

FLOWCHARTS FOR BIOMEDICAL ENGINEERING FOCUS AREA DEGREE PLANNING

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:

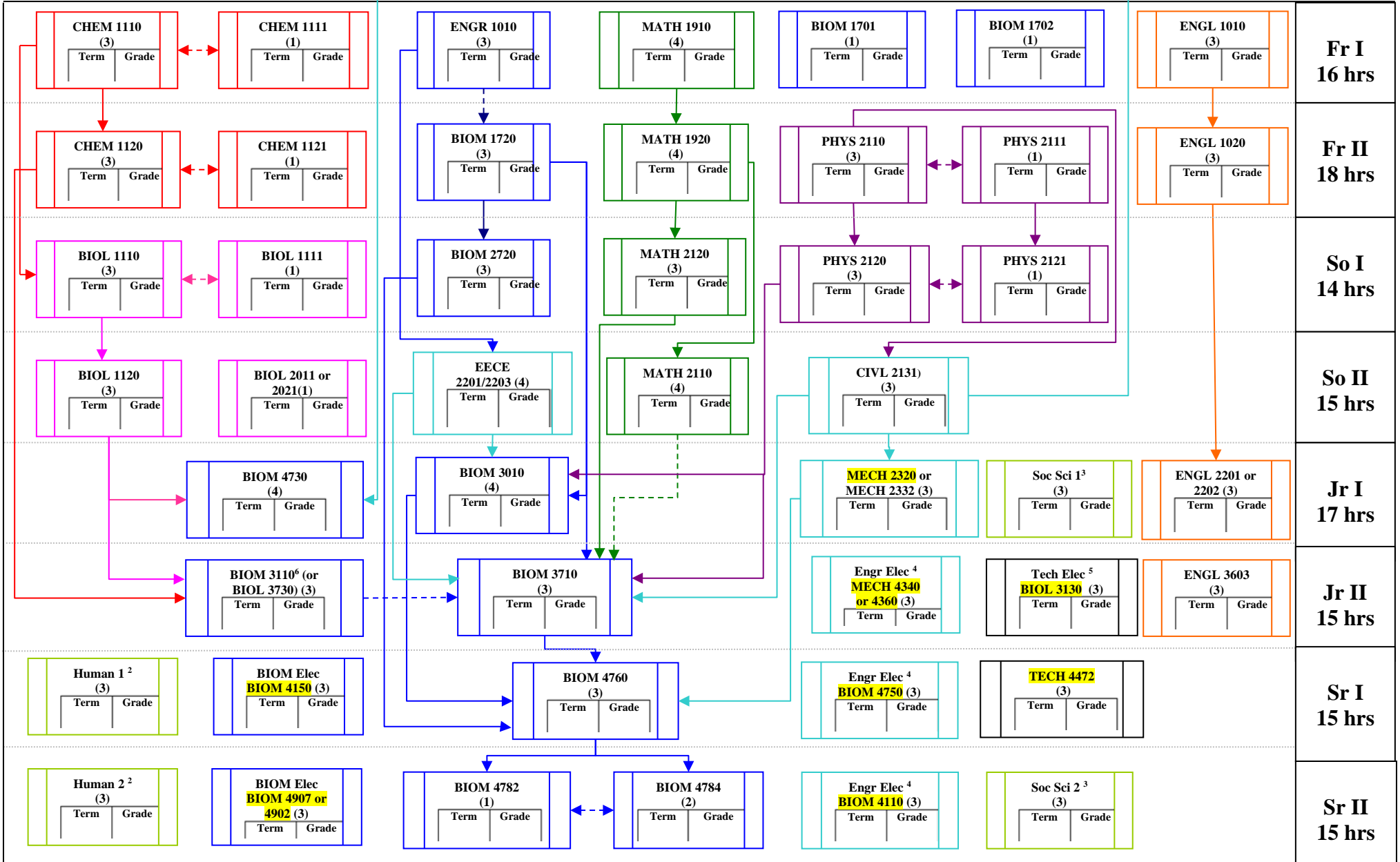
- 1] Biomaterials/Tissue Engineering;
- 2] Bioelectrical Devices and Systems;
- 3] Biomechanics;
- 4] BioSensor Devices and Systems
- 5] BioImaging
- 6] Pre-medical Studies*
- 7] General.

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.

B.S BIOMEDICAL ENGINEERING DEGREE PROGRAM: Biomaterials/Tissue Engr Focus (Begin Fall 2023)

Name: _____ UID: _____ Advisor: _____ Date of beginning program: _____



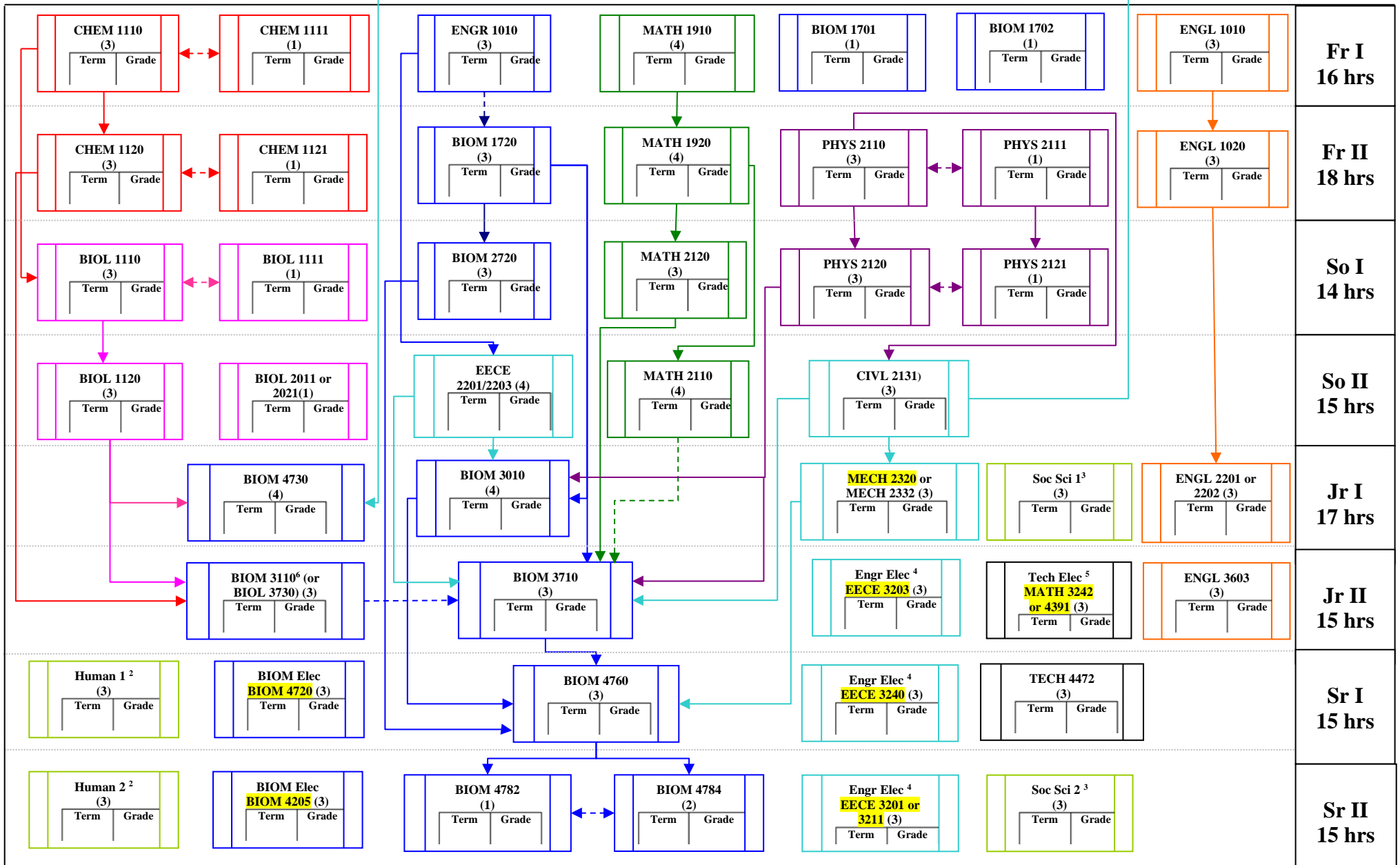
1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
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: _____ UID: _____ Advisor: _____ Date of beginning program: _____



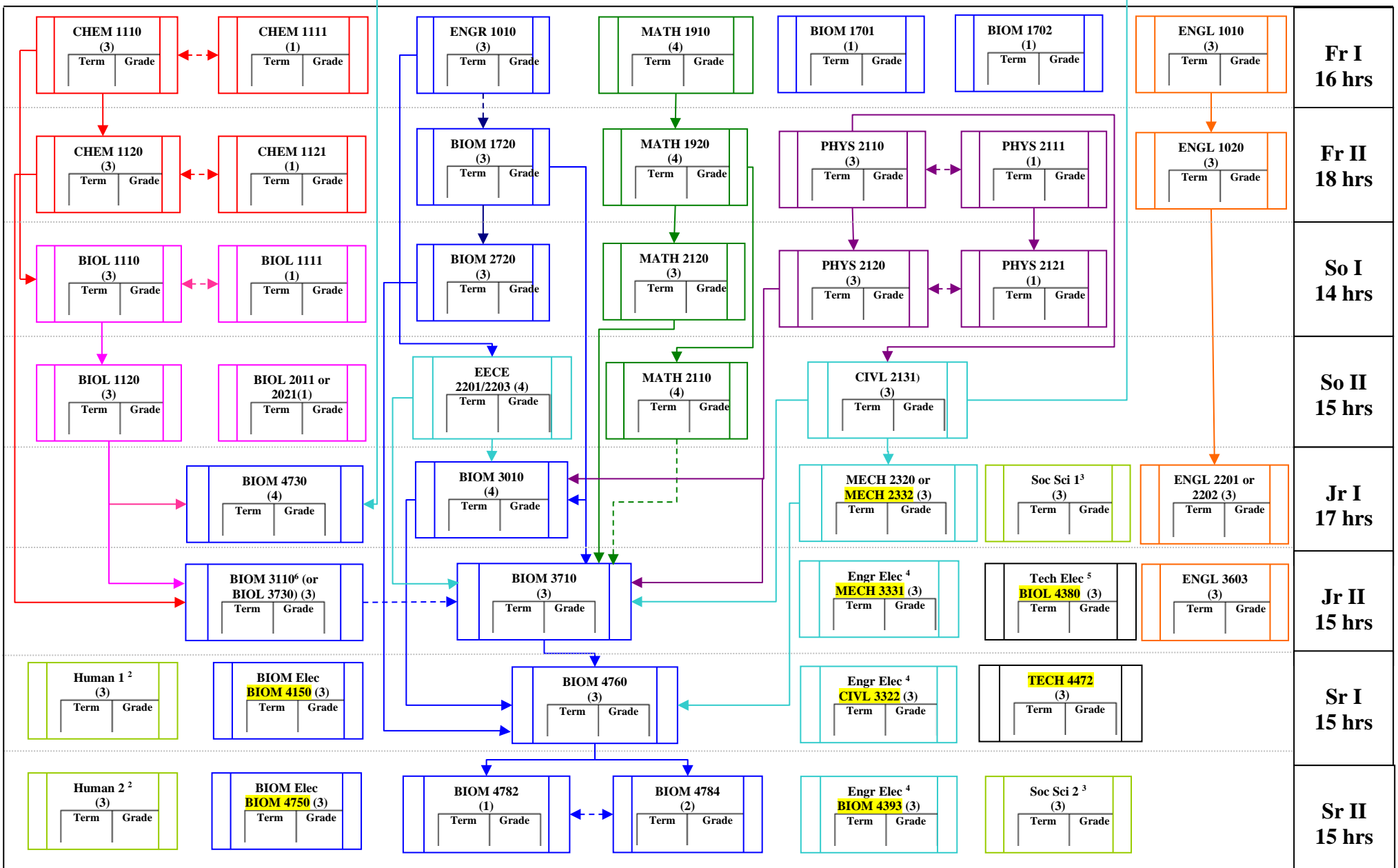
1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
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: Biomechanics Focus (Begin Fall 2023)

Name: _____ UID: _____ Advisor: _____ Date of beginning program: _____

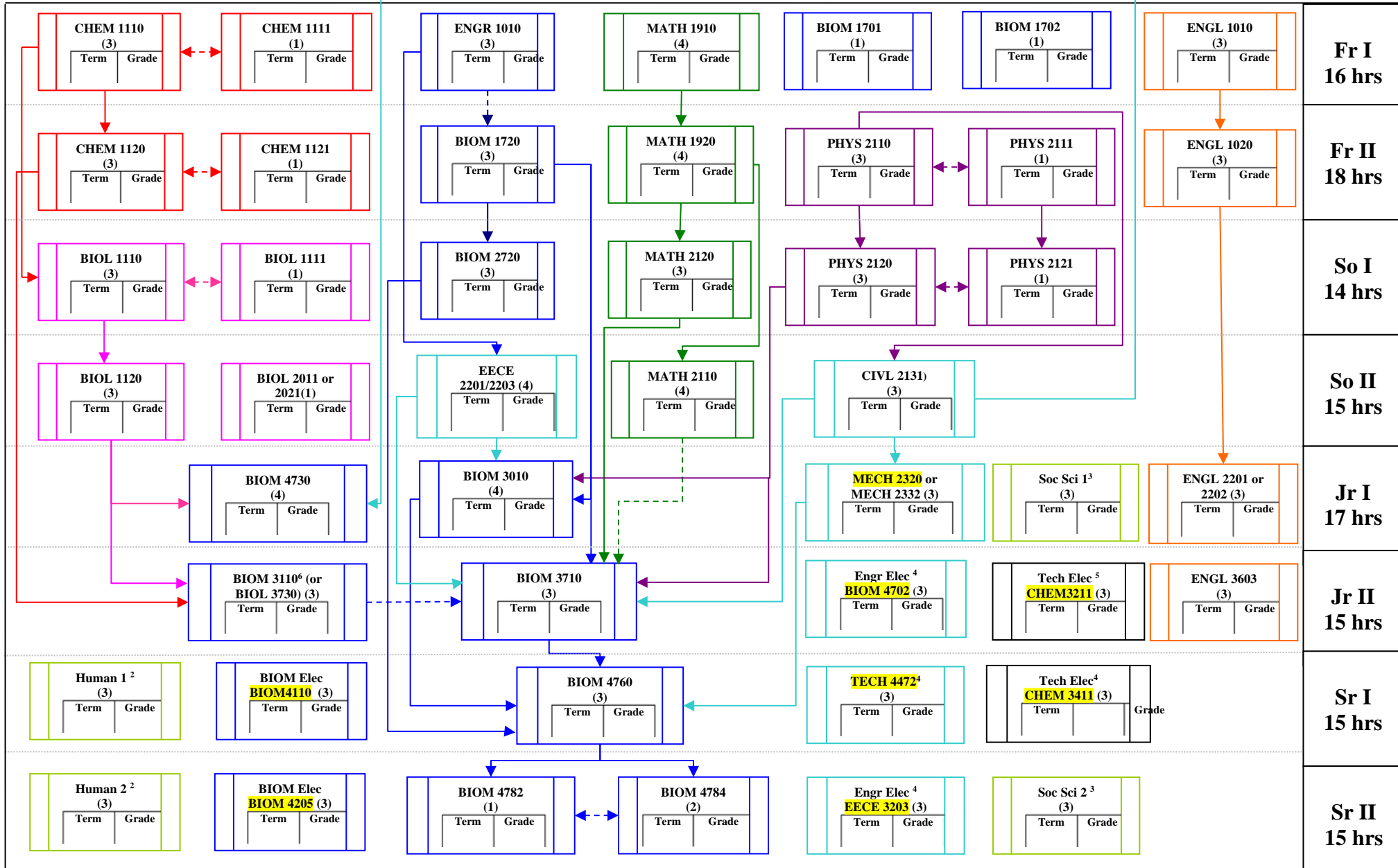


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
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

B.S BIOMEDICAL ENGINEERING DEGREE PROGRAM: Biosensors & Devices Focus (Begin Fall 2023)

Name: _____ UID: _____ Advisor: _____ Date of beginning program: _____

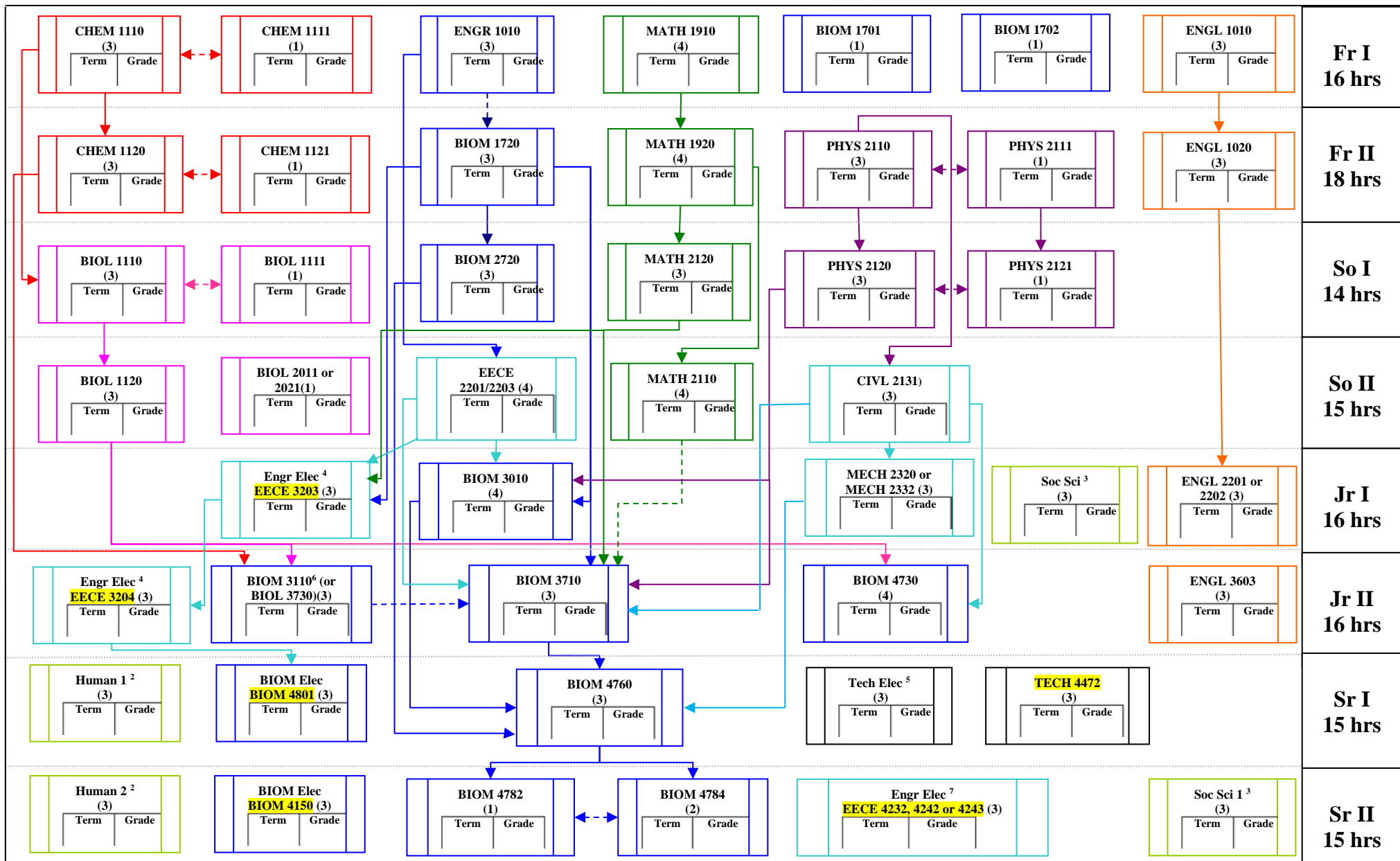


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
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

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

Name: _____ UID: _____ Advisor: _____ Date of beginning program: _____



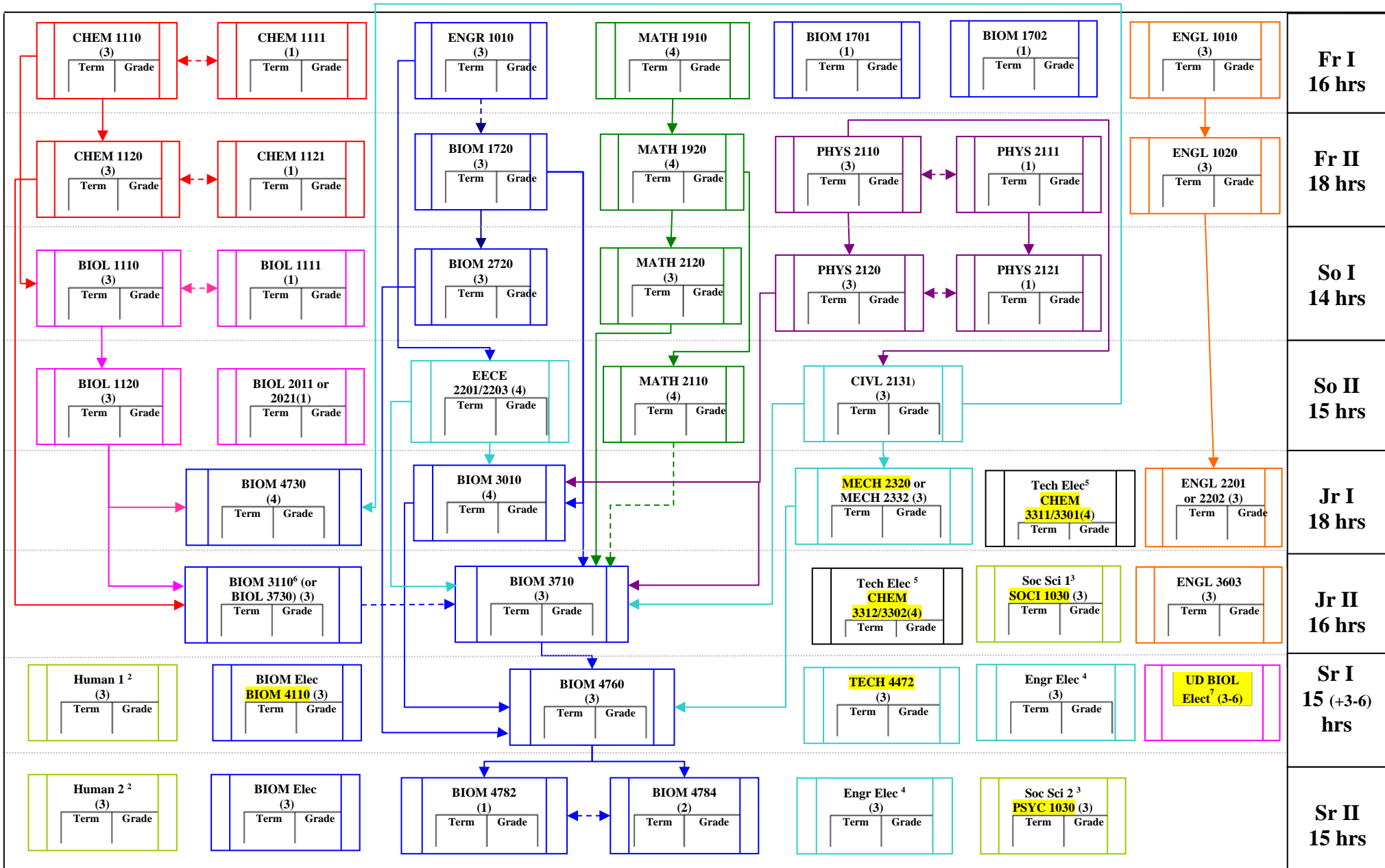
1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
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
7. Choose One from highly recommended (3hrs: BIOM 4150: Engr Tools Design Med Devices; EECE 4232: Discrete Signal Process, 4242: Electro-Optics, or 4243: Linear Optical Systems)

Total hours = 125

updated March 2023

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

Name: _____ UID: _____ Advisor: _____ Date of beginning program: _____

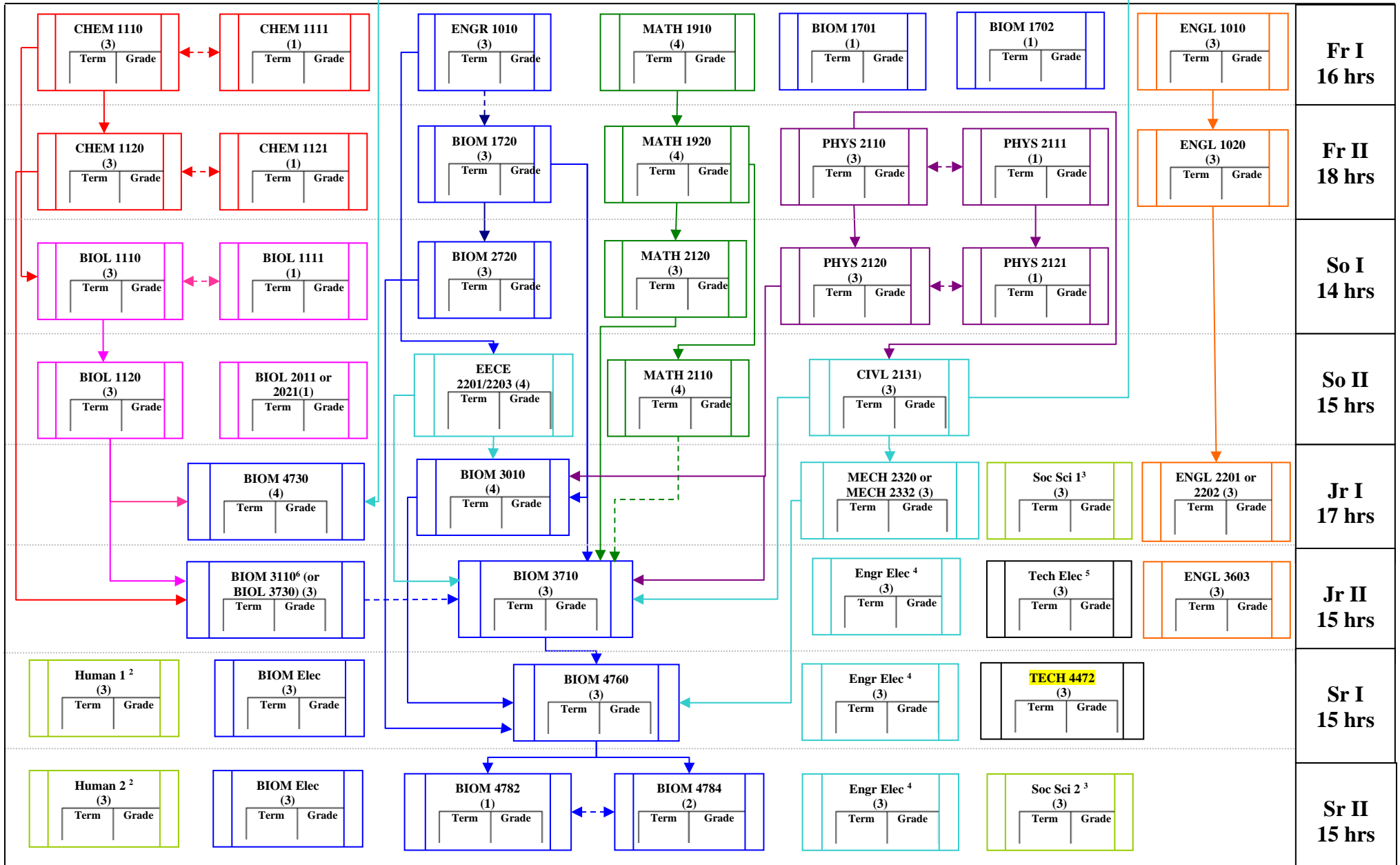


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
 2. 6 hours of Humanities from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=10212
 3. 6 hours of Social Science from approved list: see university catalogue - (Intro to Soc and Gen Psych 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 Biology/Chemistry (3-6hrs) additional course work (e.g. BIOL 3130, BIOL 4445, BIOL 3500, BIOL 3072, CHEM 4511)

Total hours = 127+*
 *w/additional course work, total hours may >130, though only 125hrs are needed for BS degree

B.S BIOMEDICAL ENGINEERING DEGREE PROGRAM: GENERAL (Begin Fall 2023)

Name: _____ UID: _____ 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&poiid=10212
3. 6 hours of Social Science from approved list. https://catalog.memphis.edu/preview_program.php?catoid=26&poiid=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