

# TRACK: EARTH SYSTEM SCIENCE (ESS)

Advising Sheet for (student) \_\_\_\_\_ (email) \_\_\_\_\_  
(date filled out) \_\_\_\_\_ (student's year at Clark) \_\_\_\_\_

This form to plan your course of study and keep track of your progress towards completing the major requirements.

## ➤ Core Courses (3)

- BIOL 101 Introduction to Biology
- EN 101 Environmental Science and Policy: Introductory Case Studies
- GEOG 104 Earth System Science

### Core Courses (3) | Semester

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## ➤ Basic Skills (2; at least 1 at the 200 level)

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|---|--|
| BIOL 106 Introduction to Biostatistics        | BIOL 206 Advanced Biostatistics            |
| GEOG 110 Introduction to Quantitative Methods | GEOG 247 Intermediate Quantitative Methods |
| GEOG 216 Field Methods for Environ. Science   | GEOG 260 Quantitative Modeling             |
| MATH 120 Calculus I                           | MATH 121 Calculus II                       |
| ECON 160 Introduction to Statistical Analysis |  |

### Basic Skills (2) | Semester

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## ➤ Introductory Earth System Science Courses (4)

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|---|--|
| BIOL 114 Marine Biology                 | EN 120 Discovering Environmental Science |
| GEOG 102 Weather and Climate            | GEOG 116 Forest Ecology                  |
| GEOG 119 The Arctic in the Anthropocene | (if offered CHEM 141 or 142 may count)   |

### Elective Introductory Earth Systems Science Courses (4) | Semester

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## ➤ Skills GIScience (1)

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|---|---|
| GEOG 087 Intro to Environmental Info. Systems | GEOG 282 Advanced Remote Sensing          |
| GEOG 190 Introduction to GIS (also ID 190)    | GEOG 293 Introduction to Remote Sensing   |
| ID 296 Advanced Vector GIS                    | GEOG 296 Advanced Raster GIS              |
| GEOG 246 Geospatial Analysis with R           | GEOG 260 GIS & Land Change Models         |
| GEOG 279 GIS & Map Comparison                 | GEOG 287 New Methods in Earth Observation |

### Skills GIScience (1) | Semester

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**➤ Advanced Earth System Science Courses (4; at least 2 from Geography)**

BIOL 201 Ecology of Atlantic Shores  
 BIOL 216 Ecology  
 BIOL 220 Population Biology  
 BIOL 224 Ecology of Disease Vectors  
 BIOL 258 Small Scale Land Conservation

GEOG 205 Introduction to Hydrology  
 GEOG 216 Field Methods in Environmental Science  
 GEOG 232 Landscape Ecology  
 GEOG 263 Climate System & Global Environ. Change  
 GEOG 283 Terrestrial Ecosystems & Global Change

**Elective Advanced Earth Systems Science Courses (4) | Semester**

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**➤ Human-Environment Courses (2)**

GEOG 101 Food Justice & Food Movements  
 GEOG 179 Global Environmental Justice  
 GEOG 220 Property and the Global Environment  
 GEOG 225 Environmental Politics  
 ECON 254 Environmental Economics  
 ECON 256 Modeling Ecological-Economic Systems  
 ECON 257 Enviro. & Natural Resource Economics  
 ECON 258 The Economics and Policy of Food  
 MGMT 252 Green Business Management

GEOG 136 Gender and Environment  
 GEOG 180 Earth Transformed by Human Action  
 GEOG 224 Economy and Environment  
 GEOG 261 Decision Methods in Env. Mgmt & Policy  
 EN 207 Climate Change, Energy & Development  
 EN 242 Sustain. Develop Assessment & Planning  
 PSCI 176 U.S. Environmental Politics  
 PSCI 276 Environmental Law  
 PHIL 131 Environmental Ethics

(or EN 177, 241, 245, 255, 258, 264, 269, 277, 282 as offered)

**Human-Environment Courses (2) | Semester**

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**➤ Capstone Experience (1)**

To fulfill the capstone experience requirement, all ESS majors must complete an independent research project that is recognized with a course credit. There are several options including a regular course with a final project requirement (e.g. EN 290, GEOG 205, GEOG 263, GEOG 283), a Directed Study (EN 299, GEOG 299), an Honors thesis (EN 297, GEOG 297), an Internship (EN 298, GEOG 298), a seminar course in which the student presents an overview of a research paper or theme and leads ensuing group discussion (e.g. 300-level graduate seminars), or some other research or practical experience approved by the student's advisor.

**Research Experience (1) | Semester**

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**➤ Honors (2, optional not required for major)**

If student is a candidate for honors: Students in the honors track must apply to the ES director and complete at least two semesters of independent research (EN 297 or GEOG 297).

**Honors Directed Research (2) | Semester**

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