# Slippery Rock University of Pennsylvania – Curriculum Guide
# Bachelor of Science in Industrial and Systems Engineering

| ROCK STUDIES REQUIREMENTS (37-38 credits) | | |
|---|---|---|
| ***Course*** | ***Title*** | ***Cr*** |
| **THE ROCK (10 credits)** | | |
| **EXEMPT** | Foundations of Academic Discovery | 0 |
| ✓ ENGL 102 | Critical Writing **ENGL102** | **3** |
| **EXEMPT** | Critical Reading | 0 |
| ✓ COMM 200 | Civil Discourse **COMM201** | **3** |
| ✓ MATH 225 | Calculus I ★ **MATH221** | **4** |
| **INTEGRATED INQUIRY (16-17 credits)** | | |
| Creative and Aesthetic Inquiry (3 credits) | | |
| ✓ | **Humanities Elective – SRU recommends Category I or II** | **3** |
| Humanities Inquiry (3 credits) | | |
| ✓ | **ECON 101 or 102 - Principles of Economics** | **3** |
| Social Science Inquiry (2-3 credits) | | |
| ✓ | **PHED 125 or HLTH 120** | **2-3** |
| Natural Science Inquiry (4 credits) | | |
| ✓ CHEM 107/111 | General Chemistry I / Lab ★ **CHEM101** | **4** |
| Physical Science Inquiry (4 credits) | | |
| ✓ PHYS 216 | University Physics 1 / Lab ★ **PHYS221** | **4** |
| **ADDITIONAL ROCK STUDIES REQUIREMENTS (11 credits)** | | |
| ✓ MATH 230 | Calculus II ★ **MATH222** | **4** |
| ✓ PHYS 217 | University Physics 2 / Lab ★ **PHYS222** | **4** |
| ENGL 205 | Introduction to Professional Writing ★ | 3 |

| 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. | |
| **EXEMPT** | Beginning Algebra |

**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 counts for 50% of Major requirements and Major GPA |
| PASSHE = Pennsylvania State System of Higher Education Institution | |

| MAJOR REQUIREMENTS (86 credits)<br>• 44 major credits must be taken at SRU or PASSHE<br>• 44 major credits must be taken at the 300 level or above | | |
|---|---|---|
| ***Course*** | ***Title*** | ***Cr*** |
| **Required Engineering Courses (68 credits)** | | |
| ✓ ENGR 110 | Introduction to Engineering^ **DRFT115** | **3** |
| ENGR 120 | Engineering Design Tools ★^ | 2 |
| ✓ ENGR 130 | Engineering Computing Tools ★^ **COMP230** | **3** |
| ✓ ENGR 210 | Statics ★^ **PHYS241** | **3** |
| ENGR 220 | Engineering Materials ★^ | 3 |
| ENGR 250 | Circuit Analysis I ★^ | 3 |
| ENGR 340 | Engineering Economics ★^ | 3 |
| ISE 311 | Introduction to Operations Research ★^ | 3 |
| ISE 370 | Design of Industrial Systems & Processes ★^ | 3 |
| ISE 372 | Manufacturing Systems Design & Analysis ★^ | 3 |
| ISE 373 | Quality Engineering ★^ | 3 |
| ISE 402 | Work Design ★^ | 3 |
| ISE 410 | Engineering Project Management ★^ | 3 |
| ISE 420 | Simulation of Industrial Systems ★^ | 4 |
| ISE 421 | Supply Chain and Logistics Engineering ★^ | 3 |
| ISE 430 | Production Planning and Control ★^ | 3 |
| ISE 440 | Health Care Systems Engineering ★^ | 3 |
| ISE 442 | Human Factors Engineering ★^ | 3 |
| ISE 460 | Engineering Risk Analysis ★^ | 3 |
| ISE 462 | Lean Systems ★^ | 3 |
| ISE 487 | Senior Project I ★^ | 1 |
| ISE 488 | Senior Project II ★^ | 3 |
| MECH 330 | Introduction to Mechatronics ★^ | 4 |
| **ISE Electives (minimum 8 credits) – Select three courses** | | |
| ISE 330 | Six Sigma Methodology ★^ | 3 |
| ISE 382 | Sustainable Processes ★^ | 3 |
| ISE 432 | Productivity Analysis ★^ | 3 |
| ISE 480 | Undergraduate Research ★^ | 1-3 |
| MATH 312 | Stochastic Models of Operations Research ★^ | 3 |
| **Required Math and Science Courses (10 credits)** | | |
| ✓ MATH 231^ | Calculus III ★^ **MATH223** | **4** |
| ✓ MATH 232 | Linear Algebra ★^ **Sci/Tech Elective – SRU recommends MATH 230** | **3** |
| STAT 350^ | Applied Statistics ★^ | 3 |

| FREE ELECTIVES (0 credits needed) | | |
|---|---|---|
| ✓ | **ENGL 101-College Writing** | **3** |
| ✓ | **CHEM 102-Chemistry II** | **4** |
| ✓ | **MATH 224-Differential Equations** | **3** |
| ✓ | **Sci/Tech Elective** | **3** |

| BC3-SRU Engineering, A.S. to Industrial & Systems Engineering, B.S. | | |
|---|---|---|
| **Curriculum Category** | **Credits Completed** | **Credits Needed** |
| Rock Studies | **34-35** | **3** |
| Major Requirements | **16** | **70** |
| Free Electives | **13** | **0** |
| **TOTAL CREDITS** | **63-64** | **73** |