

# B.S. in Engineering Science

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## First Year

1st Semester		Term Credits
CHEM 121 or CHEM 125	Fundamentals of Chemical Principles I or General Chemistry I	3
FED 101	Fundamentals of Engineering Design <sup>1</sup>	2
HUM 101	English Composition: Writing, Speaking, Thinking I	3
MATH 111	Calculus I	4
PHYS 111	Physics I	3
PHYS 111A	Physics I Laboratory	1
FRSH SEM	Freshman Seminar	0
PE Physical Education		1
<b>Term Credits</b>		<b>17</b>

## 2nd Semester

CHEM 124	General Chemistry Laboratory	1
CHEM 122 or CHEM 126	Fundamentals of Chemical Principles II or General Chemistry II	3
HUM 102	English Composition: Writing, Speaking, Thinking II	3
CS 106 or CS 115	Roadmap to Computing Engineers or Intro. to CS I in C++	3
MATH 112	Calculus II	4
PHYS 121	Physics II	3
PHYS 121A	Physics II Laboratory	1
<b>Term Credits</b>		<b>18</b>

## Second Year

### 1st Semester

MATH 211 or MATH 213	Calculus III A or Calculus III B	3
ECON 201	Economics	3
Cultural History (lower-level):GUR Elective		3
Engineering Science Elective		3
Engineering Science Elective		3
Physical Education		1
<b>Term Credits</b>		<b>16</b>

### 2nd Semester

MATH 222	Differential Equations	4
MATH 333	Probability and Statistics	3
Social Science (lower level) Elective		3
Engineering Science Elective		3
Engineering Science Elective		3
<b>Term Credits</b>		<b>16</b>

## Third Year

### 1st Semester

Humanities and Social Sciences (upper-level):GUR Elective		3
Engineering Science Elective		3
Engineering Science Elective		3
Engineering Science Elective		3
Management: GUR Elective		3
<b>Term Credits</b>		<b>15</b>

### 2nd Semester

Humanities and Social Sciences (upper-level):GUR Elective		3
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Engineering Science Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
<b>Term Credits</b>	<b>15</b>
<b>Fourth Year</b>	
<b>1st Semester</b>	
Capstone Seminar Humanities and Social Sciences (upper-level):GUR Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
<b>Term Credits</b>	<b>15</b>
<b>2nd Semester</b>	
ESC 491                      Research and Independent Study I	3
Engineering Science Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
Engineering Science Elective	3
<b>Term Credits</b>	<b>15</b>
<b>Total Credits</b>	<b>127</b>

<sup>1</sup> FED 101 Fundamentals of Engineering Design is taken concurrently with either HUM 100 English Composition: Reading, Writing, Speaking II or HUM 101 English Composition: Writing, Speaking, Thinking I

<sup>2</sup> Half of the students will take this course in reverse order.

## Electives

### English Composition and Cultural History (lower-level) GUR

Select two of the following:	6
HUM 211                      The Pre-Modern World	
HUM 212                      The Modern World	
HIST 213                      The Twentieth-Century World	
2XX                              200-level history courses at Rutgers-Newark	

### Social Sciences (lower-level) GUR <sup>1</sup>

Select one of the following Economics courses:	3
ECON 201                      Economics	
ECON 265                      Microeconomics	
ECON 266                      Macroeconomics	
STS 201                      Understanding Technological Society	
STS 210                      General Psychology	
STS 221                      Sociology	
Select one of the following:	3
EPS 202                      Society, Technology, and the Environment	
STS 257                      Technology, Society and Culture: An American View	
STS 258                      Technology, Society and Culture: A Global View	

### Capstone Seminar in Humanities and Social Sciences (upper-level) GUR

Select one of the following. Honors College students select honors section.	3
HSS 403                      Humanities Senior Seminar - Literature	
HSS 404                      Humanities Senior Seminar - History	
HSS 405                      Humanities Senior Seminar - Philosophy	
HSS 406                      Humanities Senior Seminar - English	
HSS 407                      Humanities Senior Seminar - Theater	

HSS 408	Humanities Senior Seminar - Science, Technology, and Society	
HSS 409	Humanities Senior Seminar - Social Science	
<b>Physical Education GUR</b> <sup>2</sup>		
PE 1XX	Physical Education course	1
Physical Education course		1
<b>Management GUR</b>		
Select one of the following:		3
IE 492	Engineering Management	
MGMT 390	Principles of Management	
AS 333	Leadership and Management I	

<sup>1</sup> Students also may take approved introductory courses in basic social sciences at Rutgers-Newark to fulfill this requirement.

<sup>2</sup> Students are urged to complete the requirement as soon as possible.

<sup>3</sup> Acceptable only for students taking the aerospace option. Students enrolled in a dual degree program between architecture and management take HRM 601 Organizational Behavior to fulfill this requirement.

*This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits.*

*First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.*