### LIBERAL STUDIES REQUIREMENTS (43 credits)
See Liberal Studies Guide for Goal and Enrichment choices

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Cr</th>
<th>Gr</th>
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<tbody>
<tr>
<td>ENGL 102</td>
<td>Critical Writing</td>
<td>3</td>
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<tr>
<td>ENGL 104 or</td>
<td>Critical Reading* or Intro to Literary</td>
<td>3</td>
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<tr>
<td>ENGL 220</td>
<td>Cultural Studies*</td>
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<tr>
<td>COMM 200</td>
<td>Public Speaking*</td>
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**Goal Courses (9 credits)**

- ENGL 102 Critical Writing
- ENGL 104 or ENGL 220 Critical Reading* or Intro to Literary and Cultural Studies*
- COMM 200 Public Speaking*

**The Arts (3 credits)**

- Goal 3

**Global Community (9 credits)**

- Goal – Non-US 3
- Goal – Non-US 3
- Goal – US 3

**Human Institutions/Interpersonal Relationships (3 credits)**

- Human Institutions/Interpersonal Relationships

**Science, Technology & Math (12 credits)**

- CHEM 107 General Chemistry I ◊○ 3
- CHEM 111 General Chemistry I Lab ◊○ 1
- MATH 225 Calculus I ◊○ 4
- PHYS 211 General Physics I/Lab ◊○ 4

**Challenges of the Modern Age (0 credits)**

This requirement has been waived

**ENRICHMENT COURSE REQUIREMENTS**

Choose one course from two of the following Enrichment areas. (7 credits)

**The Arts**

This requirement has been waived

**Global Community**

- ECON 201 Macroeconomics 3

**Human Institutions/Interpersonal Relationships**

This requirement has been waived

**Science, Technology & Math**

- CHEM 108/112 Gen. Chem II/Lab ◊○ 4

**OTHER BASIC REQUIREMENTS**

Check with your advisor or a current degree audit report to see if you have been exempted from this course. The credit earned in this course will not be counted toward the 120 credit hour minimum needed to earn a degree.

- ACSD 110 Beginning Algebra 3

### COMPUTER COMPETENCY

Students must demonstrate 'computer competency' by:

- Passed Exam Pass Computer Competency Exam at SRU Orientation
- OR CPSC ______ Complete one of the following courses: CPSC 100, 110, 130, or PE 202 at SRU or another post-secondary institution 1-3

**IMPORTANT CURRICULUM GUIDE NOTES**

This Curriculum Guide is provided to help SRU students and prospective students better understand their intended major curriculum. Enrolled SRU students should note that the My Rock Audit may place already-earned and/or in progress courses in different, yet valid, curriculum categories. Enrolled SRU students should use the My Rock Audit Report and materials and information provided by their faculty advisors to ensure accurate progress towards degree completion. The information on this guide is current as of the date below. Students are responsible for curriculum requirements at the time of enrollment at the University.

- Course may have a prerequisite. See Undergraduate Online Catalog.
- Course can be counted as a Liberal Studies Requirement, but earns credit only once toward your 120-credits total.
- Course counts for 50% Major requirement and Major GPA.

**PASSHE** = Pennsylvania State System of Higher Education Institution

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### MAJOR REQUIREMENTS (89 credits)

- 45 major credits must be taken at SRU or PASSHE
- 45 major credits must be taken at the 300 level or above

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<tr>
<td>ENGR 110*</td>
<td>Intro to Engineering</td>
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<tr>
<td>ENGR 120*</td>
<td>Engineering Design Tools◆</td>
<td>2</td>
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<tr>
<td>ENGR 301*</td>
<td>Fluid Mechanics ◊</td>
<td>3</td>
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<tr>
<td>ENGR 303*</td>
<td>Solid Mechanics ◊</td>
<td>3</td>
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<tr>
<td>ENGR 310*</td>
<td>Intro to Electrical Engineering ◊</td>
<td>3</td>
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<tr>
<td>ENGR 320*</td>
<td>Thermodynamics ◊</td>
<td>3</td>
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<tr>
<td>PHYS 314*</td>
<td>Engineering Mechanics 1: Statics ◊</td>
<td>3</td>
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<tr>
<td>PNGE 201*</td>
<td>Intro to Petroleum &amp; Natural Gas Eng.  ◊</td>
<td>3</td>
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<tr>
<td>PNGE 312*</td>
<td>Reservoir Rock &amp; Fluid Properties /Lab ◊</td>
<td>4</td>
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<tr>
<td>PNGE 325*</td>
<td>Reservoir Engineering ◊</td>
<td>3</td>
<td></td>
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<tr>
<td>PNGE 410*</td>
<td>Drilling Engineering ◊</td>
<td>4</td>
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<tr>
<td>PNGE 420*</td>
<td>Production Engineering ◊</td>
<td>3</td>
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<tr>
<td>PNGE 432*</td>
<td>Formation Evaluation ◊</td>
<td>3</td>
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<tr>
<td>PNGE 435*</td>
<td>Pressure Transient Analysis ◊</td>
<td>3</td>
<td></td>
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<tr>
<td>PNGE 441*</td>
<td>Oil &amp; Natural Gas Resource Value ◊</td>
<td>3</td>
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<tr>
<td>PNGE 445*</td>
<td>Natural Gas Engineering /Lab ◊</td>
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</tr>
<tr>
<td>PNGE 460*</td>
<td>Oil &amp; Natural Gas Engineering Design ◊</td>
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**Required Engineering Courses (50 credits)**

- CHEM 108** General Chemistry II ◊○ 3
- CHEM 112** General Chemistry II Lab ◊○ 1
- EGeo 201* Earth Materials & Processes /Lab 4
- EGeo 327* Structural Geology /Lab ◊○ 4
- EGeo 358* Intro to Geophysics /Lab 3
- MATH 230* Calculus II ◊○ 4
- MATH 231* Calculus III ◊○ 4
- MATH 240* Linear Algebra and Differential Equations ◊○ 3
- STAT 352* Mathematical Statistics ◊○ 3
- PHYS 212* General Physics II / Lab ◊○ 4
- PHYS 213* General Physics III / Lab ◊○ 4
- PHYS 331* Mathematical Methods of Physics ◊○ 3

**Required Math and Science Courses (39 credits)**

- CHEM 108** General Chemistry II ◊○ 3
- CHEM 112** General Chemistry II Lab ◊○ 1
- Egeo 201* Earth Materials & Processes /Lab 4
- Egeo 327* Structural Geology /Lab ◊○ 4
- Egeo 358* Intro to Geophysics /Lab 3
- MATH 230* Calculus II ◊○ 4
- MATH 231* Calculus III ◊○ 4
- MATH 240* Linear Algebra and Differential Equations ◊○ 3
- STAT 352* Mathematical Statistics ◊○ 3
- PHYS 212* General Physics II / Lab ◊○ 4
- PHYS 213* General Physics III / Lab ◊○ 4
- PHYS 331* Mathematical Methods of Physics ◊○ 3

**NATURAL SCIENCE AND MATH COLLEGE-WIDE REQUIREMENTS**

Students must take the following four courses (12 credits)

- CHEM 107 General Chemistry I ◊○ 3
- CHEM 111 General Chemistry I Lab ◊○ 3
- MATH 225 Calculus I ◊○ 3
- PHYS 211 General Physics I/Lab ◊○ 3

**GPA REQUIREMENT**

- 2.50 or higher Major GPA
- 2.50 or higher Overall GPA

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**Slippery Rock University of Pennsylvania – Curriculum Guide**

**Bachelor of Science in Petroleum and Natural Gas Engineering**

**Effective Fall 2018 Revised 07/2018**

**PETROLEUM AND NATURAL GAS ENGINEERING – BS (6180)**