Advisor: ____________________________  Date of beginning program: ____________________________

1. “C-” or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. [Link](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
3. 6 hours of Social Science from approved list. [Link](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
4. Must be an upper division (3XXX/4XXX) Engineering course. TECH 4472 may also be applied as an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

Total hours = 125

updated March 2023
**B.S BIOMEDICAL ENGINEERING DEGREE PROGRAM: Pre-Med Focus (Begin Fall 2023)**

Name: __________________________
UUID: __________________________
Advisor: __________________________
Date of beginning program: __________________________

<table>
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<th>Term</th>
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<td>So I</td>
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<td>16 hrs</td>
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</tr>
<tr>
<td>Sr I</td>
<td>15 (+3-6) hrs</td>
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<td></td>
</tr>
<tr>
<td>Sr II</td>
<td>15 hrs</td>
<td></td>
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</tr>
</tbody>
</table>

**Total hours = 127+**

*with additional course work, total hours may >130, though only 125hrs are needed for BS degree*

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1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. [Link](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212)
3. 6 hours of Social Science from approved list: see university catalogue – ([Intro to Soc and Gen Psych](https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212) highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course. Note TECH 4472 is required course and is used to satisfy an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only
7. One or two Upper Division Biol/bevChemistry (3-6hrs) additional course work (e.g. BIOL 3130; BIOL 4445; BIOL 3500; BIOL 3072; CHEM 4511)

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Updated March 2023
1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. [https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212]
3. 6 hours of Social Science from approved list. [https://catalog.memphis.edu/preview_program.php?catoid=26&poid=10212]
4. Must be an upper division (3XXX/4XXX) Engineering course. TECH 4472 may also be applied as an Engineering Elective.
5. May be an upper division (3XXX/4XXX) Engineering, Science, Math or Technology course. (note TECH 4472 CAD is Fall term only)
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

Total hours = 125

updated March 2023