

Handbook and Progression Plan

**Earth Sciences & Environmental Sustainability
Doctor of Philosophy**



College of the
Environment, Forestry,
and Natural Sciences

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FOUNDING ETHOS

Arizona, the nation, and the world are facing unprecedented challenges in the areas of natural resources, the environment, and sustainability. Meeting these challenges will require a workforce that is grounded in rigorous science and engineering, and able to translate and communicate the relevance of emerging science and engineering to policy makers, business leaders, and the public. The Earth Sciences & Environmental Sustainability Ph.D. Program provides subject-matter depth and an interdisciplinary perspective that will enable graduates to work at the highest level to link sound science to effective policy and management to address emerging issues such as water scarcity, biodiversity loss, and climate change. Drawing on Northern Arizona University's demonstrated strengths in the natural sciences, environmental sustainability, and environmental engineering, we provide training that enable students to move effectively among themes traditionally segregated into separate degrees, so that these students become creative problem solvers who are able to translate and communicate the relevance of emerging science and engineering to policy makers, business leaders, and the public. The program stresses a mastery of quantitative science and a deep understanding of the economic and social contexts underlying environmental challenges, along with a policy sophistication that will allow students to mobilize scientific knowledge appropriately and effectively in our complex society.

INTRODUCTION

The PhD degree in Earth Sciences and Environmental Sustainability (ESES) addresses societal problems through the integration of basic and applied research. This degree is intended for those seeking a terminal degree in the interdisciplinary fields of Earth and Environmental Sciences, Engineering and Environmental Sustainability, as well as those focused on rigorous and novel interdisciplinary applications of basic science to societal problems. The broadly defined ESES PhD degree program is anchored by five emphasis areas: (1) Climate and Environmental Change, (2) Earth Systems, (3) Ecology, Evolution and Conservation Biology, (4) Engineering Sustainable Systems, and (5) Environment and Society. The chosen emphasis area will be included on graduation diplomas for this degree.

The ESES doctoral program is designed with considerable flexibility to allow both traditional and non-traditional students from diverse backgrounds to pursue the PhD degree. While the majority of students accepted into the ESES PhD program will have already earned a Master's degree in a complementary field, there is flexibility to accept students with substantial professional experience in-lieu of a Master's degree. Also, there is flexibility to accept non-traditional students who wish to pursue a PhD degree while maintaining part-time or full-time employment. This diversity of students reflects society's need for skilled, interdisciplinary scientists to address the increasing number and complexity of challenges in diverse environmental fields.

This handbook describes the steps for successful completion of the PhD degree in ESES and specifies the procedures, policies, and timelines for progression through the program. This document is designed to augment information about requirements that apply to all NAU graduate programs that are posted on the Graduate College webpages. Students are responsible for understanding the policies and procedures of the Graduate College and the requirements for the ESES PhD degree.

- Refer to the ESES PhD program website at: <http://nau.edu/CEFNS/NatSci/SESES/Degrees-Programs/Graduate/PhD-Earth-Sciences-Environmental-Sustainability/>
- Additional resources for NAU graduate students are at: <https://nau.edu/graduate-college/campus-resources/>
- See the policies for all NAU PhD degrees, including the residency requirements: <https://policy.nau.edu/policy/policy.aspx?num=100805>
- Download the “Checklist for Doctoral Students”, which describes the steps that the Graduate College requires to complete a doctoral program at NAU: <http://www2.nau.edu/gradcol/ThesesDiss/ChecklistDoctoralStudents.pdf>

EMPHASIS AREAS

The **Climate and Environmental Change** emphasis is designed to develop research and educational skills that:

1. Advance new understanding about natural climate variability.
2. Improve projections of climate change and its impacts on ecosystems and their ecological, hydrological and geological underpinnings.
3. Apply this knowledge to inform policy decisions about how to best manage natural resources under changing climate and related environmental stresses.

The emphasis combines the long-term perspective from geological archives with process-oriented investigations of today, with the goal of integrating a field-based understanding of natural systems into predictive models to support sustainable resource management in the face of climate change.

The **Earth Systems** emphasis will prepare you to pursue research and educational opportunities that:

1. Advance cutting-edge research in the Earth sciences.
2. Increase knowledge in the critical areas for society of energy, natural resources, water, and natural hazards.
3. Apply this knowledge in areas that bridge the geosciences with physics, chemistry, engineering, and biology.

This emphasis area will train and educate leaders in rapidly growing industries such as natural resources and energy, and in government agencies that require PhD-level researchers to inform policy decisions on some of the greatest problems facing society.

The **Ecology, Evolution, and Conservation Biology** emphasis is designed to develop research and educational skills that:

1. Advance the frontiers of understanding of ecological and evolutionary processes.
2. Synthesize applied, empirical, or experimental work from multiple disciplines to confront integrative challenges at the cutting edge of applied and basic research.
3. Apply ecological, evolutionary, and conservation theory to conservation challenges, incorporating the human dimensions of sustainable management and policy.

This focus area will train and educate leaders in areas of research and application at the cutting edge of conservation and sustainability professions, including basic research, management decision-making, sustainable policy development, and applied conservation.

The **Engineering Sustainable Systems** emphasis is designed to develop research and educational skills that:

1. Advance engineering analysis and applications relevant to sustainable development.
2. Improve the efficiency and effectiveness of engineering processes, products, and education.
3. Understand and apply knowledge in the sustainability contexts of economic viability, environmental compatibility, societal impacts, and policy development and implications.

This emphasis is designed for engineers who are interested in understanding the economic, societal and environmental implications of engineering systems. It provides a strong background in engineering enhanced by understanding future sustainability of our environment, and will prepare you for careers in academia, industry, and governmental organizations.

The **Environment and Society** emphasis is designed to develop research and educational skills that:

1. Advance knowledge in environmental policy and social theory related to sustainability.
2. Conduct cutting-edge interdisciplinary research at the nexus of the natural and social sciences.
3. Apply this knowledge in decision making for sustainable resource management and socio-economic policies.

This emphasis will prepare leaders in the areas of natural resources management, community engagement, the non-profit/NGO sector, academia, and in government agencies that require PhD-level researchers to inform policy decisions that address some of the greatest environmental problems facing society today.

OVERVIEW OF THE ESES DEGREE

Required Coursework, see pages 11-12 for more detailed descriptions of these requirements.

Credits	Catalog Number	Description
24	NA	Maximum transferrable from MS or MA degree
2	EES 605/606	Enroll during first two semesters
3	ENV 555	Environmental Science-Policy Interface
2	EES 698	School of Earth & Sustainability Seminar Series
2	XXX 698	Graduate Seminar in any program (e.g. EES, ENV, GLG, EGR, BIO, FOR, SUS, POS, etc.)
3	Elective	Approved by committee; must be graded
3	Research Methods	Approved by committee
6	Prof. Experience	Formal or individualized course
15	EES 799	Dissertation; enroll only after passing comprehensive exams
TOTAL: 60		

Recommended Timeline

The following timeline is recommended for traditional, full-time students entering the PhD program following a Master's degree in a similar field of study. For non-traditional students or students entering the program without a Master's degree, an alternative timeline should be developed in close consultation with their faculty advisor and dissertation committee.

Semester 1 - Work with dissertation advisor to develop a provisional plan of study and provisional dissertation committee.

Semester 2 - Formalize dissertation committee and hold first committee meeting. Under the supervision and approval of faculty advisor and dissertation committee, develop a plan of study and timeline for completion of written and oral comprehensive exams. Prepare a draft prospectus for the dissertation research.

Semester 3 – Revise and finalize dissertation prospectus which includes an extensive literature review and detailed research plan.

Semester 4 - Submit dissertation prospectus as the written comprehensive exam and take the oral comprehensive exam. When the comprehensive exams are passed, and approved by the Graduate College, the student becomes an official PhD candidate.

Semester 5 through completion – Perform research, write dissertation and defend dissertation.

GOVERNANCE OF THE ESES PhD PROGRAM

ESES PhD Advisory Council

The ESES PhD advisory council works closely with the Graduate College to administer the ESES PhD program. The council is composed of representatives from academic units and agencies directly involved in the program. A majority of the PhD advisory council members will be advisors to active PhD students. The council determines policies and procedures of the program, recommends best practices for program requirements and guides meaningful interdisciplinary interactions within the program. Specific duties of council members include:

- Represent the PhD program to their home academic unit or agency
- Identify research opportunities for prospective students
- Review applications and participate in admissions to the PhD program
- Find prospective advisors for applicants
- Update course offerings to support the PhD program

Graduate Program Coordinator

A staff member hosted in SES or one of the participating units will work closely with the ESES advisory council and the Graduate College to answer inquiries from prospective students, manage applications and admissions to the program, and monitor PhD candidates' advancement through the program.

Faculty Advisor

All students enter the PhD program with a designated faculty advisor (“major professor”) who is a faculty member in SES, an adjunct professor in SES or an approved affiliate in SES. The relationship between students and advisor is established by mutual agreement based on shared interests and available resources. The advisor is ordinarily permanent; however, students may change advisors if deemed appropriate after consultation with the current advisor, the potential new advisor, and the Chair of the PhD advisory council. Students must meet with their Advisors prior to the first semester to select courses and set goals for the first semester. Students should work with their advisor to identify a dissertation committee and should meet regularly to discuss the dissertation project and to develop each student's individualized plan of study.

Dissertation Committee

The role of the dissertation committee is to advise and mentor the PhD student during their advancement through the PhD program as well as critique and assess the quality of the written and oral comprehensive exams and dissertation of the student. At least one of the committee members (not including the advisor) must be from SES. The advisor does not have to be a faculty member in SES. The assessment and formal decisions on the student's exams and materials (pass, fail, or revise) and a written justification will be forwarded to the Graduate College. NAU Policy [100806](#), “*Requirements for Theses and Dissertations*” outlines the

requirements for dissertation committees. The specific composition of the dissertation committee for this program is explained in the following section of this handbook.

DEGREE PROGRESSION

Formation and Approval of Dissertation Committee

The dissertation committee is composed of the faculty advisor and at least three others. At least four members of the committee must hold earned doctoratal degrees in a discipline within or related to SES. At least one member of the dissertation committee must be from outside the student's primary academic unit, and off-campus members are encouraged. The role of the outside member is to bring additional breadth of expertise represented by the committee and to encourage development of the interdisciplinary aspects of the project. Committee members may include tenure-track and research professors, adjuncts, or other professionals with appropriate experience to advise and evaluate a PhD dissertation.

Download the *Dissertation Committee Recommendation Form* at: <https://nau.edu/graduate-college/forms/>

The faculty advisor completes this form and submits it to the Graduate College. This form lists the proposed the dissertation committee and a brief summary of the proposed dissertation topic. A current CV must be included for committee members from outside of NAU. The membership of the proposed dissertation committee will be reviewed by the Graduate Dean, who will formally appoint the committee. The dissertation committee is formalized upon the Graduate Dean's approval. The Graduate Dean will *not* approve substitute committee members within two months of the dissertation defense.

First Committee Meeting

The goal of the first committee meeting is to develop the overall plan for the degree program, including how each of the requirements will be fulfilled. The meeting typically lasts two hours and begins with a brief presentation by the student to introduce their proposed dissertation topic in the context of their research objectives and career goals. In preparation for the first meeting, the student should work with their advisor to complete a first version the *Program of Study Form*, and distribute copies to each committee member before the first meeting.

Download the *Program of Study* form at: <https://nau.edu/graduate-college/programs-of-study/>

Discussion of this form and guidance on the proposed dissertation research will be the focus of the meeting. The *Program of Study should be edited, approved and signed during the first committee meeting and a copy sent to the Graduate Coordinator to be kept in the student's file. Additionally, the student should load the completed, signed form in their student LOUIE account, under milestone documents.*

The student is responsible for scheduling the first committee meeting prior to the end of the second semester. During subsequent years, students are required to arrange a meeting of their committee at least once per academic year to assess progress and to discuss research results and

future research plans. Although one meeting per year is the minimum, it is best to keep the committee updated more frequently.

Program of Study Requirements

Until the comprehensive exams are passed, students must maintain continual enrollment of at least 3 units per semester (excluding summers), including one face-to-face course (3 units) per academic year (see: <https://policy.nau.edu/policy/policy.aspx?num=100805>).

The student works with their advisor and dissertation committee to develop an appropriate set of courses based upon on the student’s dissertation topic and career objectives. The PhD degree at NAU requires a minimum of 60 credit hours beyond the bachelor’s degree. Of the 60 hours, 15 hours must be EES 799 (Dissertation Research) taken following enroll only after passing comprehensive exams. Additional hours of EES 799 do not count toward the minimum credit hour total of 60. The remaining 45 credit hours must be approved by the dissertation committee. Of these, at least 37 credit hours must be at the 500 or 600 level, and no more than 6 credits may be at the 400 level. Any 400-level courses counted towards the Program of Study must be taken at NAU. As approved by the dissertation committee, up to 24 credit hours completed for a Master’s degree (at NAU or elsewhere) may be applied toward the Doctoral degree.

Students must maintain a GPA of 3.0 or better. Only 6 hours of grade C are allowed in the PhD degree program. Any C grade places the student on academic probation and requires a plan, presented to Graduate College, for improvement in future courses. In the case of poor academic performance, only one course may be repeated for the second grade to count toward graduation, but both grades are used in computing the grade point average.

Required Coursework

Credits	Catalog Number	Description
24	NA	Maximum transferrable from MS or MA degree
2	EES 605/606 ^a	Enroll during first two semesters
3	ENV 555 ^b	Environmental Science-Policy Interface
2	EES 698 ^c	School of Earth & Sustainability Seminar Series
2	XXX 698 ^d	Graduate Seminar in any program (e.g. EES, ENV, EGR, GLG, BIO, FOR, POS)
3	Electives	Approved by committee; must be graded
3	Research Methods ^e	Approved by committee
6	Prof. Experience ^f	Formal or individualized course
15	EES 799	Dissertation; enroll only after passing comprehensive exams

TOTAL: 60

^aAll first-year ESES students are required to take ENV 605 (Regional Topics) and ENV 606 (Research Methods). The objectives of these two one-credit courses are to:

- Introduce first-year students to SES faculty and areas of research excellence
- Develop a strong graduate student cohort
- Engage in interdisciplinary activities

- Provide instruction on preparing a research proposal
- Introduce scientific research methods used across disciplines
- Practice project and time management to achieve candidacy
- Encourage interaction between students and their thesis committee
- Provide individual feedback on student's research projects
- Develop science-communication skills
- Review standards of professional research conduct

^bBecause the intent of this PhD program is to provide a unique and distinct interdisciplinary graduate education experience that integrates science and engineering with policy, all ESES students are required to take ENV 555, Environmental Science-Policy Interface. This seminar examines the generation of scientific knowledge and how that knowledge is presented, evaluated, manipulated, and applied as political forces shape environmental policy. The objectives of this course are to:

- Examine the widespread misunderstanding and misuse of science in policy formulation, and how this failure may lead to public policy based on ideological, rather than scientific arguments.
- Examine how scientists often fail to understand critical social and political dynamics, constraining the utility and value of scientific understanding.
- Examine criticisms of scientific and policy processes, while exploring alternative forms of integrating social and scientific values in the development of environmental solutions.
- Engage in interdisciplinary research
- Develop science-communication skills
- Develop skills in team research and project management

^c**School of Earth & Sustainability Seminar Series (EES 698)** features speakers from both within and outside NAU invited to deliver research talks. Doctoral students will network and engage with senior scientists in their fields, as well as regularly connect with cutting-edge research across a range of subdisciplines, fostering interpersonal exchange of science and professional development. Any substitutes for this requirement must be consistent with this objective.

^d**Graduate seminars (698)** are dedicated to reading and discussion of the current literature on a tightly focused PhD-level topic. Any substitutes for this requirement must be consistent with this objective.

^e**Research methods:** Any graduate-level course with significant content in statistics and/or science/engineering research methods. This course combined with ENV 555, EES 605, and EES 606 fulfills the research competency requirement for the degree as outlined in the academic catalog.

^f**Professional experience:** Any experience that significantly broadens knowledge and skills, and advances career objectives. Can be satisfied through classes or research experiences that expands (1) skills in an area outside the dissertation but in a professional area related to career goals.

Individualized course (e.g. 608 or 697) must have a course contract on file prior to the start of the activity.

Examples of professional experiences include:

- Complete courses at NAU or another university that develop leadership, communication, management, or other professional skills that will significantly advance the ability to gain employment in your selected career.
- 608 – Fieldwork Experience (Supervised field experience in an appropriate agency, organization, or other situation)
- Spend a semester at another university to learn cutting-edge research methods, to collaborate on a project with another research group at that university.
- Work as an apprentice on a project that is not part of the dissertation, but could be related.
- Participate in a professional workshop to learn new research skills, analyze shared data, develop and test models, synthesize information, or prepare a manuscript.
- Teach a course as the instructor of record and receive formal training in teaching methods, such as a professional development workshop.
- Lead a meaningful outreach activity and generate a major outreach product.

Individualized courses (e.g. 608 or 697) must have a course contract on file prior to the start of the activity. Download the Independent Study Proposal Form at

https://policy.nau.edu/policy/Documents/Independent_Study_Form_FINAL.pdf

Comprehensive Examination

This examination has written and oral components that are designed to test students' comprehensive knowledge of their field of study, both in breadth across the general topic, and depth within their area of specialization. The examination serves as the primary checkpoint for the dissertation committee to rigorously assess the student's preparedness to advance to candidacy for a doctoral degree. Students who advance to candidacy have demonstrated the motivation and ability to comprehend the limits of knowledge within their field and are able to design and conduct original and rigorous investigations to advance knowledge beyond its current limits.

If the comprehensive exam (both written and oral parts) is unlikely to be completed by the end of the fifth semester following admission to the program, students must submit a clear plan for completing the exam at a time that the student and their dissertation committee have determined is reasonable, given the individual circumstances and particular pace and duration of the student's anticipated progress to the PhD degree. *Flexibility in the completion of the comprehensive exam is intended to provide for the diverse situations presented by non-traditional students, not as an avenue to prolonging advancement to candidacy.*

Written component of the Comprehensive Examination

By the end of the second semester traditional full-time students should present a *draft* of their dissertation prospectus to their dissertation committee for review. Part-time students may have a different time-line as determined by their individualized plan of study. The main focus for the

prospectus draft would be an extensive, polished, and near-final literature review (“background”) that would demonstrate a student’s ability to perform critical analysis. The draft dissertation prospectus should present ideas about questions and/or hypotheses that the dissertation will address. Initial drafts of other sections (project summary, introduction, broader impacts, research plan, and, if warranted, timeline and budget) should be included. The draft prospectus should be examined by the dissertation committee and timely feedback should be provided to the student.

Research is rarely a solitary endeavor and the student is encouraged to seek guidance from a broad range of experts as they formulate the conceptual framework and research questions during the preparation of their dissertation prospectus. Although the written product must be the student's original work, this exam is designed to provide training and experience in the cooperative nature of research. Interaction between the student, their committee, or other experts is expected during the preparation and revision stages of the dissertation prospectus. To honor these collaborations, the student must include a brief statement stating their role in the preparation of the prospectus. In addition to verifying that the text itself is original, the statement should reflect the origin of the ideas for the project and state the approximate proportion of the content that is the direct result of the student’s own creation. This exercise follows the current trend in publications to include a brief and transparent statement of each author's contributions.

The prospectus is expected to be a high quality, in-depth, research proposal. For those cases where the project is already funded by a sponsored project, the prospectus should not simply restate the ideas that enabled funding for the student’s work. As described above, the prospectus should incorporate an extensive literature review and well-developed hypotheses or summary of ideas to be investigated, revised and expanded in response to recommendations from the dissertation committee’s review of the draft document. As a guideline, a target length for the prospectus would be 20-25 pages, not including references and, when requested, a budget and budget justification.

Download the Written Comprehensive Exam Form at <https://nau.edu/CEFNS/NatSci/SESES/GradForms/>

The dissertation prospectus should be finalized and submitted as the written component of the comprehensive exam by the end of the fourth semester for full-time students, or later as determined by the student’s approved Program of Study. All dissertation committee members must evaluate the student’s original prospectus and vote on whether to **pass**, **fail**, or **revise**. If any committee member judges the prospectus as insufficient, then the committee must meet to discuss the course of action. Then expectations need to be explained during an in-person meeting with the student and the full committee, followed by written documentation affirming the expectation for revision. The Adviser is required to record this information on the ESES Written Comprehensive Exam Form which will be signed by all members of the dissertation committee and submitted to the Graduate College.

If the decision is to **revise**, the student will have only one opportunity to produce a prospectus that meets the expectations of the dissertation committee. The decision to revise implies that the exam contains significant shortcomings. These problems must be specified in writing to the student with a clear statement of the expectations for the revisions necessary to pass, along with

a firm deadline for receipt of the revised prospectus. “Revise” should not be used for minor flaws. It suggests that the student is close to failing and that they will have only one opportunity to produce a written product that meet the expectations for the doctoral program. If the student did not make the expected improvements within the timeline allotted, then the student may be recommended for discontinuation from the degree program.

Students who **fail** do not advance to candidacy and may exit the program. They have not demonstrated the motivation and ability to comprehend the limits of knowledge within a field, and to design and conduct original and rigorous investigations to advance knowledge beyond the leading edge. If any committee member judges the student as not meeting this expectation, or believes that the written examination indicates that the student is unable to write a dissertation, then the committee must meet to discuss whether the student should continue with the comprehensive exam, or whether they should be recommended for dismissal from the program.

Oral component of the Comprehensive Examination

The oral exam is taken after the student has passed the written exam. The committee evaluates the student’s understanding of their field and ability to synthesize and communicate ideas in a professional atmosphere. The goal of this exam is to assess the student’s ability to convey their analytical skills and knowledge, and determine whether they have achieved the level of competency necessary to complete their dissertation research as determined appropriate by the dissertation committee. The evaluation is given by all members of the student’s committee and lasts approximately 2 hours. The examination is held in private and is organized and directed by the student’s advisor. At a minimum, it includes:

1. An explanation of how the examination will be conducted by the advisor.
2. A short (< 30 minute) oral presentation by the student that summarizes research progress and plans, but the focus should be on examination of the student by the committee.
3. Questions from the dissertation committee will include material from the written exam (research prospectus) as well as questions about concepts and principles related to the student’s field of research, including the conceptual development of, and recent developments in related fields. When necessary, emphasis will be placed on areas in the written evaluation on which the student has shown weaknesses. Before the oral exam, individual committee members may give the student a bibliography of works from which they will be tested.

Each member of the dissertation committee is asked to keep notes on all questions, recording a satisfactory or unsatisfactory answer, and provide a general summary of the student’s performance. A pass or fail vote is recorded, and a three-fourth’s passing vote is required. The exam may be repeated only once. A second failure precludes admission to candidacy and the student may be recommended for dismissal from the program. The Adviser is required to record the results of the examination on the ESES Comprehensive Oral Exam Form which will be signed by all members of the dissertation committee and submitted to the Graduate College.

Download the Comprehensive Oral Exam Form at
<https://nau.edu/CEFNS/NatSci/SESES/GradForms/>

Admission to Candidacy

Candidacy means that the student becomes an official candidate for the PhD degree, implying that they have completed their required coursework and comprehensive examinations and are prepared to complete their dissertation.

Download the *Application for Candidacy Form* at: <https://nau.edu/graduate-college/forms/>

Complete the top portion of the form and forward to the SES Graduate Program Coordinator. The Graduate Coordinator will verify candidacy requirements have been met, obtain signatures, and submit to the Graduate College (student cc'd) on your behalf. This form confirms:

1. Completion of the written and oral comprehensive exams.
2. Completion of Research Methods or Statistics course.
3. Approved Program of Study that is updated to include any changes that have occurred since the form was initially prepared.
4. Dissertation Prospectus with the title page signed by all committee members.
5. Completion of all required course work with the exception of Graduate Seminars, Professional Development and EES 799 credits*.
6. Confirmation that the residency requirement has been met. Residency requirement is summarized in this Handbook (p19) and the [full policy](#) is available on the Grad College's website.

*If you are submitting an application for candidacy and do not have all coursework completed, please attach the following justification to your form.

Exception to coursework requirement for candidacy: SES allows for an exception to the coursework requirement for doctoral candidacy for graduate seminars (698), professional development, and dissertation (799) credits. Rationale: certain seminar topics are not regularly offered, and professional development opportunities are often appropriate later in students' degree progressions. Given the diversity of our interdisciplinary program and minimum enrollment requirements, ESES doctoral students need the flexibility to be able to enroll in seminars later in their program.

Dissertation

Although two types of dissertation format are acceptable for the Graduate College (<http://nau.edu/GradCol/Student-Resources/Theses-and-Dissertations/>), the journal-article format is required for the ESES degree, unless otherwise approved by the dissertation committee. This format is a series of papers either submitted, or drafted for submission, to peer-reviewed professional journals, with additional introductory and concluding chapters as described on the Graduate College website. The dissertation must be of sufficient quality for publication in international peer-reviewed journals. Professional publications demonstrate undeniable expertise in research and bring greater visibility to the author.

The dissertation must be reviewed by the advisor and revised by the student prior to distribution to the committee. The nearly final version of the dissertation must be submitted to the dissertation committee at least eight weeks prior to the anticipated defense date to allow for further revisions based upon committee members' recommendations. Committee members must provide feedback on the dissertation within two weeks after receiving it, if they expect the

suggested changes to be incorporated into the final draft of the dissertation. At least two weeks before the date of the dissertation defense examination, the dissertation, in its nearly final form, including all figures, tables, and references, must be distributed to all committee members, and the Graduate College.

Dissertation Defense

There are two components to the Dissertation Defense required of all PhD students: The Dissertation Seminar and the Oral Dissertation Defense Examination.

Dissertation Defense Seminar

The PhD degree requires that each student present a formal dissertation defense seminar, which is open to the public. The seminar will last about 40 minutes with 10-15 additional minutes for questions and discussion. This seminar is typically given immediately before the dissertation defense examination. The seminar must demonstrate that the student has mastered their field and contributed new knowledge to their area of specialization through their independent scholarly work.

Oral Dissertation Defense Examination

The goal of the Oral Dissertation Defense Exam is to discuss the adequacy of the dissertation and test the student's competence in research. The examination is given by all members of the student's dissertation committee, and typically lasts approximately 2 hours. *The examination is scheduled by the student through the Graduate College at least two weeks in advance.* At the beginning of the semester in which a student expects to defend their dissertation, they should schedule their dissertation seminar and dissertation defense examination with the Graduate College. The examination is generally scheduled to immediately follow the dissertation seminar. The date for the examination must be arranged by the student so that all members of the dissertation committee can attend. While it is desirable for all members of the committee to be present at the same location for a dissertation defense, teleconferencing of up to two members is permissible. If possible, the date should fall within the Fall or Spring semesters and the defense should not be held during the last two weeks of any term. All committee members must have a confirmed date, time and place, in writing from the student. The examination must be scheduled at least four weeks before the date of expected graduation in order to allow time for any changes to the dissertation recommended by the committee. The dissertation defense may not be held prior to 90 days after the student has been admitted to candidacy. No more than four years can elapse between the oral comprehensive evaluation and the dissertation defense examination. If the time between examinations is longer than four years, the oral comprehensive evaluation must be repeated.

Each member of the dissertation committee keeps notes on performance during the examination and records a general summary of the student's performance. A pass or fail vote is recorded by secret ballot by the committee before any discussion. To pass, a student must obtain at least three-fourths of the votes in favor. If the examination is failed, it may be retaken once. If it is failed again, the student may be recommended for dismissal from the program. If any committee member is absent, the examination must be rescheduled.

The Graduate Dean appoints an observer from the University Graduate Committee to attend the dissertation seminar and final oral defense. The observer reports to the Graduate Dean on the conduct of the examination. The observer may ask questions, but does not vote to pass or fail the student.

Download the *Dissertation Defense Policy and Procedures* for complete and current information at: <https://www5.nau.edu/policies/client/Details/27?whoIsLooking=All&pertainsTo=All>

Download the *Dissertation Defense Scheduling* form AND the *Oral Defense* forms at: <http://nau.edu/GradCol/Policies-and-Forms/Forms/>

In preparation for this examination, the student must consider the following points (consult the Dissertation Defense Scheduling Form from the Graduate College):

- A copy of the dissertation, in final form, must be distributed to all committee members, and to the Graduate College, at least two weeks before the date of the examination.
- The date for the examination must be arranged by the student so that all members of the committee can attend. Such a date must fall within the Fall or Spring semesters, excluding Final Examination Week, and faculty must have a confirmed date, time, and place, in writing, from the student. Notification of the scheduled examination must be given to the Graduate Dean by the faculty advisor at least two weeks in advance (See sign-off of the scheduling form.)
- The examination should be scheduled at least 4 weeks before the date of expected graduation in order to allow for any changes to the dissertation recommended by the committee.
- A list of courses taken for the M.S. and Ph.D. degrees should be provided to each committee member at least 7 working days before the examination.
- This examination will be devoted to questions relating to the Dissertation.
- Any faculty member may attend the dissertation defense examination. Graduate students may attend by invitation of the faculty advisor. Questions will be asked by members of the student's dissertation committee. At the discretion of the chair, questions may be received from visitors. Each member of the dissertation committee keeps notes on performance during the examination and records a general summary of the student's understanding of the research project and defense of the thesis. These notes will become part of the student's permanent School file.

A pass or fail vote is recorded by secret ballot before any discussion. To pass, a student must obtain at least three-fourths of the votes in favor of passing. If one committee member is absent because of an emergency, permission to continue with the examination must be obtained from the Dean of the Graduate College. If permission is granted to continue with one missing member, no dissenting votes may be registered if the student is to pass. If more than one committee member is absent, the examination must be rescheduled.

The Graduate College also appoints a University Graduate Committee representative to attend the final oral defense. The observer reports to the Dean of the Graduate College on the conduct of the examination. This report is also shared with the school director. If invited by the chair of the dissertation committee, the observer may ask questions, but the observer does not vote to pass or fail the student.

If the Dissertation Defense Examination is failed, it may be retaken only once.

EVALUATION OF PROGRESS

Degree Progression and Grade Requirements

The student's dissertation committee will meet to evaluate the student once each year. In addition, the Graduate College monitors student transcripts on a continuing basis and evaluates all students for Satisfactory Academic Progress. A student is expected to maintain a grade point average of 3.0 or higher throughout the course work for the Ph.D. degree, and to make significant progress in research each semester.

Students with, or applying for, financial support must maintain a grade point average of 3.0 or higher. Students are expected to complete courses listed on their approved program plan before taking other courses. A Financial Request Form will be filed with the Graduate Program Coordinator once per year by the advisor after the annual meeting with the dissertation committee. This form must be on file before evaluation concerning continued funding can take place (December 31). A copy will be placed in the student's permanent file.

No more than 6 credit hours of course work with a grade of C may be used toward the Ph.D. course requirements. Accumulation of more than 6 credit hours of graduate course work with a "C" grade, or earning any grade below a "C" in a graduate class, will result in Academic Probation for the student. Please see the Graduate College policy on Academic Probation and Dismissal: <https://policy.nau.edu/policy/policy.aspx?num=100319>

A student placed on academic probation may not be permitted to register for classes (an enrollment hold will be placed on their account) and may lose their financial aid eligibility. Students on academic probation must meet with their advisor to discuss the steps necessary to remediate problems that led to probation. This meeting should result in a written action plan describing the remediation steps to be taken. The plan must be signed by the student, the advisor, and the SES Director, who will then send it to the Graduate College for final approval. If the plan is approved by the Graduate College Associate Dean, the registration hold will be lifted and the financial aid hold may be modified. Successful completion of the plan in subsequent semesters will remove probation and return student to Good Academic Standing.

If a student does not meet the terms of their approved action plan in the following semesters, or fails a second time to maintain Good Academic Standing, one or both of the following actions will be taken:

- The ESES PhD advisory council may initiate academic dismissal by notifying the student and the Graduate College in writing of the program's intent to recommend dismissal;
- The student will be blocked from future enrollment.

A terminated student may appeal this decision based on their individual circumstances. It is the student's responsibility to articulate their case and explain why an exception is warranted. See NAU Policy [100319](https://policy.nau.edu/policy/policy.aspx?num=100319) for information on this process.

Time Limits

If you enter the PhD program after earning an MS degree, you must complete all requirements for the Ph.D. degree within an 8-year period, including time as a non-degree seeking graduate student. If you take courses from other institutions, you may transfer them to your program at NAU, upon approval from the advisor, SES Director, and the Graduate College. Faculty within a graduate program/department make the decision as to whether transfer courses will be applied to a program plan, and assume the responsibility to ensure transfer courses demonstrate the core learning competencies, expectations, and criteria for the requested transfer. If you enter the PhD Program directly from your Bachelor's degree, without first earning an MS degree, you must complete all requirements for the PhD degree within a 10-year period, including time as a non-degree seeking graduate student. Please see: <https://policy.nau.edu/policy/policy.aspx?num=100805> for more details.

One extension of the time to complete degree requirements (of up to one year) may be granted if there are compelling extenuating circumstances. Extensions may be granted for a variety of reasons which may include, but are not limited to, job relocation, military duty, pregnancy, illness, a serious accident, divorce, or other personal tragedies within the immediate household.

If you wish to petition for an extension of the time limit, you must request an extension on the appropriate form (available here: <https://nau.edu/graduate-college/forms/>). Your advisor and the SES Director must support your petition by signing the form, and it must be approved by the Graduate College.

Credit Load

To be considered a full-time graduate student, you must carry 9 graduate credits per semester (Fall & Spring). Students on graduate assistantships or fellowships (20 hours per week employment) are required to carry 9 (and no more than 12) credit hours to qualify for their GA employment. A student must be enrolled in at least one (1) credit of EES 799 (Dissertation) during the semester in which she or he defends, and must adhere to the policy governing continuous enrollment for graduate students: <https://policy.nau.edu/policy/policy.aspx?num=100326>.

Residency Requirement

NAU's residency requirement can be met through two pathways.

- Option 1: Full-Time Enrollment
Two consecutive semesters of full-time enrollment following admission to the doctoral program. The Graduate College defines full-time enrollment as carrying at least 9 hours during the fall or spring semesters or 5 hours during a summer session; or
- Option 2: ESES Program-specific Alternative Residency Plan
Completion of 18 face-to-face credit hours before advancement to candidacy, including the following:

- EES 605 during the first fall semester of their doctoral program; and
- EES 606 during the first spring semester of their doctoral program; and
- ENV 555 within the first two years of their doctoral program.

Please refer to the policy on residency for Ph.D. students:

<https://policy.nau.edu/policy/policy.aspx?num=100805>

Application for Graduation

At the start of each academic year, the Graduate College announces its deadlines for filing the Application for Graduation (<https://nau.edu/graduate-college/graduation/>). You must apply for graduation at least one semester before graduation is expected. The online graduation instructions are available at the Graduate College website:

http://jan.ucc.nau.edu/gradcol/Graduation/Step_by_Step_Graduation.pdf.

Checklist for PhD Students

The following checklist will aid your timely completion of program requirements:

<http://www2.nau.edu/gradcol/ThesesDiss/ChecklistDoctoralStudents.pdf>.

Continuous Enrollment Leave of Absence Policy

Please see Policy here: (<https://policy.nau.edu/policy/policy.aspx?num=100326>)

Graduate students in degree programs that require continuous registration may be granted a Leave of Absence for up to one academic year by the Graduate College, upon the recommendation of the student's advisor and department graduate coordinator. A leave will be granted under conditions requiring the suspension of activities associated with the thesis/dissertation or coursework. A leave will be granted for extraordinary reasons only, such as health or medical problems or military duty. Normally, time-to-degree requirements are not suspended during a Leave of Absence. The right to use University facilities and/or faculty time is suspended during a Leave of Absence. No form of graduate assistant support will be provided during the Leave of Absence. If an extension of time to complete the degree is needed, it should be requested in a petition for extension of time through the Graduate College.

International students (attending NAU on an F-1 or J-1 visa) are generally not eligible for a leave of absence due to INS regulations. Contact the International Student Adviser for any exceptional circumstances.

Leave of Absence requests must be filed no later than the last day for adding classes during the semester in which the leave is to start, and cannot be granted retroactively. Students on an approved Leave of Absence may not be required to apply for readmission.

Students who are absent beyond the end of an approved Leave of Absence will be required to apply for readmission as a graduate student and to the appropriate academic department. A

Leave of Absence may be extended beyond one year only under exceptional circumstances. Such an extension must be requested on the Leave of Absence form.

A Leave of Absence form (<https://nau.edu/graduate-college/forms/>) is available on the Graduate College site and requests:

- Student name, student ID number, local address and phone
- Statement of request for leave and justification by student.
- Semester leave begins and semester of student's return to program.
- Approval by advisor, department graduate coordinator and Graduate College.

FINANCIAL AID

Although it is the goal of the ESES PhD Program to provide financial support for all students admitted into the graduate program, we recognize that certain students may have their own means of support, and that many worthwhile research projects do not have large resource requirements. When the above conditions can be demonstrated (as determined by the faculty advisor and approved by the ESES PhD advisory council), the student will be considered for admission into our graduate program on an equal basis with those who would receive institutional support. Admission to the ESES PhD program without support does not imply that financial support will necessarily be provided in the future. Such students would be considered on an equal basis along with all new applicants. Evaluation for continued financial support is a part of the yearly progress meetings and is based on previously established criteria outlined in pertinent sections above and on the **Financial Request Form**. To be considered for continued support, the advisor must complete the Financial Request Form by December 31st.

Teaching Assistantships

Teaching Assistantships may be available to graduate students in the ESES PhD Program. These TAs include an out-of-state Tuition Scholarship, 100% payment of resident tuition (but not associated fees), health insurance, and a stipend. A minimum semester and cumulative grade point average of 3.0, Good Academic Standing, plus satisfactory progress toward your degree program are required for continued support.

Teaching assistants are expected to devote 20 hours per week to their appointment, including teaching, office hours, preparations, testing and grading, and set-up and take-down of laboratories. They must have an excellent command of spoken English and of the relevant subject matter. Teaching assistants must carry a course load of 9-12 hours per semester to qualify as full-time students. All teaching assistants must attend the University Graduate Assistant Orientation each Fall prior to the start of classes.

Guidelines are provided to Teaching Assistants every fall concerning the policies and expectations as determined by the Department and the Graduate College. See the "Graduate Assistantship, Traineeship, and Fellowship Handbook", available at: https://nau.edu/graduate-college/wp-content/uploads/sites/14/GA_Handbook-1.pdf

Teaching Assistants play a substantial role in the training of undergraduates, and this responsibility is not to be viewed lightly by the Teaching Assistant. For this reason:

- Teaching Assistants are expected to be in residence and available for assignment throughout the dates specified in their contract, beginning with the first and continuing through the last day of their contract. The contract period normally begins with the full week prior to the start of Fall classes, and includes several mandatory orientation and training activities.
- Teaching Assistants must submit a Request for Approved Leave form if they will miss any time on contract, and may be asked to complete additional tasks to offset an absence(s). Failure to do this could result in the loss of the Teaching Assistant position. The Request for Approved Leave form is not required for absences due to unexpected circumstances or illness; however, the supervisor should be notified and arrangements for a substitute must be made.
- GTAs must read, initial, and submit the SES Graduate Teaching Assistant Expectations form by the beginning of the contract period.
- The Graduate College provides a mandatory orientation each fall for the purpose of familiarizing new Teaching Assistants with the goals of the University and the Assistant's role in achieving these goals.
- Course coordinators will hold regular meetings with their Assistants. These meetings deal with organizational details, various aspects of good teaching techniques and course content, including the preparation and grading of assignments and examinations. Attendance at these meetings is mandatory.
- Course coordinators will evaluate all Teaching Assistants based on the expectations outlined in writing and signed by TAs and supervisors. A standardized evaluation form, SES Graduate Teaching Assistant Evaluation, is used to report the results of these evaluations. Each semester an evaluation will be placed on file, and a copy given to the Teaching Assistant.
- All forms referred to in this section are available at <https://nau.edu/CEFNS/NatSci/SESES/GradForms/>

Expectations and Responsibilities of Teaching Assistants: Teachers in general have long adhered to a sound and honorable set of ethical standards and these traditional standards continue to apply in today's world. In an effort to circumvent any misconceptions or misunderstandings about what is expected of us, it is appropriate to state formally these basic principles that have been informally incorporated in the academic way of life for so long.

As professionals, we have a special obligation to encourage the free pursuit of learning in students, to preserve intellectual freedom, to practice intellectual honesty, to respect the rights, the dignity and cultural backgrounds of others, to acknowledge the right of all to express differing opinions in a responsible manner, to promote conditions that foster the free exchange of

ideas, and to maintain the orderly processes that make freedom of inquiry and instruction possible.

As teachers, we represent the University, the College and the profession. As such we must hold before students, as best we can, the scholarly standards of our discipline. We must make every reasonable effort to foster honest academic conduct and to assure that our evaluation of students reflects the students' true merit. We must recognize that students are individuals and are entitled to an atmosphere conducive to learning and to fair treatment in all respects of the teacher-student relationship. It is important to present a professional image in the classroom and in other interactions with students and colleagues. This includes proper attire, personal cleanliness, and basic common courtesies. In all contact with students we should use socially acceptable behavior and language. Under no circumstance should teachers participate in activities that might be construed as a conflict of interest such as dating or engaging in amorous relationships with a student enrolled in their lecture or laboratory course, or who is under their supervision. By adhering to the above standards of professional conduct we will be in a sound position to carry out our responsibilities for the health and well-being of the College.

Research Assistantships

A variable number of research assistantships are available from research funds granted to the university and under the direction of individual faculty members. Recommendations for these appointments are made by the faculty members who administer these funds. Inquiries about availability should be made to the faculty doing research in the area in which the student is interested. These RAs include an out-of-state Tuition Scholarship and an in-state tuition waiver, plus health insurance. These appointments have a commitment of 20 hours per week during the academic year. The distribution of effort within these 20 hours is determined by the faculty member awarded the grant. A course load of 9-12 credit hours per semester is required for full-time status. A minimum semester and cumulative grade point average of 3.0, plus satisfactory progress in your degree program are required for continued support.

Additionally, all Research Assistants must read, initial, and submit the SES Graduate Research Assistant Expectations form by the beginning of the RA contract period. RA supervisors will evaluate all Research Assistants based on the expectations outlined in writing and signed by RAs and supervisors. A standardized evaluation form, SES Graduate Research Assistant Evaluation, is used to report the results of these evaluations. Each semester an evaluation will be placed on file, and a copy given to the Research Assistant. All forms referred to in this section are available at <https://nau.edu/CEFNS/NatSci/SESES/GradForms/>

Research Assistants must submit a Request for Approved Leave form if they will miss any time on contract, and may be asked to complete additional tasks to offset an absence(s). Failure to do this could result in the loss of the Research Assistant position. The Request for Approved Leave form is not required for absences due to unexpected circumstances or illness; however, the supervisor should be notified and arrangements for a substitute must be made.

Evaluation of TAs and RAs

Teaching Assistants are evaluated each semester by course coordinators or faculty involved in the course. A standardized form for evaluation, SES Graduate Teaching Assistant Evaluation Form, is provided in the previous section. These completed forms are submitted to the student, the Graduate Program Coordinator, and the student's advisor, and are placed on file.

Research Assistants are evaluated by their research supervisor, typically their faculty advisor. A summary of the student's progress and the advisor's assessment of such progress is documented on the SES Research Assistant Evaluation Form, which is available in the previous section. These completed forms are submitted to the student, the Graduate Program Coordinator, and the student's advisor, and are placed on file.

Fellowships

The availability of Fellowships (e.g. ARCS awards, PEO awards, SFAz fellowships, etc.) varies from year to year. As the department is notified of these, they will be announced via e-mail. The SES Director, the Office of the Vice President for Research, and the Graduate Dean are also starting points for general information on Fellowships. Please also see: the "Graduate Assistantship, Traineeship, and Fellowship Handbook," available at: https://nau.edu/graduate-college/wp-content/uploads/sites/14/GA_Handbook-1.pdf

Tuition Waivers

Several in-state and out-of-state Tuition Scholarships are provided to the department each year by the Graduate College. These waivers are awarded to students by the Department Chair in consultation with the Graduate Program Coordinator. Decisions are based upon the relative financial need and academic performance of the students. Students who wish to apply for this type of support should inform their advisor who can indicate this on the annual Financial Request Form.

Duration of Support

Regardless of where the student is in her/his program, only students who perform their duties well and make good progress in their program will be considered for continued support after their first year in a program. Relevant policies of the Graduate College are provided in the "Graduate Assistant Handbook" (http://www2.nau.edu/gradcol/GA/GA_Handbook.pdf).

STUDENT'S ROLE IN THE COLLEGE

Graduate students acquire training for their professional career through interactions with faculty in formal courses, seminars (e.g. 698), completion of dissertation research, publishing in the best possible scientific journals, service on faculty committees, attendance at Departmental/School seminars, attendance and presentation of papers at scientific meetings, and interactions with visiting scientists. Evaluation concerning a student's leadership qualities and professional capabilities will often rely on the student's participation in these diverse activities. Such qualities may be reflected in letters of recommendation composed for students.

Graduate students carry significant responsibilities in teaching, research, service, and mentoring undergraduates and are representatives of NAU at other institutions, and at professional meetings. Therefore, graduate students are expected to exhibit high professional standards and in general to conduct themselves in a professional manner. Implicit in admission to the PhD Program is the expectation that graduate students will develop and demonstrate a strong sense of professionalism and academic integrity. The faculty-graduate student relationship is unique in the academic environment and it must not be compromised by unprofessional conduct.

The competition for jobs is extreme and is based largely on the quality of independent research and the dedication perceived by those professors most closely associated with a graduate student. A graduate student's research sponsor also has responsibilities to the University and often to a funding agency. University time and grant funds are expected to lead to the steady accumulation of relevant and reproducible data. Graduate student research is often, therefore, both an essential part of the student's education as well as part of the research sponsor's and the University's obligation to the larger community.

GRIEVANCE PROCEDURES

Students with significant complaints about any aspect of their PhD training should address such complaints directly to the person causing the grievance, in order to reach a settlement. If such an approach fails to achieve the desired results, the student's faculty advisor should be consulted and should attempt to broker an agreeable settlement. If the grievance is not resolved at this point the student should involve the Chair of the PhD advisory council. When none of the above attempts are successful, an *ad hoc* Grievance Committee will be appointed by the Chair of the PhD advisory council. If the grievance is not against the student's advisor, the advisor will chair the committee. Two additional members will be selected by the student, and two members will be selected by the Chair of the PhD advisory council. The Chair of the PhD advisory council will replace the student's advisor if the advisor is the apparent cause of the grievance. After deliberating on the grievance, the committee will notify the student orally and in writing of its decision to either accept the grievance, and to correct the matter, or to find the grievance unfounded.

Should the student remain unsatisfied with a decision of the grievance committee, following appeals are to be directed to the Associate Dean of the Graduate College. Please see the following policy for more details: <https://policy.nau.edu/policy/policy.aspx?num=100103>

Grade appeals are handled by policies and procedures found here: <https://policy.nau.edu/policy/policy.aspx?num=100105>

POLICY AND FUNDING CHANGES

Changes relating to student support or policies beyond the control of the College and University can occur. Under these circumstances the College cannot be held legally responsible for any difficulties a student incurs.

Northern Arizona University does not discriminate on the basis of age, sex, race, religion, color, national origin, disability or veteran status in admissions, employment, and educational programs or activities which it operates as required by Title IX of the Education Amendments of 1972, Title VI and Title VII of the Civil Rights Act of 1964 as amended; Section 504 of the Rehabilitation Act of 1973 as amended; the Civil Rights Act of 1991; the Americans with Disabilities Act of 1990; and the Age Discrimination in Employment Act of 1967. NAU's policy on nondiscrimination is further augmented by the voluntary affirmative action policies of Executive Order 11246, Section 503 of the Rehabilitation Act of 1973, and the Vietnam Era Veteran's Readjustment Assistance Act of 1973 as amended. You may inquire about the application of these regulations or the NAU Safe Working and Learning Environment Policy by visiting the Office of Equity and Access website: <https://nau.edu/equity-and-access>.

USEFUL CONTACTS

School of Earth & Sustainability

Northern Arizona University

Flagstaff, AZ 86011-4099

- Jim Sample, Director SES (928) 523-0881 James.Sample@nau.edu
- Sarah Colby, Business Manager, Sr. SES (928) 523-7184 Sarah.Colby@nau.edu
- Amy Wolkowinsky, Grad Program Coordinator, Sr. (928) 523-0932 Amy.Wolkowinsky@nau.edu

ESES PhD Advisory Council

- Donna Shillington, PhD Advisory Council Chair, Associate Professor SES, Donna.Shillington@nau.edu
- Tom Acker, Professor Mechanical Engineering, Tom.Acker@nau.edu
- John Bradford, Research Ecologist, USGS, jbradford@usgs.gov
- Justin Hagerty, Research Geologist, USGS, jhagerty@usgs.gov
- Jim Sample, Director SES (928) 523-0881 James.Sample@nau.edu
- Christine Regalla, Assistant Professor SES, Christine.Regalla@nau.edu
- Laura Wasylenki, Associate Professor SES, Laura.Wasylenki@nau.edu

Graduate College

Northern Arizona University

Room 107, Ashurst Bldg.

Flagstaff AZ 86011-4125

<http://www.nau.edu/GradCol/Welcome/>

- General Information (928) 523-4348 graduate@nau.edu
- Dr. Maribeth Watwood, Dean (928) 523-4348 Maribeth.Watwood@nau.edu
- Dr. Karina Collentine, Associate Dean (928) 523-6728 Karina.Collentine@nau.edu

- Graduate Assistantships, Tuition Waivers (928) 523-4349 gatw@nau.edu
- Residency and International Student Resources (928) 523-5316
gradinternational@nau.edu; gradresidency@nau.edu
- Thesis finishing and defenses (928) 523-8254 etd@nau.edu