DUAL DEGREE PROGRAM: BIOMEDICAL ENGINEERING COMBINED WITH MECHANICAL ENGINEERING

Major Completion Map

Distinctive Requirements for Degree Program:

TO DECLARE MAJOR: Engineering is a controlled major: students are admitted into the major only if they meet established academic standards. The biomedical engineering combined with mechanical engineering program has additional admissions requirements and enrollment limits. Please see competitive major requirements or the advisor in the Department for more information.

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.

Freshman

Semester 1		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 100	Overview of Biomedical Engineering	X			1
CHEM 111	General Chemistry I (GT-SC2)	X		3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)		X	3A	1
CO 150	College Composition (GT-CO2)		X	1A	3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	X		1B	4
MECH 103	Introduction to Mechanical Engineering	X			3
	Total Credits				**16**
Semester 2		**Critical**	**Recommended**	**AUCC**	**Credits**
LIFE 102	Attributes of Living Systems (GT-SC1)	X		3A	4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	X		1B	4
MECH 105	Mechanical Engineering Problem Solving	X			3
PH 141	Physics for Scientists and Engineers I (GT-SC1)	X		3A	5
	Total Credits				**16**

Sophomore

Semester 3		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 200	Fundamentals of Biomedical Engineering	X			2
CIVE 260	Engineering Mechanics-Statics	X			3
MATH 261	Calculus for Physical Scientists III	X			4
MECH 201	Engineering Design I	X			2
PH 142	Physics for Scientists and Engineers II (GT-SC1)	X		3A	5
	Total Credits				**16**
Semester 4		**Critical**	**Recommended**	**AUCC**	**Credits**
CHEM 113	General Chemistry II		X		3
CIVE 261	Engineering Mechanics-Dynamics	X			3
MATH 340	Intro to Ordinary Differential Equations	X			4
MECH 231	Engineering Experimentation	X			3
Select one group from the following:					3
Group A:					
MECH 200	Introduction to Manufacturing Processes	X			
Group B:					
MECH 200A	Introduction to Manufacturing Processes: Lecture	X			
MECH 200B	Introduction to Manufacturing Processes : Laboratory	X			
	Total Credits				**16**

Junior

Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
CIVE 360	Mechanics of Solids	X			3

MECH 202	Engineering Design II	X			3
MECH 337	Thermodynamics	X			4
MECH 342	Fluid Mechanics 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
BMS 300	Principles of Human Physiology	X			4
CHEM 245	Fundamentals of Organic Chemistry		X		4
MECH 324	Dynamics of Machines	X			4
	Total Credits				**16**
Senior					
Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 441	Biomechanics and Biomaterials	X			3
ECE 204	Introduction to Electrical Engineering	X			3
MECH 325	Machine Design		X		3
Select one group from the following:					4
Group A:					
MECH 331	Introduction to Engineering Materials	X			
Group B:					
MECH 331A	Introduction to Engineering Materials: Lecture	X			
MECH 331B	Introduction to Engineering Materials : Lab	X			
BME Technical Elective			X		3
	Total Credits				**16**
Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
MECH 301A	Engineering Design III: Finite Element Analysis	X			1
MECH 301B	Engineering Design III: Computational Fluid Dynamics	X			1
MECH 307	Mechatronics and Measurement Systems	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	3B	3
	Total Credits				**16**
Fifth Year					
Semester 9		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 486A	Biomedical Design Practicum: Capstone Design I	X		4A,4B,4C	4
BME Technical Elective (See List on Requirements tab)			X		3
MECH Technical Elective (See approved courses on Requirements Tab)			X		3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)				1C	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**
Semester 10		**Critical**	**Recommended**	**AUCC**	**Credits**
BIOM 486B	Biomedical Design Practicum: Capstone Design II	X		4A,4B,4C	4
BME Technical Elective (See List on Requirements tab)		X			3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		X		3B	3
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		X		3D	3

The benchmark courses for the 10th semester are the remaining courses in the entire program of study.		X	
	Total Credits		**13**
	Program Total Credits:		**157**