Table C5-1 Biomechanics Track Curriculum

Course (Department, Number, Title) List all courses in the program by term starting with first term of first year and ending with the last term of the final year. * can be taken in Fall or Spring to balance enrollment		Indicate Whether Course is Required, Elective or a Selected Elective by an R, an E or an SE.[1]	*Subject Area (Credit Hours)*				Last Two Terms the Course was Offered: Year and, Semester, or Quarter	Maximum Section Enrollment for the Last Two Terms the Course was Offered[2]
			Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
1st Year - Fall Semester (16 Credits)								
HUM 101	English Composition I	R			3		F12 & S13	24
PHYS 111	Physics I	R	3				F12 & S13	30
PHYS 111A	Physics I Laboratory	R	1				F12 & S13	24
CHEM 125	General Chemistry I	R	3				F12 & S13	25
MATH 111	Calculus I	R	4				F12 & S13	30
BME 111	Introduction to Human Physiology I	R	3				F12 & S13	84/40
BME 101	Introduction to Biomedical Engineering	R				0	F11 & F12	80/84
1st Year - Spring Semester (18 Credits)								
HUM 102	English Composition II	R			3		F12 & S13	24
PHYS 121	Physics II	R	3				F12 & S13	30
PHYS 121A	Physics II Laboratory	R	1				F12 & S13	24
CHEM 126	General Chemistry II	R	3				F12 & S13	25
CHEM 124	General Chemistry Laboratory	R	1				F12 & S13	200
MATH 112	Calculus II	R	4				F12 & S13	32/25
FED 101*	BME Fundamentals of Engineering Design	R		2√			F12 & S13	18

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			Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
2nd Year - Fall Semester (17 Credits)								
HIST 2xx	Cultural History Elective	SE			3		F12 & S13	28
BME 301*	Electrical Fundamentals of Biomedical Engineering	R		3			F12 & S13	25
BME 303/R120:102*	Biological & Chemical Foundations of BME or Rutgers' Biology II	SE	3				F11 & F12	20
MATH 211	Calculus III A	R	3				F12 & S13	30
MATH 279	Statistics & Probability for Engineers	R	2				F12 & S13	30/32
CS 101	Computer Programing	R			3		F12 & S13	30
2nd Year - Spring Semester (17 Credits)								
SS LL 1xx/2xx	Basic Social Science Elective in ECON/EPS/SS/STS	SE			3		NA	NA
BME 302*	Mechanical Fundamentals of Biomedical Engineering	R		3			F12 & S13	25
BME 304*	Material Fundamentals of Biomedical Engineering	R		3			F12 & S13	40
MATH 222	Differential Equations	R	4				F12 & S13	30
CHEM 243	Organic Chemistry I	R	3				F12 & S13	59/40
PE 1xx/2xx	Physical Education Elective	SE				1	F12 & S13	15-30
3rd Year - Fall Semester (17 Credits)								
SS LL 1xx/2xx	Basic Social Science Elective in ECON/EPS/SS/STS	SE			3		NA	NA
BME 310	Biomedical Computing	R		3			F12 & S13	30/25

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			Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
MECH 320	Statics & Strength of Materials	R		3			F12 & S13	45/50
MECH 236	Dynamics	R		2			F12 & S13	30
MGMT 390	Principles of Management	R			3		F12 & S13	70/60
MATH 337	Linear Algebra	R	3				F12 & S13	30/32
3rd Year - Spring Semester (16 Credits)								
HUM 3xx	Upper Humanities Elective in LIT/HIST/PHIL/STS	SE			3		NA	NA
BME 351	Introduction to Biofluid Mechanics	R		3			F11 & F12	30
BME 382*	Engineering Models in Physiology	R		3			F12 & S13	20-30
BME 384	Biomechanics Laboratory	R		3			S12 & S13	20
BME 478	Introduction to CAD for Biomechanics	R		3			S12 & S13	30
PE 1xx/2xx	Physical Education Elective	SE				1	F12 & S13	15-30
4th Year - Fall Semester (18 Credits)								
HUM 3xx/4xx	Upper Humanities Elective in ENG/HIST/LIT/PHIL/STS/SS/THR	SE			3		NA	NA
BME 383*	Engineering Physiology Lab	R		3			F12 & S13	20-30
BME 451	Biomechanics I	R		3			F11 & F12	30
BME 495	BME Capstone Design I	R		3√			F11 & F12	60
Track Elective	Approved Track Elective	SE	3*				NA	NA

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			Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
Engineering Track Elective	Approved Track Engineering Elective	SE		3			NA	NA
4th Year - Spring Semester (15 Credits)								
HSS 4xx	Humanities Capstone Seminar	SE			3		F12 & S13	28/24
BME 452	Mechanical Behavior & Performance of Biomaterials	R		3			S12 & S13	30
BME 496	BME Capstone Design II	R		3√			S12 & S13	60
Track Elective	Approved Track Elective	SE	3*				NA	NA
Engineering Track Elective	Approved Track Engineering Elective	SE		3			NA	NA
Biomechanics Track - List of Approved Engineering & Non-Engineering Electives (3xx/4xx)								
OPSE 301	Optical Science & Engineering	SE						
MATH 3xx/4xx	Upper Level Mathematics Course - Excluding MATH 346	SE						
PHYS 350	Biophysics I	SE						
PHYS 451	Biophysics II	SE						
OPSE 310	Virtual Instrumentation	SE						
OPSE 402	High Power Laser & Photonics Applications	SE						
OPSE 410	Biophotonics	SE						
MTSE 301	Material Science & Engineering	SE						
BME 385	Cell & Biomaterials Engineering Laboratory	SE						
BME 422	Biomaterials Characterization	SE						
BME 427	Biotransport	SE						
BME 479	Biomems	SE						
IE 355	Human Factors	SE						
IE 449	Industrial Robotics	SE						

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			Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
ECE 431	Systems & Virtual Instrumentation	SE						
ECE 435	Medical Imaging Instrumentation & Data Acquisition Systems	SE						
ECE 436	Bio-Control Systems	SE						
ECE 438	Bio-Electronic Systems Laboratory	SE						
BME 491	BME Research & Independent Study I	SE						
BME 311	Co-op Work Experience	SE						
BME 492	BME Research & Independent Study II	SE						
BME 6xx	Master's Level Engineering	SE						
ME 435	Thermodynamics	SE						
CHEM 244	Organic Chemistry	SE						
TOTALS-ABET BASIC-LEVEL REQUIREMENTS			50	52	30	2		
OVERALL TOTAL CREDIT HOURS FOR COMPLETION OF THE PROGRAM		134						
PERCENT OF TOTAL			37.3%	38.8%	22.4%	1.5%		
Total must satisfy either credit hours or percentage	Minimum Semester Credit Hours		32 Hours	48 Hours				
	Minimum Percentage		25%	37.50%				