

**Table C5-5 Pre-Health 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. <sup>1</sup>	Subject Area (Credit Hours)			
		Math & Basic Sciences	Engineering Topics Check if Contains Significant Design (√)	General Education	Other
<i>1st Year - Fall Semester (17 Credits)</i>					
HUM 101 English Composition I	R			3	
PHYS 111 Physics I	R	3			
PHYS 111A Physics I Laboratory	R	1			
CHEM 125 General Chemistry I	R	3			
MATH 111 Calculus I	R	4			
BME 111 Introduction to Human Physiology I	R	3			
BME 101 Introduction to Biomedical Engineering	R				0
<i>1st Year - Spring Semester (17 Credits)</i>					
HUM 102 English Composition II	R			3	
PHYS 121 Physics II	R	3			
PHYS 121A Physics II Laboratory	R	1			
CHEM 126 General Chemistry II	R	3			
CHEM 124 General Chemistry Laboratory	R	1			
MATH 112 Calculus II	R	4			
FED 101* BME Fundamentals of Engineering Design	R		2√		
<i>2nd Year - Fall Semester (21 Credits)</i>					
STS 210 Psychology	R			3	
CS 101 Computer Programming	R			3	
BME 301* Electrical Fundamentals of Biomedical Engineering	R		3		
BME 304* Electrical Fundamentals of Biomedical Engineering	R		3		
R120:101 Rutgers' Biology I	SE	4			
MATH 211 Calculus III A	R	3			
MATH 279 Statistics & Probability for Engineers	R	2			
<i>2nd Year - Spring Semester (17 Credits)</i>					
STS 221 Sociology	SE			3	

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BME 302*	Mechanical Fundamentals of Biomedical Engineering	R		3		
R120:102*	Rutgers' Biology II	SE	4			
CHEM 243	Organic Chemistry I	R	3			
MATH 222	Differential Equations	R	4			
PE 1xx/2xx	Physical Education Elective	SE				1
<i>3rd Year - Fall Semester (17 Credits)</i>						
HIST 2xx	Cultural History Elective	SE			3	
CHE 210	Chemical Process Calculations I	R		2		
CHE 210W	Chemical Process Calculations I Workshop	R		0		
MTSE 301	Material Science & Engineering	R		3		
CHEM 244	Organic Chemistry II	R	3			
MATH 337	Linear Algebra	R	3			
BME 310	Biomedical Computing	R		3		
<i>3rd Year - Spring Semester (16 Credits)</i>						
CHEM 473	Biochemistry	R	3			
BME 382*	Engineering Models in Physiology	R		3		
BME 420	Advanced Biomaterials Science	R		3		
CHE 230	Chemical Engineering Thermodynamics I	R		3		
CHE 230W	Chemical Engineering Thermodynamics I Workshop	R		0		
BME 385	Cell & Biomaterials Engineering Laboratory	R		3		
PE 1xx/2xx	Physical Education Elective	SE				1
<i>4th Year - Fall Semester (18 Credits)</i>						
ENG/HIST/LIT/PHIL/STS/SS/THR	Upper Humanities Elective	R			3	
ENG/HIST/LIT/PHIL/STS/SS/THR	Upper Humanities Elective	R			3	
BME 430	Fundamentals of Tissue Engineering	R		3		
BME 383*	Engineering Physiology Lab	R		3		
BME 495	BME Capstone Design I	R		3 <sup>√</sup>		
Engineering Track Elective	Approved Track Engineering Elective	SE		3		
<i>4th Year - Spring Semester (15 Credits)</i>						
HSS 4xx	Humanities Capstone Seminar	SE			3	
MGMT 390	Principles of Management	SE			3	
BME 422	Biomaterials Characterization	R		3		
BME 427	Biotransport	R		3		
BME 496	BME Capstone Design II	R		3 <sup>√</sup>		
<i>PreHealth Track - List of Approved Engineering &amp; Non-Engineering Electives (3xx/4xx)</i>						

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OPSE 410	Biophotonics	SE					
MECH 320	Statics & Strength of Materials	SE					
BME 384	Biomechanics Laboratory	SE					
BME 351	Introduction to Biofluid Mechanics	SE					
BME 451	Biomechanics I	SE					
BME 478	Introduction to CAD for Biomechanics	SE					
IE 355	Human Factors	SE					
IE 449	Industrial Robotics	SE					
BME 491	BME Research & Independent Study I	SE					
BME 492	BME Research & Independent Study II	SE					
OPSE 301	Optical Science Engineering	SE					
BME 479	Biomems	SE					
BME 6xx	Master's Level Engineering - Excluding BME 651 and BME 672)	SE					
MATH 3xx/4xx	Upper Level Mathematics Course - Excluding MATH 346	SE					
CHEM 473	Biochemistry	SE					
R120 3xx/4xx	Upper Level Biology	SE					
BME 311	Co-op Work Experience	SE					
TOTALS-ABET BASIC-LEVEL REQUIREMENTS			55	52	30	2	
OVERALL TOTAL CREDIT HOURS FOR COMPLETION OF THE PROGRAM		139					
PERCENT OF TOTAL							
Total must satisfy either credit hours or percentage	Minimum Semester Credit Hours		32 Hours	48 Hours			
	Minimum Percentage		25%	37.5%			