BME Curriculum Checklist

Name/Class: _____

Focus Area: _____

Course Plan for Class of '26 (07.01.22)	Credits	Semester	✔

Core Requirements (34)
Required for all BME majors.

	Credits	Semester	✔
Career Exploration in BME*	0	So,F-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	1	Fr, S	
580.221 Biochemistry and Molecular Engineering	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	
580.475 Biomedical Data Science	2	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.

	Credits	Semester	✔
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.

	Credits	Semester	✔
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).

	Credits	Semester	✔
500.11x Gateway Computing (JAVA, 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.

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
At least 6 credits of courses with the "W" designation must be completed (courses filled into the Electives or Humanities/Social Sciences boxes may be used here).

TOTAL CREDITS (≥129 needed): _____