**STUDENT INFORMATION**

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| **Name:**       | **NAU ID:**        |
| **NAU E-mail Address:**        | **Phone Number:**       |
| **Term of Admission:**         | **Expected Graduation Term/Year:**        |
| **Advisor:**       | **Required Credits for Degree Program: 60** |

# **Common Courses (7 units required):**

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| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
| ENV 555 | The Environmental Science-Policy Interface |       |       |       |       |       |       |
| EES 605 | Topics in Earth and Environmental Science and Policy |       |       |       |       |       |       |
| EES 606 | Research Methods in Earth and Environmental Science |       |       |       |       |       |       |
| ESE 698 | Graduate Seminar: School of Earth and Sustainability Seminar Series |       |       |       |       |       |       |

**II. Seminar Courses (2 units required):** Choose a 698 Graduate Seminar course with any prefix

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| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
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**III. Professional** **Experience (6 units required):**  Any experience that significantly broadens knowledge and skills, and advances the student’s career objectives. The requirement can be satisfied through regular coursework or through individualized study that expands the student’s skills in an area outside his/her dissertation but in a professional area related to his/her career goals, or research experiences within the context of the dissertation. See your advisor.

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| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
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**IV.** **Research Methods (3 units required):** In consultation with your advisor, select any graduate level course with significant content in statistics and/or science/engineering research methods.

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| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
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**V. Emphasis Area (27 units required):** Select one of the following emphases.

* **Climate and Environmental Change Emphasis:**
	+ Select graduate-level courses with EES, ENV, BIO, or FOR prefixes, or other courses that focus on climate or environmental change (27 units)
* **Earth Systems Emphasis:**
	+ Select graduate-level courses with GLG prefix, or other courses that focus on earth systems (27 units)
* **Ecology, Evolution & Conservation Biology Emphasis:**
	+ Select BIO, ENV, or FOR 577 (3 units)
	+ Select one seminar course from FOR 505 or BIO 698 (1 unit)
	+ Breadth Courses (9 units): Select one course from each of the following groups:
		- **Quantitative:** BIO 523, BIO 580, BIO 676, FOR 606, (EES 529 or GSP 529), or other graduate-level coursework in quantitative ecology at NAU, guided and approved by advisor input.
		- **Physiological/population/community:** BIO 570, BIO 571, BIO 573, BIO 663, BIO 673, ENV 540, FOR 504, FOR 517, FOR 520, FOR 543, FOR 545, FOR 550, FOR 551, FOR 552, FOR 553, FOR 560, FOR 580, FOR 582, FOR 604, or other graduate-level coursework in physiological, population, or community ecology at NAU, guided and approved by advisor input.
		- **Ecosystem/global:** (BIO 507 or FOR 507), BIO 578, ENV 571, FOR 515, FOR 544, or other graduate-level coursework in ecosystem/global ecology at NAU, guided and approved by advisor input.
	+ Select additional graduate-level courses with EES, ENV, BIO, or FOR prefixes, or other courses that focus on ecology, evolution, and conservation biology (14 units)
* **Engineering Sustainable Systems Emphasis:**
	+ Select graduate-level courses with CENE or ME prefixes, or other courses that focus on engineering sustainable systems (27 units)
* **Environment and Society Emphasis:**
	+ Select graduate-level courses with ECO, EES, ENV, FOR, POS, SOC, or SUS prefixes, or other courses that focus on economic, political and social theories and practices related to environmental sustainability (27 units)

**Chosen Emphasis Area:**

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**VI. Dissertation (15 units required):** For the research, writing, and oral defense of an approved dissertation. Students can only count 15 units of dissertation credit toward the degree; however, students may end up taking additional units because students must enroll for it each term while working on the dissertation.

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| **Course**  | **Course Title** | **Replacement Course** | **Semester** | **Year** | **Units** | **Grade** | **T/P/I/A\*\*** |
| EES 779 | Dissertation |       |       |       |       |       |       |
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**ADDITIONAL REQUIREMENTS**

You may have no more than 6 units of 400-level courses. These 400-level courses cannot have been used to satisfy the requirements for any previous degree program(s). You must get your dissertation committee's approval for any courses taken outside of NAU.

In choosing courses, please be aware that your dissertation committee must approve all of your courses.

**RESEARCH REQUIREMENTS**

In addition to completing 45 units of coursework, you must demonstrate your independence, research skill, and experience in a discipline within earth sciences and environmental sustainability by choosing a problem and research area in consultation with your dissertation committee and then satisfactorily completing a dissertation.

Your dissertation research meets our standards when it is soundly based in the theoretical context of the subject, proceeds with a sound design that gives due attention to statistical adequacy, and concludes with findings and inferences set forth within an appropriate theoretical context. Your dissertation must demonstrate that you have mastered your field of specialization, carried out independent scholarly work, and contributed significant new knowledge. You must pass an oral defense of your dissertation.

**COMPREHENSIVE EXAM**

We also require that you demonstrate written and oral communication skills in English at a level that will allow you to effectively communicate your ideas and knowledge to a wide range of audiences. Part of this demonstration involves comprehensive oral exams by the end of your 4th semester designed to establish your competence in a breadth and depth of subjects within your emphasis area and the larger field of earth sciences and environmental sustainability. If the comprehensive exam is unlikely to be completed by the fifth semester following admission to the program, student should submit, in writing, and explanation for the longer timeline. Exemptions to the five-semester timeline that are requested following the first committee meeting will only be granted in extenuating circumstances.

**RESEARCH COMPETENCY REQUIREMENT**

NAU policy for PhD programs includes a research competency requirement that must be satisfied before a student can be admitted to candidacy. This interdisciplinary doctoral program recognizes [ENV 555](http://catalog.nau.edu/Courses/course?courseId=002933&catalogYear=1415), [EES 605](http://catalog.nau.edu/Courses/course?courseId=003801&catalogYear=1415), and [EES 606](http://catalog.nau.edu/Courses/course?courseId=003802&catalogYear=1415), plus one graduate level course with significant content in statistics and/or science/engineering research methods, as meeting this requirement.

**ADDITIONAL INFORMATION**

This Program of Study documents your progress on your academic requirements for the degree and catalog year listed above. For Department of Defense-related requirements, it serves as the evaluated and approved educational plan.

In addition to all University and Office of Graduate & Professional Studies (OGPS) policies, procedures, and requirements, graduate students must also adhere to the academic requirements, policies, procedures, and criteria outlined by their program’s Graduate Student Handbook.

**Students:**

You must secure official approval by your advisor and Department Chair/Director before submitting your final Program of Study for graduation.

By signing or entering your name below, you agree to the following statement:

*“Students are responsible for complete knowledge of Academic Catalog requirements in their degree plan for their catalog year and adhering to all policies in the Academic Catalog.”*

**Advisors and Chairs/Directors:**

Please indicate approval of the curriculum on the Program of Study by placing your signature (formal digital signatures are permitted) in the space provided.

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| **Student:**       | **Date:**       |
| **Advisor:**       | **Date:**       |
| **Chair:**       | **Date:**       |

**\*\*Transfer/Previous Graduate Degree/Internal Transfer/Accelerated (T/P/I/A)** – Must have Advisor approval

Transfer T = Course transferred from another university

Previous Graduate Degree P = Course taken at NAU from previous graduate degree

Internal Transfer I = Graduate-level course taken as undergraduate; Not applied to undergraduate degree

Accelerated Program “Dual-use” A = Courses completed during the undergraduate career and used to satisfy both the Bachelor’s and Master’s degree requirements. ONLY for designated Accelerated students.