

Table C5-3 Biomedical Instrumentation 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.	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		
<i>1st Year - Fall Semester (18 Credits)</i>							
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
<i>1st Year - Spring Semester (19 Credits)</i>							
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		
<i>2nd Year - Fall Semester (17 Credits)</i>							
HIST 2xx Cultural History Elective	SE			3		F12 & S13	28
CS 101 Computer Programming	R			3		F12 & S13	30
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
<i>2nd Year - Spring Semester (17 Credits)</i>							
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
CHEM 243 Organic Chemistry I	R	3				F12 & S13	59/40
MATH 222 Differential Equations	R	4				F12 & S13	30
PE 1xx/2xx Physical Education Elective	SE				1	F12 & S13	15-30
<i>3rd Year - Fall Semester (16 Credits)</i>							
SS LL 1xx/2xx Basic Social Science Elective in ECON/EPS/SS/STS	SE			3		NA	NA
MATH 337 Linear Algebra	R	3				F12 & S13	30/32

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		Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other		
BME 310 Biomedical Computing	R		3			F12 & S13	30/25
BME 382* Engineering Models in Physiology	R		3			F12 & S13	20-30
ECE 251 Digital Design	R		3			F12 & S13	50/40
BME 372 Biomedical Electronics I	R		3			F11 & F12	20
<i>3rd Year - Spring Semester (18 Credits)</i>							
HUM 3xx Upper Humanities Elective in LIT/HIST/PHIL/STS	SE			3		NA	NA
BME 383 Engineering Physiology Lab	R		3			F12 & S13	20-30
ECE 252 Microprocessors	R		3			F12 & S13	40
BME 333 Biomedical Signals & Systems	R		3			F11 & F12	25
BME 373 Biomedical Electronics II	R		3			S12 & S13	20
Engineering Track Elective Approved Track Engineering Elective	SE		3			NA	NA
<i>4th Year - Fall Semester (15 Credits)</i>							
HUM 3xx/4xx Upper Humanities Elective in ENG/HIST/LIT/PHIL/STS/SS/THR	SE			3		NA	NA
BME 386 Bioinstrumentation Laboratory	R		3			F11 & F12	30
BME 489 Medical Instrumentation	R		3			F11 & F12	25
BME 495 BME Capstone Design I	R		3√			F11 & F12	60
Track Elective Approved Track Elective	SE	3*				NA	NA
PE 1xx/2xx Physical Education Elective	SE				1	F12 &	15-30

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		Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other			
<i>4th Year - Spring Semester (15 Credits)</i>								
HSS 4xx	Humanities Capstone Seminar - 3 credits	SE			3		F12 & S13	28/24
MGMT 390	Principles of Management	R			3		F12 & S13	70/60
BME 496	BME Capstone Design II	R		3√			S12 & S13	60
Track Elective	Approved Track Elective	SE	3*				NA	NA
Track Elective	Approved Track Elective	SE	3*				NA	NA
<i>Instrumentation Track - List of Approved Engineering & Non-Engineering Electives (3xx/4xx)</i>								
OPSE 301	Optical Science & Engineering	SE						
MATH 3xx/4xx	Upper Level Mathematics Course - Excluding MATH 346	SE						
CHEM 244	Organic Chemistry II	SE						
PHYS 350	Biophysics I	SE						
PHYS 451	Biophysics II	SE						
OPSE 410	Biophotonics	SE						
MECH 320	Statics & Strength of Materials	SE						
MTSE 301	Material Science & Engineering	SE						
BME 384	Biomechanics Laboratory	SE						
BME 420	Advanced Biomaterials Science	SE						
BME 479	Biomems	SE						
IE 355	Human Factors	SE						
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						

