BME Curriculum Checklist

Name/Class:

Focus Area:

Course Plan for Class of '24 (04.01.21) Credits Semester

Core Requirements (34) Career Exploration in BME* 0 Fr,S-Sr,S 580.111 Biomedical Engineering and Design 2 Fr, F 580.151 Structural Biology of Cells 3 Fr, S 580.153 Structural Biology of Cells Lab Fr, S 1 580.221 Molecules and Cells 4 So, F 580.241 Statistical Physics 2 So,F or J,F 580.242 Biological Models and Simulations 2 So,S or J,S 580.243 Linear Signals and Systems 2 So,F or J,F 580.244 Nonlinear Dynamics of Biological Systems 2 So,S or J,S 580.246 Systems and Controls 2 So,S or J,S 580.248 Systems Biology of the Cell 2 So,S or J,S 2 580.475 Biomedical Data Science Jn, F 580.477 Biomedical Data Science Lab Lab 1 Jn, F 580.485 Computational Medicine: Cardiology 2 Jn, F 580.487 Computation Medicine: Cardiology Lab 1 Jn, F 580.4XX Core Elective I** 3 Jn, S 580.4XX Core Elective II** 3 Jn, S

Physics & Chemistry (18)			
Required for all BME majors.			
171.101 General Physics for Physical Science Majors I	4	Fr, F	
173.111 General Physics I Lab	1	Fr, F	
171.102 General Physics for Physical Science Majors II	4	Fr, S	
173.112 General Physics II Lab	1	Fr, S	
030.101 Introductory Chemistry I	3	Fr, F	
030.105 Introductory Chemistry Lab I	1	Fr, F	
030.102 Introductory Chemistry II	3	Fr, S	
030.106 Introductory Chemistry Lab II	1	Fr, S	

Mathematics (20)** Required for all BME majors.			
110.108 Calculus I	4	Fr, F	
110.109 Calculus II	4	Fr, S	
110.202 Calculus III	4	So, F	
553.291 Linear Algebra & Differential Equations	4	b4 So, S	
Advanced Statistics (Prob/Stat is typical)	4	So, S	
**** LinAlg + DiffEq	8		

Computing (3)

An introductory programming course must be taken	
(see handbook for approved courses).	
500 11x Gateway Computing (14VA Matlab Python)	3

* Note: Students will be enrolled via a Blackboard Community page beginning Freshman spring and every semester throughout their remaining semesters in the program.

- ** Note: Pick 2 courses (580.424, 580.427, 580.452, 580.453, 580.454, 580.494). Courses taken in excess of this requirement can be used in the focus area list if applicable.
- *** Note: Completion sequence of required math courses is based on student's placement from AP and/or transfer credit. See sample programs for more information.
- **** Note: Students planning to minor or double major in AMS should take the separate Linear Algebra (AS.110.201) and Differential Equations (AS.110.302).

Other Notes:

- Fr = Freshman, So = Sophomore, Jn = Junior, Sn = Senior,

F = Fall, S = Spring, by = take before that semester.

- Semesters that have already been typed in are the recommended ones for that particular course.

Credits Semester 🖌

BME Focus Area and Design (27) At least 21 credits chosen from Focus Area Course Sheets.

At Least 6 credits chosen from Approved Design Course List.

*3 credits from Advanced Design Team (400-level) or Advanced Focus Area Research (580.56x) may be counted. Advanced Design Team and Adv Focus Area Research requires an additional approval step. *3 or fewer credits can be chosen from the non-ULE list for the focus area course list - research, the first half of Design Team, or 580.580. *3 or fewer credits can be chosen from list of 200-level focus area course list (available in certain focus areas). Focus Area Total (21) Design Total (6)

Other Electives (9)

These can be **any** courses taken at JHU, but are often pre-requisite courses or courses required for medical school (i.e. Orgo I, Orgo II, and Orgo Lab).

Humanities/Social Sciences (18)

Courses need an H or S designation

At least 1 course must be 300-level. 300-level:

THE FOLLOWING BOXES (Writing Intensive) DOES NOT REQUIRE ANY EXTRA CREDITS, THEY CAN BE SATISFIED USING COURSES THAT ARE IN OTHER BOXES:

Built-In Requirement: Writing Intensive Courses st 6 credits of courses with the "W" designation must be completed (courses filled into he Electives or Humanities/Social Sciences boxes may be used here).

TOTAL CREDITS (≥129 needed): —