

[Proposed catalog copy]

Environmental Science Systems with a Concentration in Pre-Engineering

The environmental science systems B.S. can be taken with one of two possible pre-engineering concentrations to serve as the foundation for the Bachelor's in Environmental Science Systems and either the Master's in Environmental Engineering or the Master's in Environmental Engineering Sciences degree program at Syracuse University. Your advisor can give you more information.

Bachelor of Science in Environmental Science Systems – Pre-Engineering Concentration for Master of Science in Environmental Engineering

| <i>Major Requirements</i> | <i>Hours</i> |
|--|--------------|
| General Biology (BIO 191-192) | 8 |
| Global Resources or Ecosystems (ESS 121, 127, 128 or 129) | 3 |
| Physical Geology (ESS 205) | 4 |
| General Ecology (BIO 230) | 4 |
| Biodiversity (BIO/ESS 335) | 3 |
| Earth's Surface (ESS 320) | 4 |
| Global Systems Science (ESS 458) | 3 |
| Research in Environmental Science (ESS 499) or Internship (ESS 490) | 3 |

| <i>Major Support</i> | <i>Hours</i> |
|--|--------------|
| General Chemistry I (CHM 151) | 4 |
| General Chemistry II (CHM 152) | 4 |
| General Physics I-II (PHY105-106) | 8 |
| Statistics I (MTH 110/111) | 3/4 |
| Calculus I-III (MTH 145, MTH 146, MTH 245) | 12 |
| Differential Equations | 3 |

| <i>Bridge Courses (to be taken at SU)</i> | <i>Hours</i> |
|--|--------------|
| Statics SYRE (ECS) 221 | 3 |
| Environ. Engineering SYRE (CEE) 341 | 3 |
| Water Resources SYRE (CEE) 352 | 4 |
| Fluid Mechanics SYRE (CEE) 327 or SYRE (MAE) 341 | 4 |

**B.S. Environmental Science Systems – Pre-Engineering Concentration for Master of Science in
Environmental Engineering: Typical Course Sequence**

First Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------|------------------|---------------|------------------|
| BIO 191 | 4 credits | BIO 192 | 4 credits |
| MTH 145 | 4 credits | MTH 146 | 4 credits |
| WRT 1 | 3 credits | PHL 1 | 3 credits |
| HST 1 | 3 credits | HST 2 | 3 credits |
| COR 1 | <u>3 credits</u> | ESS 121 | <u>3 credits</u> |
| | 17 credits | | 17 credits |

Second Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------|------------------|---------------|------------------|
| PHY 105-103 | 4 credits | PHY 106-104 | 4 credits |
| MTH 245 | 4 credits | MTH 303 | 3 credits |
| ENG 1 | 3 credits | THE | 3 credits |
| PHL 2 | 3 credits | ESS 205 | 4 credits |
| COR-EAC 1 | <u>3 credits</u> | COR-EAC 2 | <u>3 credits</u> |
| | 17 credits | | 17 credits |

Third Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------|------------------|------------------|------------------|
| BIO 230 | 4 credits | BIO/ESS 335 | 3 credits |
| CHM 151+Lab | 4 credits | CHM 152 + Lab | 4 credits |
| ESS 320 | 4 credits | Social Science | 3 credits |
| ESS 499 | 3 credits | <u>SYRE 221*</u> | <u>3 credits</u> |
| ENG 2 | <u>3 credits</u> | | |
| | 18 credits | | 13 credits |

Fourth Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------------|------------------|------------------|------------------|
| MTH 110/111 | 3-4 credits | BIO/ESS 458 | 3 credits |
| COR-INS/ISS/IM | 3 credits | COR 4 | 3 credits |
| VPA | 1 credit | REL | 3 credits |
| <u>SYRE 327*</u> | 4 credits | <u>SYRE 352*</u> | 4 credits |
| <u>SYRE 341E*</u> | <u>3 credits</u> | Free elective | <u>3 credits</u> |
| | 14-15 credits | | 16 credits |

**SYRE Engineering courses at Syracuse University*

**Bachelor of Science in Environmental Science Systems – Pre-Engineering Concentration for
Master of Science in Environmental Engineering Sciences**

| <i>Major Requirements</i> | <i>Hours</i> |
|--|--------------|
| General Biology (BIO 191) | 4 |
| Global Resources (ESS 121) | 3 |
| Global Environment or Ecosystems (ESS 127, 128 or 129) | 3 |
| Physical Geology (ESS 205) | 4 |
| General Ecology (BIO 230) | 4 |
| Biodiversity (BIO/ESS 335) | 3 |
| Earth's Surface (ESS 320) | 4 |
| Global Systems Science (ESS 458) | 3 |
| Research in Biology (ESS 499) or Internship (ESS 490) | 3 |
| ESS/BIO elective (BIO 192 recommended) | 3/4 |
| Upper level BIO/ESS elective | 4 |
| Upper level elective (<i>ECS 221@ SU recommended</i>) | 3/4 |
| Upper level elective (<i>CEE 341@ SU recommended</i>) | 3/4 |

| <i>Major support</i> | <i>Hours</i> |
|----------------------------------|--------------|
| General Chemistry I (CHM 151) | 4 |
| General Chemistry II (CHM 152) | 4 |
| General Physics I (PHY101/105) | 4 |
| General Physics II (PHY 102/106) | 4 |
| General Statistics (MTH 110/111) | 3/4 |
| Calculus (MTH 145 and MTH 146) | 8 |

**B.S. Environmental Science Systems – Pre-Engineering Concentration for Master of Science in
Environmental Engineering Sciences: Typical Course Sequence**

First Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------|------------------|---------------|------------------|
| BIO 191 | 4 credits | BIO 192 | 4 credits |
| MTH 145 | 4 credits | MTH 146 | 4 credits |
| WRT 1 | 3 credits | PHL 1 | 3 credits |
| HST 1 | 3 credits | HST 2 | 3 credits |
| COR 1 | <u>3 credits</u> | ESS 121 | <u>3 credits</u> |
| | 17 credits | | 17 credits |

Second Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------|------------------|---------------|------------------|
| PHY 105-103 | 4 credits | PHY 106-104 | 4 credits |
| MTH 110/111 | 3-4 credits | ESS 128 | 3 credits |
| ENG 1 | 3 credits | THE | 3 credits |
| PHL 2 | 3 credits | ESS 205 | 4 credits |
| COR-EAC 1 | <u>3 credits</u> | COR-EAC 2 | <u>3 credits</u> |
| | 16-17 credits | | 17 credits |

Third Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------|------------------|------------------|------------------|
| BIO 230 | 4 credits | BIO/ESS 335 | 3 credits |
| CHM 151+Lab | 4 credits | CHM 152 + Lab | 4 credits |
| ESS 320 | 4 credits | BIO/ESS elective | 4 credits |
| ESS 499 | 3 credits | <u>SYRE 221*</u> | <u>3 credits</u> |
| ENG 2 | <u>3 credits</u> | | |
| | 18 credits | | 14 credits |

Fourth Year

| <u>FALL</u> | | <u>SPRING</u> | |
|-------------------|------------------|----------------|------------------|
| Free elective | 3 credits | BIO/ESS 458 | 3 credits |
| COR-INS/ISS/IM | 3 credits | COR 4 | 3 credits |
| VPA | 1 credit | REL | 3 credits |
| Free elective | 3 credits | Social Science | 3 credits |
| <u>SYRE 341E*</u> | <u>3 credits</u> | Free elective | <u>3 credits</u> |
| | 13 credits | | 15 credits |

**SYRE Engineering courses at Syracuse University*