Concurrent Majors in Biomedical (BME) and Mechanical Engineering (M E)

9 Semesters: Total Credits = 148

PROGRAM REQUIREMENTS

First		CR
MATH 140	***Calculus with Analytic Geometry I***	4
CHEM 110	***Chemical Principles I***	3
CHEM 111	Experimental Chemistry I	1
EDSGN 100	Introduction to Engineering Design	3
ENGL 015	Rhetoric and Composition	3
FYS	First Year Seminar	1
ECON 102/104	Micro or Macro Economics (GS)	3
	Total	18

Second		CR
MATH 141	***Calculus with Analytic Geometry II***	4
PHYS 211	***General Physics: Mechanics***	4
CHEM 112	Chemical Principles II	3
CHEM 113	Experimental Chemistry II	1
BIOL 141	**Physiology (or BIOL 240W)**	3
BIOL 142	**Physiology Lab (240W has a lab)**	1
GHA	Health & Physical Activity	1.5
	Total	17.5

Third Semester		CR
MATH 251	***Ordinary and Partial Differential Equations***	4
E MCH 210	**Statics and Strength of Materials**	5
CMPSC 200	Programming for Engineers with MATLAB	3
PHYS 212	***General Physics: Electricity and Magnetism***	4
	Total	16

Fourth Semester		CR
MATH 230	Calculus and Vector Analysis	4
MATH 220	Matrices	2
E MCH 212	**Dynamics**	3
BME 201	**Fundamentals of Cells and Molecules**	3
E MCH 315	Mechanical Response of Engineering Materials	2
E MCH 316	Exp. Det. of Mechanical Response of Materials	1
	Total	15

Fifth Semester		CR
M E 300	**Engineering Thermodynamics I**	3
PHYS 214	Wave Motion and Quantum Physics	2
M E 360	**Mechanical Design**	3
BME 303	**Bio-Continuum Mechanics**	3
BME 301	**Analysis of Physiological Systems**	4
GHA	Health & Physical Activity	1.5
		16.
	Total	5

Sixth Semester		CR
MATSE 259	Properties and Processing of Eng. Materials	3
BME 409	**Biofluid Mechanics**	3
BME 401	**Numerical Simulations in BME**	3
BME 402	**BM Instrumentation and Measurements**	3
BME 403	**Biomedical Instrumentation Laboratory**	1
GEN ED	GA, GH, or GS Course	3
	Total	16

Seventh Semester		CR
IE 312	Product Design and Manufacturing Processes	3
M E 370	**Vibration of Mechanical Systems**	3
BME 440	BME Professional Seminar	1
M E 340	**ME Design Methodology**	3
ENGL 202C	Technical Writing	3
BME 429	Biomechanics and Techniques Lab	2
	Total	15

Eighth Semester		CR
BME Related Elective	Must satisfy ETE Requirement in ME	3
BME 450W	Senior Design (CAPSTONE)	3
M E 410	**Heat Transfer**	3
M E Lab	Choose ME 315, 325, 355 or 375	1
GEN ED	GA, GH, or GS Course	3
GEN ED	GA, GH, or GS Course	3
	Total	16

Ninth Semester		CR
BME Related Elective	See BME guidelines	3
M E 450	**Modeling of Dynamic Systems**	3
METE	M E Technical Elective	3
CAS 100A/B	Effective Speech	3
GEN ED	GA, GH, or GS Course	3
GEN ED	GA, GH, or GS Course	3
	Total	18

- Courses listed in ***boldface italic type*** require a grade of C or better for entrance to this major.
- Courses listed in **bold face type** require a grade of C or better for graduation in this concurrent majors program.
- MATH 231 and MATH 232 = MATH 230
- A Mechanical Engineering Technical Elective (METE) is any three-credit, 400-level mechanical engineering course, not required for the major. M E 494 or M E 496 may not be used.
- A BME Related Elective is any Option (Biochemical, Device and Imaging, Biomechanical, Biomaterial) Elective, any BME 400 level or BIOE 500 level course not otherwise required (may not double count), CHEM 210, CHEM 212, ENGR 295, ENGR 395, ENGR 495 (3 credits max for ENGR x95), and courses for an approved minor (E L D, ESHIP, ENTI, NANO)
- Students must take 3 credits of United State Cultures (US) and 3 credits of International Cultures (IL)

(*) BME courses are offered only in the semester shown: Fall = odd-numbered semesters, Spring = even-numbered semesters.
Updated 2/14/2019