

Student Name: _____ ID#: _____

Sample Pathway to Concurrent BSE in Bioengineering and Mechanical Engineering (143 credits) **Fall 2023**

Semester 1	Semester 2	Semester 3
<input type="checkbox"/> CHEM 134 + CHEM 134L (4) <i>Chemistry I</i> (MATH 105* or higher, H.S. chemistry) DDC GENS <input type="checkbox"/> ENGR 126 + ENGR 126L (2) <i>Engineering Computer Graphics</i> (MATH 090* or higher) <input type="checkbox"/> MATH 115 (4) <i>Calculus I</i> (MATH 105 'C-' or placement) DDC GECT <input type="checkbox"/> BENG 200 (4) <i>Anatomy and Physiology for Engineers</i> <input type="checkbox"/> COMP 105 (3) <i>Writing & Rhetoric I</i> (COMP 099 or placement) DDC GEWO	<input type="checkbox"/> CHEM 136 + CHEM 136L (4) <i>Chemistry II</i> (CHEM 134) DDC GENS <input type="checkbox"/> ENGR 100 + ENGR 100L (3) <i>Intro. To Engineering</i> (MATH 105* or higher) <input type="checkbox"/> MATH 116 (4) <i>Calculus II</i> (MATH 115 'C-') <input type="checkbox"/> BIOL 140 + BIOL 140L (4) <i>Intro to Molecular & Cellular Biology</i> (CHEM 134*)	<input type="checkbox"/> MATH 215 (4) <i>Calculus III</i> (MATH 116 'C-') <input type="checkbox"/> PHYS 150 + PHYS 150L (4) <i>Physics I</i> (Math 115*: recommended as pre-req) <input type="checkbox"/> ENGR 250 + ENGR 250R (3) <i>Engineering Materials</i> (CHEM 134, Math 115*, CHEM 136*) <input type="checkbox"/> DDC course (3) <i>GEHA</i> <input type="checkbox"/> ECON 201 or 202 (3) <i>Macroeconomics or Microeconomics</i> (MATH 105) DDC GESB
Semester 4	Semester 5	Semester 6
<input type="checkbox"/> MATH 228 (4) <i>Diff Eq w/ Linear Algebra</i> (Math 116 'C-') <input type="checkbox"/> PHYS 151 + PHYS 151L (4) <i>Physics II</i> (PHYS 150, MATH 116*) fulfills DDC GENS <input type="checkbox"/> ENGR 216 (2) <i>Computer Methods</i> (ENGR 100, ENGR 126*, Math 228*) <input type="checkbox"/> ME 260 + ME 260R (4) <i>Design Stress Analysis</i> (PHYS 150, ENGR 250*, MATH 215*) <input type="checkbox"/> ME 230 + ME 230R (4) <i>Thermodynamics</i> (PHYS 150, ENGR 250*, MATH 215)	<input type="checkbox"/> ME 325 (4) <i>Thermal Fluid Sciences I</i> (ME 230 'C', ME 260, ENGR 216) <input type="checkbox"/> ME 345 (4) <i>Engineering Dynamics</i> (MATH 228, ME 260 'C', ENGR 216*) <input type="checkbox"/> ECE 305 + ECE 305L (4) <i>Intro. To Electrical Engineering</i> (PHYS 151, Math 215, MATH 228*) <input type="checkbox"/> BENG 364 (3) <i>BENG Probability & Statistics</i> (ENGR 216, ME 260, Math 228) <input type="checkbox"/> COMP 270 (3) <i>Technical Writing</i> (COMP 105 or placement, 35 completed credits) DDC GEWO	<input type="checkbox"/> BENG 370 (4) <i>Biomechanics I</i> (ME 345, MATH 228) <input type="checkbox"/> BENG 375 (4) <i>Biomaterials, Tissue Engineering</i> (BIOL 140, ENGR 250) <input type="checkbox"/> BENG 351+ BENG 351L (4) <i>Bio-Sensors & Instrumentation</i> (MATH 228, BENG 200, BIOL 140, ECE 305, ENGR 216) <input type="checkbox"/> DDC course (3) <i>GEHA</i>

* denotes a corequisite course

Courses listed in parentheses () are prerequisites for the listed course

Semester 7	Semester 8	Semester 9
<input type="checkbox"/> BENG 381 (4) <i>Bioprocessing</i> (ME 325, BIOL 140, CHEM 136) <input type="checkbox"/> ME 3601 (4) <i>Design & Analysis of Machine Elements</i> (ME 260, ENGR 216) <input type="checkbox"/> BENG Design/Tech elective (4) (check individual courses for pre-reqs) <input type="checkbox"/> DDC course (3) <i>GESB</i>	<input type="checkbox"/> ME 442 + ME 442L (4) <i>Control Systems Analysis</i> (ECE 305, ME 345) <input type="checkbox"/> ME 375 (4) <i>Thermal Fluid Sciences II</i> (ME 325, ECE 305*) <input type="checkbox"/> BENG Design/Tech elective (3-4) (check individual courses for pre-reqs) <input type="checkbox"/> DDC course (3) <i>GESB</i>	<input type="checkbox"/> ME 4681 (4) <i>Senior Design</i> ((BENG 351, BENG 370, BENG 364, ME 375, (BENG 375 or BENG 381))) <input type="checkbox"/> ME 379 (3) <i>Thermal-Fluids Lab</i> (ME 325, COMP 270, ME 349, ME 375*) DDC GEIN <input type="checkbox"/> ME 381 + ME 381L (4) <i>Manufacturing processes I</i> (ENGR 250 'C', ME 260) <input type="checkbox"/> BENG Design/Tech elective (3)
NOTES	BEME Design/Tech Electives	Possible Tracks/Certificates
<ul style="list-style-type: none"> The sample pathways were created with Fall and Winter semester enrollment in mind. Summer semesters can be used to lessen the workload, and/or participate in co-op or research. For DDC requirements, please see the University's guidelines Each student's pathway is unique and may differ slightly from this one See DDC master list for GESB/GEHA options A course may fulfill multiple requirements; however, credit is only applied once. Using one course to fulfill multiple requirements may result in a deficiency in total credits. Check the BEME elective courses' prerequisites, corequisites, course credit and schedule in DegreeWorks, the Undergrad Catalog and Browse Classes. 	<p><i>Design Electives:</i></p> <p>BENG 426 (4), BENG 450 (3), BENG 451 (3), BENG 460 (4), BENG 470 (3), BENG 481 (3), ENGR 360 (3), ME 4191 (4), ME 4202 (4), ME423 (4), ME 4361 (4), ME 440 (3), ME 445 (3), ME 4461 (4), ME 4471 (4), ME 4500 (3), ME 452 (4), ME 460 (3), ME 469 (1-4), ME 472 (4), ME 483 (3), ME 493 (3), ME 490 or BENG 490 or ENGR 493 (1-3)</p> <p><i>Upper-Level Tech Electives:</i></p> <p>BENG 410 (3), BENG 425 (3), BENG 475 (3), ENGR 350 (4), ME 410 (3), ME 4301 (3), ME 481 (3), ME 491 (1-3), ME 492 or BENG 492 or ENGR 492 (1-3), ME 496 (3), ME 4981 (4), ENGR 350 (4), IMSE 381 (3), IMSE 440 (3), IMSE 4675(4), IMSE 4425 (4), CHEM 225 (3), CHEM 226 (3), CHEM 227 (2), CHEM 437 (3), BCHM 370 (3), ENGR 399 (1), ENGR 492 (1), ME 4640 (3), ME 4910 (3), ME 4950 (3)</p> <ul style="list-style-type: none"> 10 credits total needed, at least three credits (1 course) must be Design Electives At least 6 credits (2 courses) must be ME or BENG 	<p><i>Counts for Design/Tech elective credit. Select a minimum of 9 credit hours in one category</i></p> <p>Energy and Sustainability ME 4202, ME 423, ME 4301, ME 4361, ME 4471, ME 452, ME 493, ME 496</p> <p>Engineering Design ME 410, ME 4191, ME 4202, ME 423, ME 4301, ME 4361, ME 4471, ME 452, ME 460, ME 469, ME 472, ME 483, ME 493, ME 490, ENGR 360, BENG 451, ME 440, ME 445, ME 4461, BENG 470, BENG 481, ME 4500</p> <p>Engineering Mechanics ME 410, ME 4191, ME 440, ME 445, ME 4461, BENG 370, BENG 470</p> <p>Materials and Manufacturing ME 460, ME 481, ME 483, ENGR 350, BENG 375, ME 4950, ME 4910</p> <p>Vehicles and Mobility ME 410, ME 472, ME 493, ME 496, ME 4981, ME 4910, ME 4500</p> <p>Mechatronics and Robotics ME 440, ME 445, ME 4461, ME 472, IMSE 381, ME 4640</p>

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Courses listed in parentheses () are prerequisites for the listed course