

# Accelerated B.S. in Biomedical Engineering Option, Pre-Health

## Accelerated B.S. in Biomedical Engineering Option, Pre-Health (120 credits)

### First Year

1st Semester		Credits
ENGL 101	English Composition: Introduction to Academic Writing	3
PHYS 111	Physics I	3
PHYS 111A	Physics I Lab	1
CHEM 125	General Chemistry I	3
CHEM 125A	General Chemistry Lab I	1
MATH 111	Calculus I	4
FED 101	Fundamentals of Engineering Design	2
FYS SEM	First-Year Student Seminar	0
<b>Term Credits</b>		<b>17</b>

### 2nd Semester

BME 101	Introduction to Biomedical Engineering	0
MATH 112	Calculus II	4
CHEM 126	General Chemistry II	3
PHYS 121	Physics II	3
PHYS 121A	Physics II Lab	1
ENGL 102	English Composition: Introduction to Writing for Research	3
BME 111	Introduction to Physiology	3
<b>Term Credits</b>		<b>17</b>

### Summer

MATH 279	Statistics and Probability for Engineers <sup>2</sup>	2
CHEM 243	Organic Chemistry I	3
History and Humanities GER 200 level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/</a> )		3
<b>Term Credits</b>		<b>8</b>

### Second Year

#### 1st Semester

MATH 211	Calculus III A <sup>1</sup>	3
BME 301	Electrical Fundamentals of Biomedical Engineering	3
BME 302	Mechanical Fundamentals of Biomedical Engineering	3
BME 304	Material Fundamentals of Biomedical Engineering	3
BIOL 205	Foundations of Biology: Ecology and Evolution Lecture	3
BIOL 206	Foundations of Biology: Ecology and Evolution Lab	1
CHEM 244	Organic Chemistry II	3
CHEM 244A	Organic Chemistry II Laboratory	2
<b>Term Credits</b>		<b>21</b>

#### 2nd Semester

MATH 222	Differential Equations	4
CHEM 473	Biochemistry	3
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
BME 210	Processing Fund for Biol Signa	3
BME 491	Research and Independent Study I	3
BME 303	Biological and Chemical Foundations of Biomedical Engineering	3
<b>Term Credits</b>		<b>19</b>

**Third Year****1st Semester**

BME 382	Engineering Models of Physiological Systems	3
BME 495	Capstone Design I	2
Advanced Engineering Elective **		3
Advanced Engineering Elective **		3
Advanced Engineering Elective **		3
Advanced Engineering Elective **		3
History and Humanities GER 300+ level ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/</a> )		3
<b>Term Credits</b>		<b>20</b>

**2nd Semester**

BME 383	Measurement Lab for Physiological Systems and Tissue	3
IE 492	Engineering Management	3
Advanced Engineering Elective **		3
Advanced Engineering Elective **		3
BME 496	Capstone Design 2	3
Humanities and Social Science Senior Seminar GER ( <a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/</a> )		3
<b>Term Credits</b>		<b>18</b>
<b>Total Credits</b>		<b>120</b>

\*\* Advanced Engineering Elective: Technical elective courses with sufficient engineering content: Generally any 300-level or higher courses with prefix BME, ME, CHE, EE, OPSE (excluding MECH320); ECE251 and ECE252 are allowed; chosen in consultation with advisor

<sup>1</sup> Students can take MATH 213 (<http://catalog.njit.edu/search/?P=MATH%20213>) (Calculus III B) instead of MATH 211 (<http://catalog.njit.edu/search/?P=MATH%20211>).

<sup>2</sup> Students can take MATH 333 (<https://catalog.njit.edu/search/?P=MATH%20333>) (Probability and Statistics) instead of MATH 279 (<https://catalog.njit.edu/search/?P=MATH%20279>).

**See the General Education Requirements (<https://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/>) “Refer to the General Education Requirements for specific information for GER courses”**