



DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL SCIENCE MAJOR (ESC1)
CLASS OF 2023



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	EV388a	HI302	EV471	EV487
EN101	EN102	SS201	SS202	EV310	CES EV350	CES EV450	Field Elective
HI10X	HI10X	LX203	LX204	CSC3 Math/Science	CY305	CSC1 EV365	Field Elective
PL100	IT105	CES EV301	CSC2 Biology	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

INSTRUCTIONS FOR COMPLETING THE ENVIRONMENTAL SCIENCE MAJOR (ESC1)

- List below all validated courses and delete them from the matrix.
- Fill in the appropriate two-semester fourth-class history and two-semester third-class foreign language sequences.
- Verify the 22-course core curriculum requirements listed in the matrix.
- Add CH102 as the Science Depth course in the core curriculum.
- Verify CY305 or CY355 is selected as the STEM Depth course in the core curriculum.
- Verify the 3-course Environmental Engineering Core Engineering Sequence (CES) is scheduled (EV301, EV350, EV450).
- Schedule the three Complementary Support Courses.
 - Select EV365 for CSC 1. Select CSC2 biology from the following two courses: CH275 or CH375 (See Note 14 below).
 - Select CSC3 Math/Science from one of the following: PH206, MA205, CH457, CH473, PH256, or MA376.
- Schedule the following 3 required environmental science foundation courses: EV310, EV388a/EV399a, EV471.
- Schedule 1 atmosphere course: EV387 (spring) or EV389b (fall) and Schedule 1 tools elective: EV377, EV398 or CH387.
- Schedule 2 depth electives: EV391a (fall), EV391b (spring), EV396 (fall), EV398, XS391 (spring), CH383, CH384.
- Schedule two electives from the Environmental Science field elective list. Substitutions of other courses as the field elective can be approved by the Environmental Program Director only. If needed, move EV388a to Term 7 and EV365/CSC3 can move to any term.
- Schedule the Integrative Experience: EV487 [Term 8 only, DO NOT schedule earlier without EV PD approval].
- For the Honors program schedule EV489a and select one additional elective from the Field Elective list. Identify EV489a research topic & advisor at least 1 semester prior to starting independent study and update EV Program DAC.
- For Pre-Med track, cadets should take the following courses: CH375, CH383, CH384, CH385, CH387, and CH473. Competitive candidates can apply for Med School AIAD offered by D/C&LS going into their Firstie year, however CLDT must be completed the summer going into Cow year.
- If interested in semester abroad/double major/minor, have cadet provide you information on requirements so you can deconflict scheduling (will likely require STAP). If enrolling in STAP, encourage cadet to also take a DPE course same time. If pursuing SAP, SAP must be scheduled during Term 6.

VALIDATIONS & NOTES:

Revised 19 September 2019

ENVIRONMENTAL SCIENCE

CORE CURRICULUM AND ENGINEERING SEQUENCE

- Complete the 22-course core curriculum.
- Complete CH102 as the Science Depth course.
- Complete CY305 or IT355 as the STEM Depth course.
- Complete the Environmental Engineering Sequence: EV301/350/450.
- Ensure prereqs are satisfied (courses w/non-core pre-reqs noted w/ *).

FOUNDATION COURSES

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

Course	Course Title
EV310	Aquatic Science
EV388a+	Physical Geology
EV471	Ecology

+Note: May apply for EV399a as AIAD for credit

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 (*CH383)
EV391a	Land Use Planning and Management
EV391b	Natural Hazards & Risk
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 (*CH102)
CH384*	Organic Chemistry II (*CH383)
CH385*	Introduction to Cell Biology (*CH375)
CH387*	Human Physiology (*CH375/CH275)
CH388*	Genetics (*CH375)
CH457*	Microbiology (*CH375)
CH460*	Human Anatomy (*CH102,CH375,CH385,CH387)
CH473*	Biochemistry (*CH384)
CH481*	Physical Chemistry I (*CH383)
DS350	Persuasive 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	Land Use Planning and Management
EV391b	Natural Hazards and Risk
EV394	Hydrogeology/Hydraulic Systems
EV396	Environmental Biological Systems
EV397	Air Pollution Engineering
EV398	Geographic Information Systems
EV482	Military Geography
EV489a	Advanced Individual Study I
EV489b	Advanced Individual Study II
LW473	Environmental Law (Fall Semester Only)
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
PY329	Topics in Ethics
PY350	Philosophy of Science
SS381*	Cultural/Political Anthropology
SS387*	Public Finance
SS485	Politics and Development of Sub-Saharan Africa
XS391	Principles & Applications of EV Chemistry

COMPLEMENTARY SUPPORT COURSES

- Complete the following **CSC1** course:

Course	Course Title
EV365	Geography of Global Cultures

- Complete **one** of the following two **CSC2 Biology** courses:

Course	Course Title
CH275	Biology
CH375	Advanced Biology

- Complete **one** of the following five **CSC3 Math/Science** courses:

Course	Course Title
PH206	Physics II
PH256	Advanced Physics II
MA205	Calculus II
MA376	Applied Statistics
CH457*	Microbiology (*CH375)
CH473*	Biochemistry (*CH384)

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