DUAL DEGREE PROGRAM: BIOMEDICAL ENGINEERING COMBINED WITH MECHANICAL ENGINEERING

TO PREPARE FOR FIRST SEMESTER: The curriculum for this major assumes students enter college prepared to take calculus and chemistry. To qualify for graduation, students in the biomedical engineering combined with mechanical engineering must achieve a minimum 2.000 grade point average at CSU in all courses in engineering, mathematics, computer science, statistics, physics, and chemistry as well as courses taken as technical electives.

Major Completion Map

Distinctive Requirements for Degree Program:

Freshman					
Semester 1		**Critical**	**Recommended**	**AUCC**	**Credits**
CO 150	College Composition (GT-CO2)		X	1A	3
ENGR 111	Fundamentals of Engineering	X			3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	X		1B	4
Select one group from the following:		X			5
Group A:					
CHEM 111	General Chemistry I (GT-SC2)	X		3A	
CHEM 112	General Chemistry Lab I (GT-SC1)		X	3A	
Group B:					
CHEM 120	Foundations of Modern Chemistry (GT-SC2)	X		3A	
CHEM 121	Foundations of Modern Chemistry Laboratory (GT-SC1)	X		3A	
	Total Credits				**15**
Semester 2		**Critical**	**Recommended**	**AUCC**	**Credits**
ENGR 114	Engineering for Grand Challenges	X			3
MATH 161	Calculus for Physical Scientists II (GT-MA1)	X		1B	4
PH 141	Physics for Scientists and Engineers I (GT-SC1)	X		3A	5
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	3D	3
	Total Credits				**15**
Sophomore					
Semester 3		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 200	Fundamentals of Biomedical Engineering	X			2
LIFE 102	Attributes of Living Systems (GT-SC1)	X		3A	4
MATH 261	Calculus for Physical Scientists III	X			4
MECH 210	Engineering Design–3D Modeling and Printing	X			2
PH 142	Physics for Scientists and Engineers II (GT-SC1)	X		3A	5
	Total Credits				**17**
Semester 4		**Critical**	**Recommended**	**AUCC**	**Credits**
CHEM 113	General Chemistry II		X		3
CIVE 260	Engineering Mechanics-Statics	X			3
MATH 340	Intro to Ordinary Differential Equations	X			4
MECH 200A	Introduction to Manufacturing Processes: Lecture	X			3
MECH 200B	Introduction to Manufacturing Processes : Laboratory	X			1
MECH 231	Engineering Experimentation	X			2
	Total Credits				**16**
Junior					
Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
BMS 300	Principles of Human Physiology		X		4
CIVE 261	Engineering Mechanics-Dynamics	X			3

MECH 305	Mechanical Engineering Computational Methods	X			3
MECH 339	Thermodynamics I for Mechanical Engineers	X			3
STAT 315	Intro to Theory and Practice of Statistics		X		3
	Total Credits				**16**
Semester 6		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 300	Problem-Based Learning Biomedical Engr Lab	X			4
CIVE 360	Mechanics of Solids	X			3
MECH 342	Fluid Mechanics for Mechanical Engineers	X			3
MECH 439	Thermodynamics II for Mechanical Engineers	X			3
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)			X	3C	3
	Total Credits				**16**
Senior					
Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 441	Biomechanics and Biomaterials	X			3
MECH 207	Mechatronics I	X			3
MECH 324	Dynamics of Machines	X			4
MECH 331A	Introduction to Engineering Materials: Lecture	X			3
MECH 331B	Introduction to Engineering Materials : Lab	X			1
	Total Credits				**14**
Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
MECH 307	Mechatronics II	X			3
MECH 325	Machine Design with Finite Element Analysis	X			4
MECH 338	Thermal/Fluid Sciences Laboratory		X		1
MECH 344	Heat and Mass Transfer		X		3
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)			X	2	3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			X	3A	3
	Total Credits				**17**
Fifth Year					
Semester 9		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 486A	Biomedical Design Practicum: Capstone Design I	X		4A,4B,4C	4
CHEM 245	Fundamentals of Organic Chemistry		X		4
BME Technical Elective (See List on Requirements tab)			X		3
MECH Technical Elective (See approved courses on Requirements Tab)			X		3
	Total Credits				**14**
Semester 10		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 486B	Biomedical Design Practicum: Capstone Design II	X		4A,4B,4C	4
BME Broad Electives (See List Below):		X			3
BME Technical Elective (See List on Requirements tab)		X			3
1C (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		X		1C	3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		X		3B	3
The benchmark courses for the 10th semester are the remaining courses in the entire program of study.		X			
	Total Credits				**16**
	Program Total Credits:				**156**