



**DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL ENGINEERING**  
**ENVIRONMENTAL SCIENCE MAJOR (ESC1)**  
**CLASS OF 2019**



ESC1 or ESC1H

NAME: \_\_\_\_\_

| TERM 1 | TERM 2 | TERM 3    | TERM 4 | TERM 5              | TERM 6         | TERM 7                  | TERM 8          |
|--------|--------|-----------|--------|---------------------|----------------|-------------------------|-----------------|
| MA103  | MA104  | MA206     | PY201  | PL300               | SS307          | MX400                   | LW403           |
| CH101  | CH102  | EV203     | PH205  | HI302               | IT305          | EV471                   | EV487           |
| EN101  | EN102  | SS201     | SS202  | CSC2 BIOLOGY        | CES EV350      | CES EV450               | EV Sci Elective |
| HI10X  | HI10X  | LX203     | LX204  | CSC3 SCIENCE        | EV388a         | CSC1 EV365              | EV Sci Elective |
| PL100  | IT105  | CES EV301 | EV210  | Atmosphere Elective | Tools Elective | Depth Elective          | Depth Elective  |
|        |        |           |        |                     |                | Honors: EV Sci Elective | Honors: EV489a  |

|    |               |    |                              |
|----|---------------|----|------------------------------|
| 22 | Core Course   | 10 | EV Science Course            |
| 1  | Science Depth | 3  | Core Engineering Sequence    |
| 1  | STEM Depth    | 3  | Complementary Support Course |

**Frequently Asked Questions**

- **Can I choose any engineering sequence?** No, all EV scientists take the EV Engineering sequence.
- **Do you have any AIADs?** Yes. In recent years we've travelled OCONUS to Uganda, Panama, Honduras, Guatemala and Israel. In addition, we sponsor internships with U.S. agencies such as the US Army Corps of Engineers, US Army Public Health Command, the US Army Environmental Command, the Federal Emergency Management Agency and many others.
- **Can I apply to do a semester abroad?** Yes. Recent majors have spent a semester in Brazil, China and Germany as well as at the Air Force Academy.
- **Can I double major or take a minor?** Possibly especially if you have validated courses. Please ask if you are interested as sequencing your coursework becomes the key to solving this puzzle.
- **Can I go to medical school if I major in Environmental Science?** Yes, four courses are required for medical school admission (CH375, CH383, CH384 and CH387) and they can all be taken as part of the Environmental Science major. Medical schools value diversity and applying as an EV Science major makes you a little bit different from others.
- **What do environmental scientists do?** Environmental scientists can work as scientists for any agency or company dedicated to environmental research, management or restoration, as medical doctors, as lawyers protecting the environment through legal means, as business men or women dedicated to green company principles and at all levels of government from local to national to include agencies such as the EPA, US Geologic Survey, Bureau of Land Management, Fish and Wildlife Service and National Park Service.
- **Are there any Army branches that especially require my skills?** Yes, the Medical Service Corps has a concentration in Preventive Medicine that has slots specifically for environmental scientists. These Army officers are known as 72Ds.

## ENVIRONMENTAL SCIENCE

### CORE CURRICULUM AND ENGINEERING SEQUENCE

- Complete the 22-course core curriculum.
- Complete CH102 as the Science Depth course.
- Complete IT305 or IT355 as the STEM Depth course.
- Complete the Environmental Engineering Sequence.

### FOUNDATION COURSES

- Complete the **three** courses listed below:

| Course | Course Title     |
|--------|------------------|
| EV210  | Water            |
| EV388a | Physical Geology |
| EV471  | Ecology          |

### ATMOSPHERE COURSE

- Complete **one** of the following courses:

| Course | Course Title |
|--------|--------------|
| EV387  | Meteorology  |
| EV389b | Climatology  |

### TOOLS ELECTIVE

- Complete **one** of the three courses listed below:

| Course | Course Title                   |
|--------|--------------------------------|
| CH387  | Human Physiology               |
| EV377  | Remote Sensing                 |
| EV398  | Geographic Information Systems |

### DEPTH ELECTIVES

- Complete **two** of the seven courses listed below:

| Course | Course Title                              |
|--------|---|
| CH383  | Organic Chemistry I                       |
| CH384  | Organic Chemistry II                      |
| EV391a | Land Use Planning and Management          |
| EV391b | Environmental Geology                     |
| EV396  | Environmental Biological Systems          |
| EV398  | Geographic Information Systems            |
| XS391  | Principles & Applications of EV Chemistry |

### FIELD ELECTIVE

- Complete **two** of the forty six courses listed below:

| Course | Course Title                 |
|--------|------------------------------|
| CH383  | Organic Chemistry I          |
| CH384  | Organic Chemistry II         |
| CH385  | Introduction to Cell Biology |
| CH387  | Human Physiology             |
| CH388  | Genetics                     |
| CH457  | Microbiology                 |
| CH460  | Human Anatomy                |
| CH473  | Biochemistry                 |
| CH481  | Physical Chemistry I         |
| DS350  | Military Communications      |
| EM381  | Engineering Economy          |
| EV371  | Geography of Russia          |
| EV372  | Geography of Asia            |
| EV373  | Geography of Latin America   |
| EV375  | Geography of Africa          |
| EV376  | Geography of Middle East     |
| EV377  | Remote Sensing               |
| EV378  | Cartography                  |
| EV380  | Principles of Surveying      |
| EV384  | Geography of North America   |
| EV386  | Geography of Europe          |

|        |  |
|--------|--|
| EV387  | Meteorology  |
| EV388b | Geomorphology  |
| EV390b | Urban Geography  |
| EV391a | Principles of Land Use Planning and Management               |
| EV391b | Environmental Geology  |
| EV394  | Hydrogeology/Hydraulic Systems                               |
| EV396  | Environmental Biological Systems                             |
| EV397  | Air Pollution Engineering                                    |
| EV398  | Geographic Information Systems                               |
| EV482  | Military Geography   |
| EV489a | Advanced Individual Study I                                  |
| LW473  | Environmental Law  |
| LW481  | International Law  |
| MA363  | Vector Calculus and Ordinary Differential Equations          |
| MA366  | Applied Engineering Math                                     |
| MA376  | Applied Statistics   |
| MA391  | Mathematical Modeling  |
| MA396  | Numerical Methods for the Solution of Differential Equations |
| MA476  | Mathematical Statistics                                      |
| PL396  | Science Network Analysis for Public Policy                   |
| PY373  | Topics in Ethics   |
| PY386  | Philosophy of Science  |
| SS381  | Cultural/Political Anthropology                              |
| SS485  | Politics and Development of Sub-Saharan Africa               |
| XS391  | Principles & Applications of EV Chemistry                    |

### COMPLEMENTARY SUPPORT COURSES

- Complete the following course:

| Course | Course Title                 |
|--------|------------------------------|
| EV365  | Geography of Global Cultures |

- Complete **one** of the following two courses:

| Course | Course Title     |
|--------|------------------|
| CH275  | Biology          |
| CH375  | Advanced Biology |

- Complete **one** of the following five courses:

| Course | Course Title       |
|--------|--------------------|
| PH206  | Physics II         |
| MA205  | Calculus II        |
| CH457  | Microbiology       |
| CH473  | Biochemistry       |
| MA376  | Applied Statistics |

### INTEGRATIVE EXPERIENCE

- Complete the following course:

| Course | Course Title           |
|--------|------------------------|
| EV487  | Environmental Security |

### HONORS PROGRAM IN ENVIRONMENTAL SCIENCE

- Cadets pursuing the honors program will complete two additional courses: 1) EV489A Advanced Individual Study and 2) an additional course from the *field electives* list. Cadets also must graduate with an APSC of at least 3.0 in the USMA core curriculum and an APSC of at least 3.5 in the major.

### REQUIRED COURSES

| Course | Course Title                             |
|--------|--|
| EV489a | Advanced Individual Study I              |
| XXXXX  | One course from the Field Electives list |