

B.S. in Engineering Science

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 ¹ | 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 |
| Term Credits | | 17 |

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 |
| Term Credits | | 18 |

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 |
| Term Credits | | 16 |

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 |
| Term Credits | | 16 |

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 |
| Term Credits | | 15 |

2nd Semester

| | | |
|---|--|---|
| 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 |
| Term Credits | 15 |
| Fourth Year | |
| 1st Semester | |
| 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 |
| Term Credits | 15 |
| 2nd Semester | |
| ESC 491 Research and Independent Study I | 3 |
| Engineering Science Elective | 3 |
| Engineering Science Elective | 3 |
| Engineering Science Elective | 3 |
| Engineering Science Elective | 3 |
| Term Credits | 15 |
| Total Credits | 127 |

¹ 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

² Half of the students will take this course in reverse order.

Electives

English Composition and Cultural History (lower-level) GUR

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|--|---|
| 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 ¹

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|--|---|
| 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

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|---|---|
| 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 | |

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

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

² Students are urged to complete the requirement as soon as possible.

³ 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.