

FLOWCHARTS FOR BIOMEDICAL ENGINEERING FOCUS AREA DEGREE PLANNING

The B S in Biomedical Engineering degree has nine (7) electives that may be used in developing program of study to meet individual student career goals. These include two (2) biomedical engineering (BIOM) electives, four (3) engineering electives and two (2) technical electives.

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 electives 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:

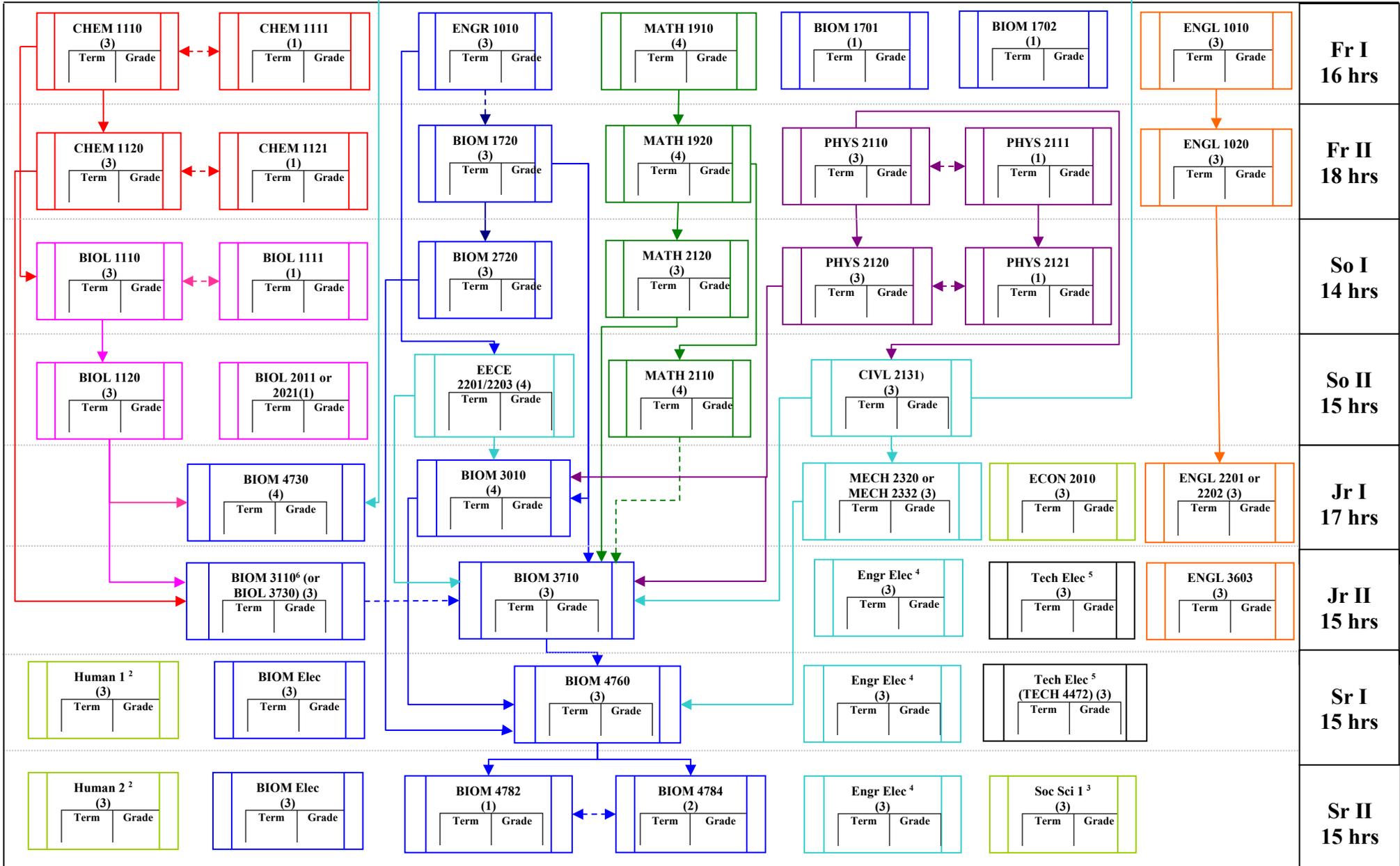
- 1] Biomaterials/Tissue Engineering;
- 2] Bioelectrical Devices and Systems;
- 3] Biomechanics;
- 4] BioSensor Devices and Systems.

It is not necessary for students to select a focus area since students can be well served by choosing topics from each focus area or can develop other areas of focus. 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.

Focus areas are not official and students may develop curriculum to overlap/integrate one or more focus areas for their particular career goals.

B S in BIOMEDICAL ENGINEERING DEGREE PROGRAM: GENERAL (Begin Fall 2021)

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. http://www.engr.memphis.edu/bme/docs/advising_guide.pdf (Under Additional Information for BME and University Curriculum; pg.9)
3. 3 hours of Social Science from approved list. http://www.engr.memphis.edu/bme/docs/advising_guide.pdf (Under Additional Information for BME and University Curriculum; pg. 10)
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 Oct 2021

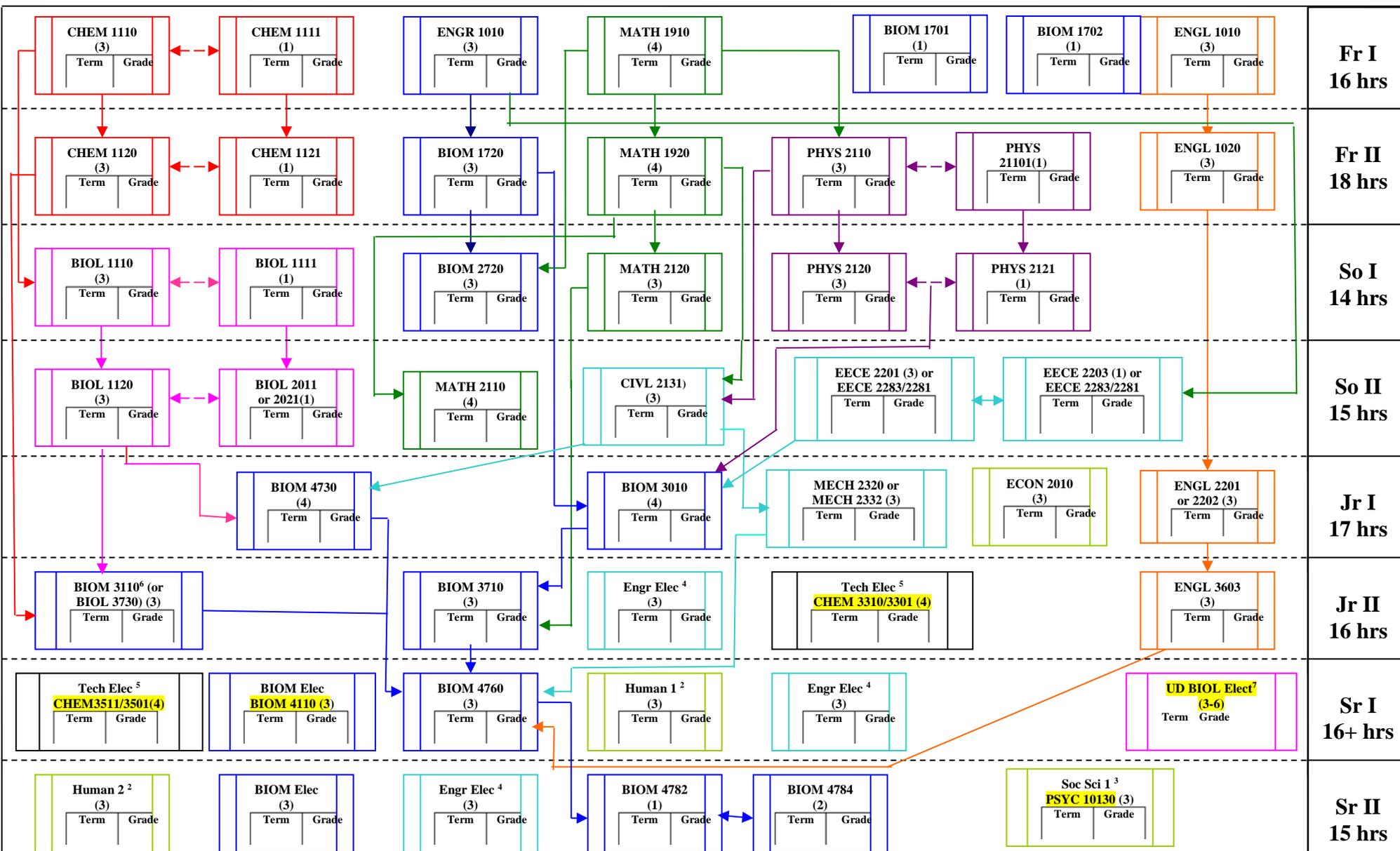
B S in BIOMEDICAL ENGINEERING DEGREE PROGRAM: PRE-MED (Begin Fall 2018)

Name: _____

UUID: _____

Advisor: _____

Date of beginning program: _____

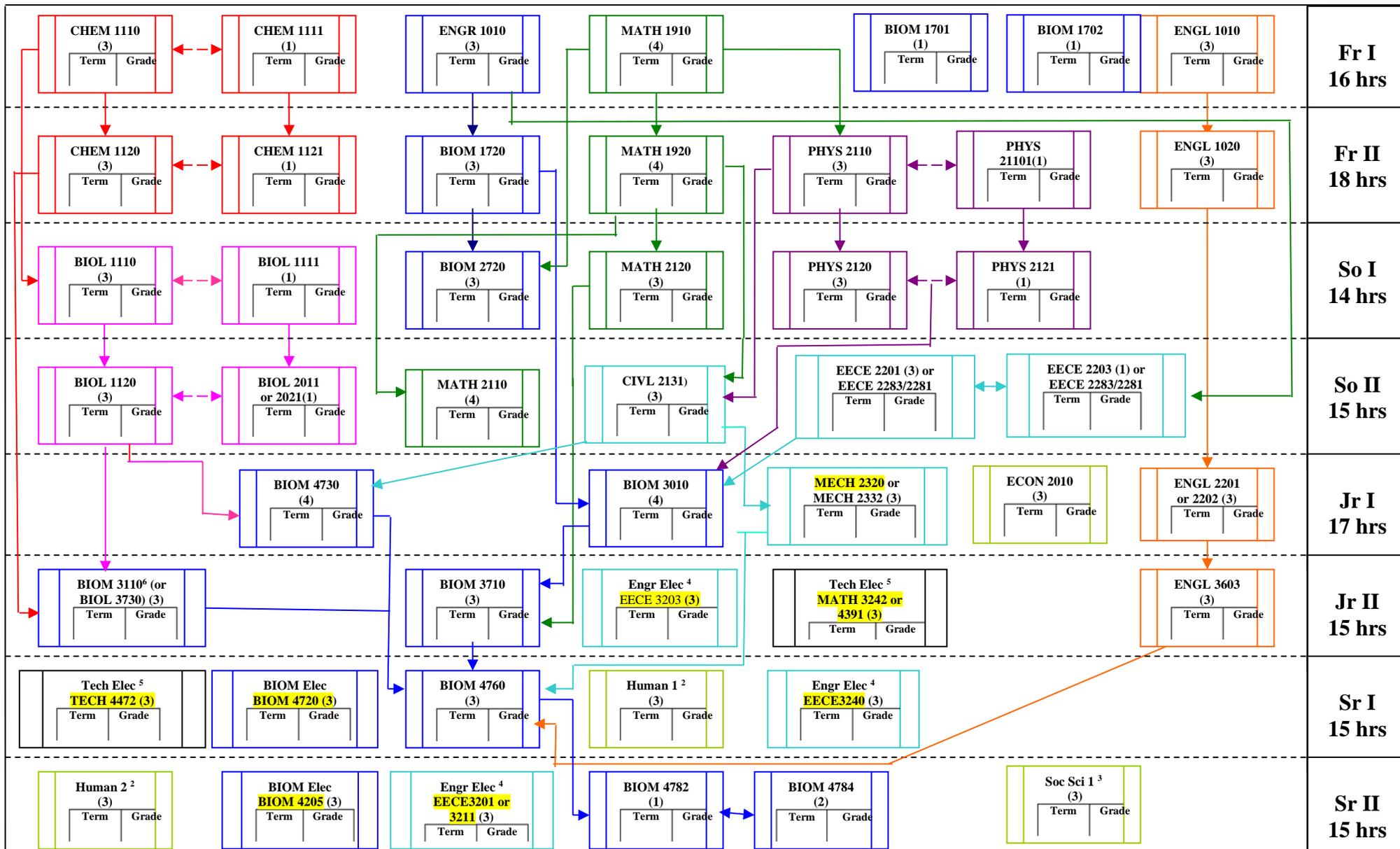


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities *from approved list*. – see university catalogue
3. 3 hours of Social Science *from approved list* – see university catalogue – (Intro to Soc and/or Gen Psych highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course.
5. Foundations of Organic Chemistry and Foundations of Bio-organic Chemistry are required for medical school
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only
7. One to two Upper Division Biology/Chemistry (3-6hrs) addition 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 in BIOMEDICAL ENGINEERING DEGREE PROGRAM: BIOELECTRICITY FOCUS (Begin Fall 2018)

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

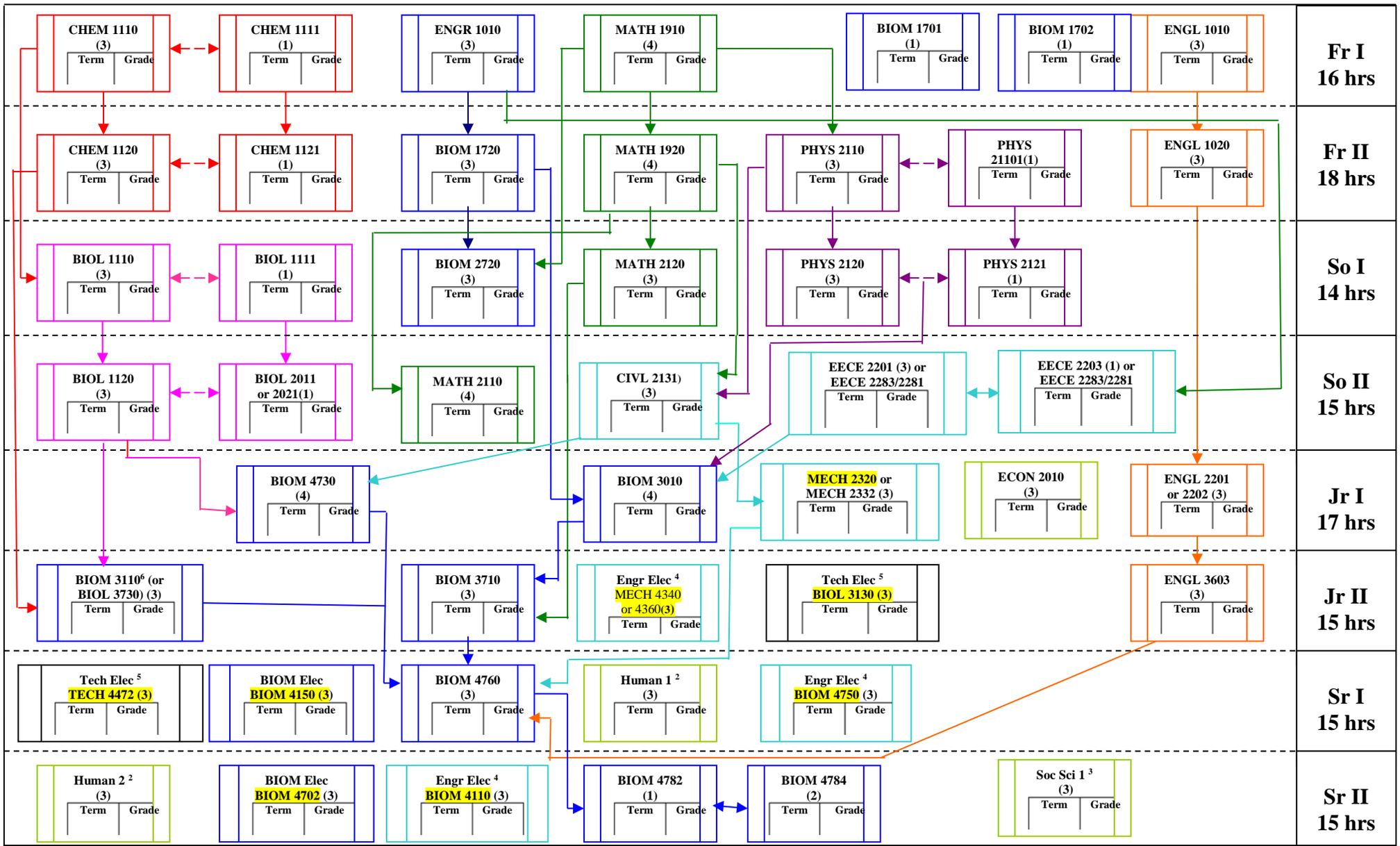


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities *from approved list*. – see university catalogue
3. 3 hours of Social Science *from approved list* – see university catalogue – (Intro to Soc and or Gen Psych highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course.
5. Foundations of Organic Chemistry and Foundations of Bio-organic Chemistry are required for medical school
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only
7. One to two Upper Division Biology/Chemistry (3-6hrs) addition course work (e.g. BIOL 3130; BIOL 4445; BIOL 3500; BIOL 3072; CHEM 4511)

Total = 125

B S in BIOMEDICAL ENGINEERING DEGREE PROGRAM: BIOMATERIALS/TISSUE ENGR FOCUS (Begin Fall 2018)

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

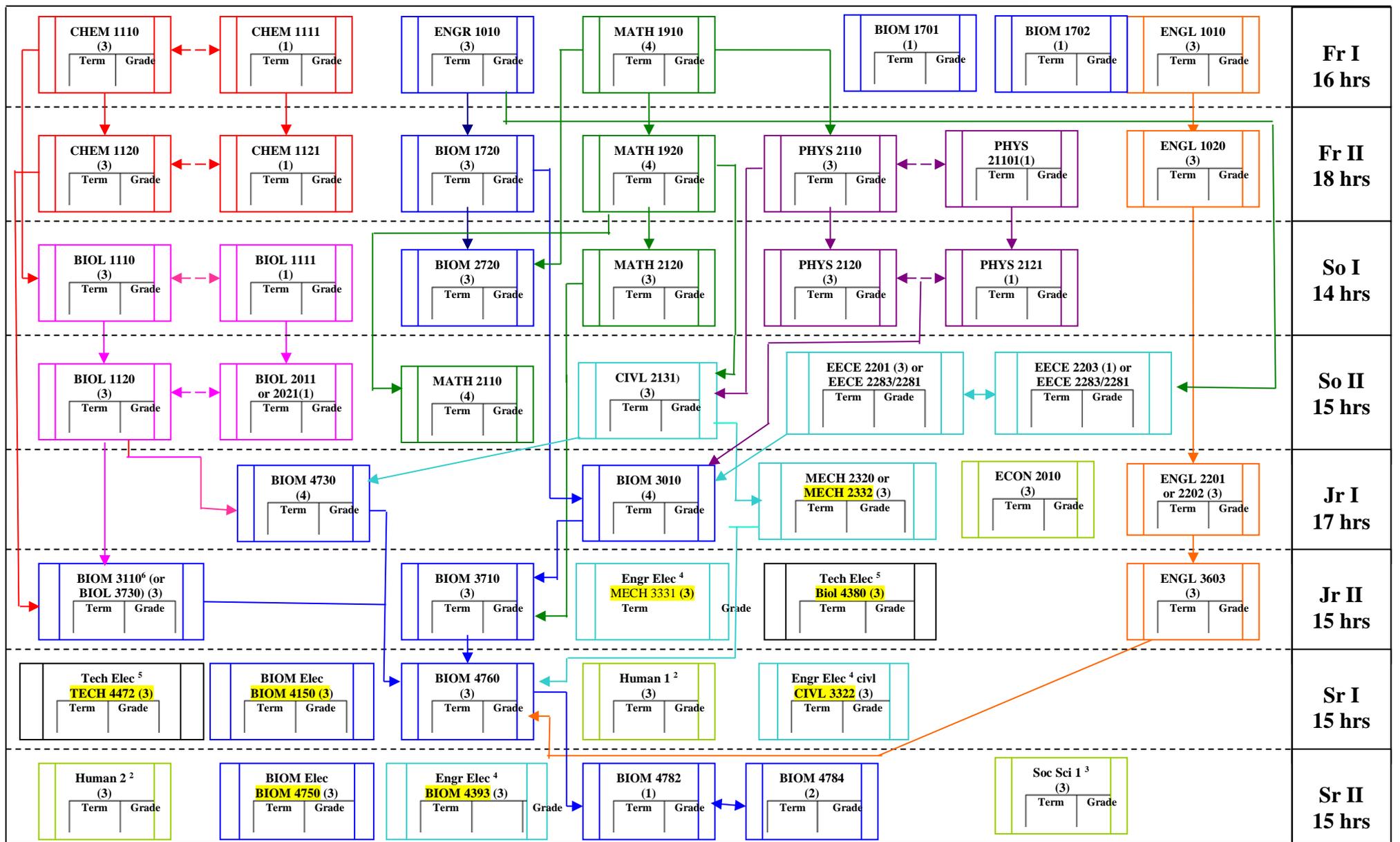


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list. – see university catalogue
3. 3 hours of Social Science from approved list – see university catalogue – (Intro to Soc and or Gen Psych highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course.
5. Foundations of Organic Chemistry and Foundations of Bio-organic Chemistry are required for medical school
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only
7. One to two Upper Division Biology/Chemistry (3-6hrs) addition course work (e.g. BIOL 3130; BIOL 4445; BIOL 3500; BIOL 3072; CHEM 4511)

Total = 125

B S in BIOMEDICAL ENGINEERING DEGREE PROGRAM: BIOMECHANICS FOCUS (Begin Fall 2018)

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

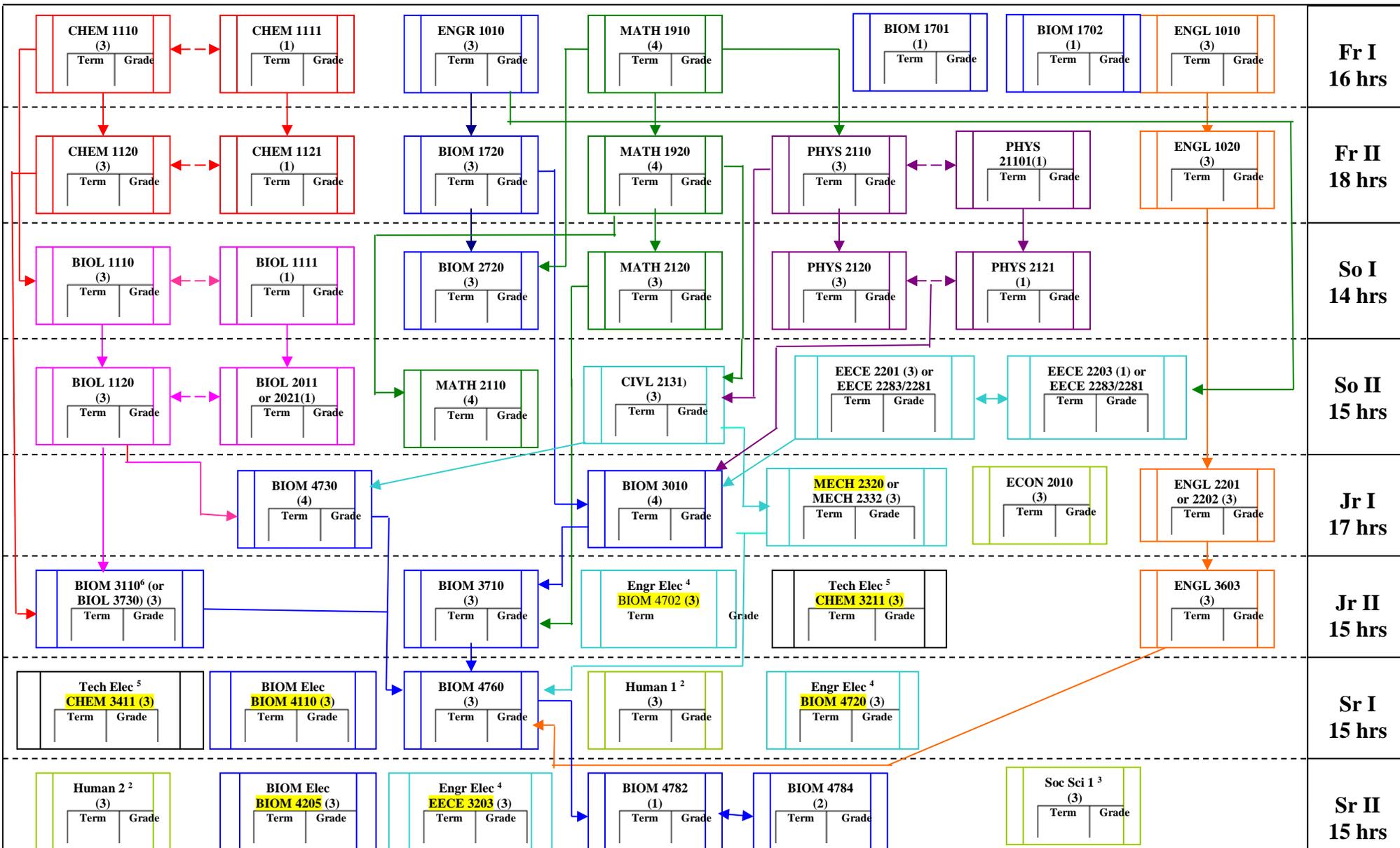


1. "C-" or better in all engineering, math, physics, chemistry, and biology courses used toward graduation.
2. 6 hours of Humanities from approved list - see university catalogue
3. 3 hours of Social Science from approved list - see university catalogue - (Intro to Soc and or Gen Psych highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course. [CIVL 3322 Mech Mats - require MECH 2332 choice]
5. Other highly recommended Tech Elective options: MATH 4721 or BIOL 3620 Comp Vert Anatomy or 3130 Cell Biol
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

Total = 125

B S in BIOMEDICAL ENGINEERING DEGREE PROGRAM: BIOSENSORS & DEVICE SYSTEMS FOCUS (Begin Fall 2018)

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*. – see university catalogue
3. 3 hours of Social Science *from approved list* – see university catalogue – (Intro to Soc and or Gen Psych highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course.
5. Foundations of Organic Chemistry and Foundations of Bio-organic Chemistry are required for medical school
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only
7. One to two Upper Division Biology/Chemistry (3-6hrs) addition course work (e.g. BIOL 3130; BIOL 4445; BIOL 3500; BIOL 3072; CHEM 4511)

Total = 125

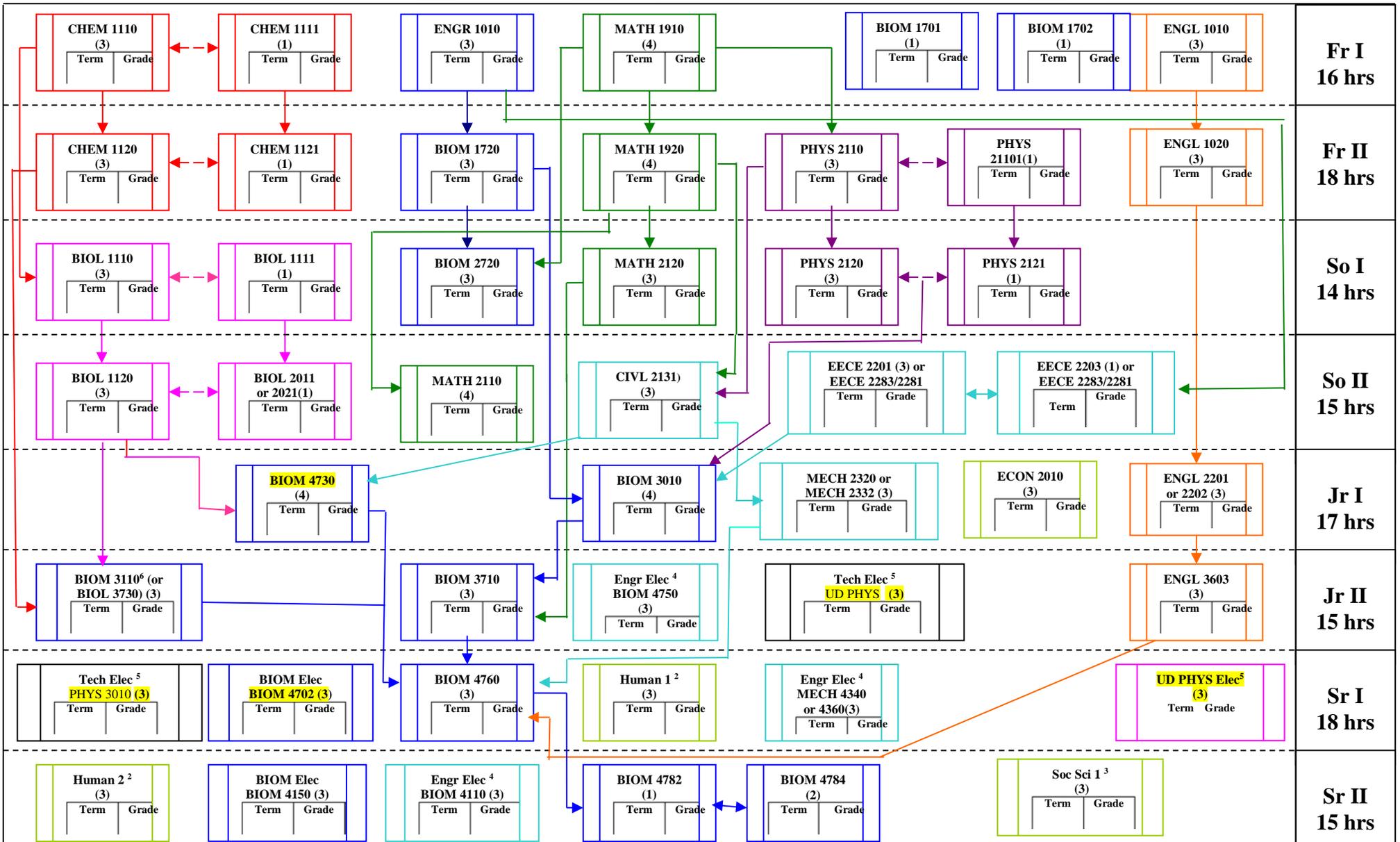
B S in BIOMEDICAL ENGINEERING DEGREE PROGRAM: 2ND MAJOR PHYSICS & MATERIAL SCIENCE (Begin Fall 2018)

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*. – see university catalogue
3. 3 hours of Social Science *from approved list* – see university catalogue – (Intro to Soc and or Gen Psych highly recommended for medical school)
4. Must be an upper division (3XXX/4XXX) Engineering course.
5. PHY 3010 is required, choose from PHYS 3111; 4020; 4040; 47020; 4720; 4820
6. BIOM 3110 is Spring term only and BIOL 3730 is Fall term only

Total hours = 128*
 *extra UD Physics elective adds 3 additional course credit hrs, though only 125hrs are needed for BS degree