Revised 4/14/2017

BME Non-Premed Advising Sheet

Student Name: _____ ID: _____

Courses	Credit hour	Course Completed (Term/Year)	Course To Take (Term/Year)
Freshman Year (Fall)			
WTSN 111 Intro to Eng. Design (Fa)	2		
WTSN 103 Eng. Communications I (Fa)	2		
MATH 224/225 Calculus I (Fa, Sp, Su)	4		
CHEM 111(L) Chemical Principles (Fa, Sp)	4		
Gen Ed Elective (A, G, N, P)	4		
Body /Wellness	1		
Total	**17**		
Freshman Year (Spring)			
WTSN 112 Intro to Eng. Analysis (Sp) Prereq.: WTSN 111	2		
WTSN 104 Eng. Communications II (Sp) Prerequisite: WTSN 103	2		
MATH 226/227 Calculus II (Sp, Su, Fa) Prerequisite: MATH 225	4		
General Ed Elective (A, G, N, P) (Fa, Sp, Su) OR Course: BIOL 118	4		
PHYS 131 Calculus-based Physics I (Fa, Sp) Prerequisite: MATH 225	4		
Body /Wellness	1		
Total	**17**		
Sophomore Year (Fall)			
BME 201 Introduction to Biomed. Eng. (Fa) Prerequisites: WTSN 112, MATH 225, PHYS 131 Co-requisite: BIOL 118	3		
MATH 324 Differential Equations (Fa, Sp, Su) Prerequisite: MATH 227	4		
BIOL 118 Cell & Mol. Bio. (Fa, Sp, Su)	4		
CHEM 231 Organic Chemistry (Fa, Sp, Su) Prerequisite: CHEM 111 or equivalent	4		
Total	**15**		
Sophomore Year (Spring)			
PHYS 132 Calculus-based Physics II (Fa, Sp, Su) Prerequisite: PHYS 131	4		
BME 213 Biomolecule Engineering (Sp) Prerequisites: BIOL 118, BME 201, CHEM 111, MATH 324	3		
BME 203 Biomed. Modeling & Numerical Methods (Fa) Prerequisites: MATH 227, BME 201	3		
MATH 323 Calculus III (Fa, Sp, Su) Prerequisite: MATH 227	4		
Gen Ed Elective (A, G, N, P)	4		
Total	**18**		
Junior Year (Fall)			
BME 318 Biomechanics (Fa) Prerequisites: PHYS 131, MATH 227	3		
ME 331 Thermodynamics (Fa) Prerequisites: MATH 323, MATH 324, PHYS 131	3		
BME 324 (L) Bioinstrumentations (Fa) Prerequisites: BME 201, BME 203, BME 213	4		
BME Depth or Science Elective*	3		

Course:			
BME 313 Biomaterials (Fa) Prerequisites: BIOL 118, CHEM 231, BME 213	3		
Total	**16**		
Junior Year (Spring)			
BME 351 Biomedical Engineering Lab (Sp) Prerequisites: BME 213, 318, 324 Co-requisite: BME 303	1		
BME 303 Bio-fluid Mechanics (Sp) Prerequisites: PHYS 131, MATH 227, BME 318	3		
BME 340 Bioinformatics and Biostatistics (Sp) Prerequisites: BIOL 118, BME 203	3		
BIOL 311 Cell Biology (Sp) Prerequisites: BIOL 118, CHEM 111 **OR** BIOL 401 Molecular Genetics Prerequisites: BIOL 118, CHEM 111, CHEM 231 Co-requisite: CHEM 332	4		
Gen Ed Elective (GER-AR)	4		
Total	**15**		
Senior Year (Fall)			
BME 450 Biomedical Engineering Design I (Fa) Prerequisites: BME 318, BME 351 Co-requisite: BME 413	3		
BME 413 Biomedical Transport Phenomena (Fa) Prerequisites: BME 303, BME 318, ME 331	3		
BME 433 Human Physiology (Fa) Prerequisites: BIOL 118, CHEM 231	3		
BME Depth elective **Course:**	3		
BME 432 Ethics in Engineering (Gen-H) Co-requisite: BME 450	3		
Total	**15**		
Senior Year (Spring)			
BME 451 Biomedical Engineering Design II (Sp) Prerequisite: BME 450	3		
BME Depth or Science Elective * **Course:**	3		
BME Depth elective **Course:**	3		
CHEM 332 **OR** CHEM 341 **OR** BCHM 403** **Course:**	4		
Total	**13**		

Note: A- Aesthetics; G- Global Interdependencies; N- Social Science; P- Pluralism

Student Signature: _____ **Date:**_____

Advisor Signature: _____ **Date:**_____

Disclosure: This form does not override pre-req requirements for any course. Students are required to meet all pre-req's regardless of signed advising form.

***Take either a BME depth or a science elective from the BME department approved list. Science elective:** PSYC 111, PSYC 220 (pre-requisite: PSYC 111), ANTH 243/ ANTH 240 (summer and winter online courses), BCHM 403, any CHEM 300 level and above; any BIOL 300 level and above. BME depth electives are prescribed in each track.

BME Depth electives and tracks:

Biomaterials and Bio-pharmaceutical Technology Track

- BME 483 Tissue Engineering (Fa): **prerequisites-**BME 313, BME 201, BIOL 118; co-requisite-BME 433
- BME 473 Advanced Biomaterials and Biocompatibility (Sp): **prerequisite-**BME 313
- BME 463 Bioprocess engineering (Sp): **prerequisites-**CHEM 231, BME 213
- BME 442 Nanotechnology and Drug Delivery (Fa): **prerequisite-**BME 313

Biomedical Devices and Instrumentations Track

- BME 424 Bioimaging (Sp): **prerequisite-**BME 324
- BME 420 Biomedical devices and diagnostics (Fa): **prerequisite**-BME 324, BME 351
- EECE 260 Circuits (Sp)
- BME 443 Quantitative Instrumental Bioanalysis (Sp): **prerequisite-**BME 324, BME 351
- EECE 301 Signals and Systems (Fa): **prerequisite**-EECE 260 and MATH 324

Computational Biosystems Track

- BME 470 Advanced Bioinformatics (Fa): **prerequisite-**BME 340
- BME 453 Biomedical Data Management and Regulatory Sciences (Sp): **prerequisite-**BME 340
- BME 472 Experimental Design and Statistical Analysis (Fa): **prerequisites-**MATH 323, BME 203
- ISE 314 Computer Program for Engineers (Fa)
- ISE 434 Fundamentals of Health System (Fa)
- ISE 439 Human factors Eng Healthcare (Sp)

****CHEM 332 Organic Chemistry II: **prerequisite-**CHEM 231
CHEM 335 Organic Chemistry Lab: **prerequisite-**CHEM 231
CHEM 341 Intermediate Inorganic Chemistry: **prerequisites-**CHEM 107 and CHEM 108 or CHEM 111
BCHM 403 Biochemistry: **prerequisites-**BIOL 118, CHEM 107 and 108 (or 111), CHEM 231 and 332.

Note: If you preferred to take a non-BME course somewhere else and wished to transfer it for BME B.S. degree at the Binghamton, then the course must be listed in https://www.binghamton.edu/admissions/apply/transfer/coursework.html for equivalency prescribed by the Binghamton University.