

M.S. Student Handbook

Department of Earth and Environmental Sciences

**WRIGHT STATE UNIVERSITY
DAYTON, OHIO**

2015-2016

This handbook is designed to provide useful information for prospective, incoming, and current students in the Master of Science (M.S.) Degree Program in the Department of Earth and Environmental Sciences (EES) at Wright State University. Additional information about the M.S. Degree Program, including application procedures, availability of financial support, and program requirements is available on the EES Department's [web site](#). Please note that the information presented in this booklet is for department-specific topics and is believed to be accurate but subject to revision. It is essential that students in the EES – M.S. Degree Program become aware of all applicable regulations, requirements, and policies stated in the Wright State University Graduate School's [Graduate Policies and Procedures Manual](#), which supersedes the information included in this handbook.

Portions of this document were modified from the [Graduate Program Handbook](#) of the Department Of Psychology, Wright State University

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Introduction

Wright State University's Department of Earth and Environmental Sciences (EES) was established on July 1, 2006 as a result of the merger of the former Department of Geological Sciences with the Institute for Environmental Quality. This reorganization reflects a similar trend in other academic institutions and has provided for more practical cross-disciplinary training, research collaborations, and a better opportunity for students to obtain greater breadth in their curricula.

The EES Department is mainly housed in a contiguous space on the second floors of Brehm Laboratory and Oelman Hall. Recent, multi-million dollar renovations of these buildings included the installation of modern classrooms and laboratories for instruction in EES, customization of research facilities for EES faculty and their students, and improvement of the meeting and student lounge areas. The department also maintains a Field Equipment Building that houses departmental vehicles, field equipment, sediment/rock cores, and teaching and research samples. This building accommodates research activities.

The EES Department's research facilities include state-of-the-art laboratories focused on Modeling Subsurface Fluid Flow, Trace Metal Geochemistry, Aquatic Microbial Biogeochemistry, Environmental Geochemistry, and Applied Geophysics. Additional analytical equipment is housed in the Environmental Analysis Facility maintained within the College of Science and Mathematics. These facilities provide students with training and experience in field data acquisition, modern analytical techniques, sophisticated data processing, and computer modeling. The department also stresses the development of written and oral communications skills and offers a variety of graduate courses to ensure an interdisciplinary training in earth and environmental science subjects, including hands-on field experiences during the summer months.

The EES Department offers a well-rounded education to its students in both the basic sciences and their practical application. An M.S. degree from WSU will provide an excellent education and solid preparation whether one decides to begin a professional career or pursue a Ph.D. EES graduates have the ability to address complex, real-world challenges because they acquire a strong foundation in the basic sciences and an advanced training in interdisciplinary and emerging fields. The employment opportunities for EES graduates continue to be strong, and EES alumni have a solid record of professional growth. Our M.S. graduates go on to successful careers in the private sector, government, and academia.

The EES Department encourages interested students to visit Wright State University, tour the EES Department, and visit with departmental faculty, staff, and current students. If you would like to make arrangements to visit, please contact Dr. Chad Hammerschmidt (Director of EES Graduate Programs; chad.hammerschmidt@wright.edu). Also, please note that the WSU [website](#) has information for campus visitors, including [directions to the campus](#), [visitor parking information](#), and [maps of the campus](#) (including those of the [tunnel system](#) that connects almost all of the buildings on the WSU main campus).

EES faculty and instructional staff are engaged in research in a variety of subjects in the earth and environmental sciences, including hydrogeology, biogeochemistry, applied geophysics, geospatial analysis and remote sensing, paleoecology and sedimentary environments, and complexity in earth processes:

Abinash Agrawal – Wetland Biogeochemistry; Site Remediation

Christopher Barton – Complex Dynamics of Earth Processes

Hunt Brown – Environmental Law; Sustainable Development

Charles Ciampaglio – Paleoecology; Vertebrate Paleontology

David Dominic – Sedimentary Environments; Hydrogeology

Chad Hammerschmidt – Trace Metal and Mercury Biogeochemistry; Chemical Oceanography

Stacey Hundley – Earth Science Education; Teaching Methods

Allen Hunt – Percolation Theory; Nonlinear Systems

Ernest Hauser – Applied Geophysics: Energy and Environmental

Silvia Newell – Nitrogen Biogeochemistry

Robert Ritzi – Ground Water Flow and Transport

David Schmidt – Invertebrate Paleontology; Carbonate Sedimentology

William Slattery – Earth Science Education; Sequence Stratigraphy

Rebecca Teed – Earth Science Education; Paleoecology

Doyle Watts – Applied Geophysics; Remote Sensing

Information for Prospective Students

Master of Science Program – The M.S. degree program prepares students for careers as professional geoscientists in industry, government, and academia, including further pursuit of a Ph.D. degree. The M.S. program includes coursework (24 semester credits minimum) and independent research leading to a thesis (6 semester credits minimum). A completed thesis, evaluated by a faculty advisory committee, is required. A [non-thesis option](#) for obtaining the Master of Science degree in EES is available for individuals seeking to gain expertise in another field, who already have either a M.S. or Ph.D. degree in either science or engineering from an accredited university, and who have completed either a research thesis or dissertation in their previous graduate program.

The EES Department also offers the [Master of Science in Teaching \(Earth Science\)](#) Program. The Master of Science in Teaching (Earth Science) Program prepares a student for teaching Earth Science at K-12 level. Students can usually complete the Master of Science in Teaching degree in two summers and the intervening academic year.

M.S. Program Admission Requirements – One year (2 semesters or 3 quarters) of undergraduate coursework is required in at least 3 of the following subjects: Biology, Chemistry, Earth/Environmental Science, Math/Statistics, Computer Science, or Physics. Students lacking the minimum undergraduate coursework may be accepted into the M.S. program with "deficiencies," but such students must complete the deficiency coursework prior to graduation from the M.S. program. Upon admission, the EES Department's Graduate Studies Committee will review the undergraduate transcripts of students having "deficiencies" and recommend a list of courses to be completed. A student may submit a [petition](#) to the department for exception(s) to the above requirements.

Applying for Admission – Detailed information about applying for admission to the MS Program is available on the EES Department's [web site](#). The required application materials include:

- Online application
- Letters of reference
- Undergraduate transcripts
- GRE scores

Deadline for Applications – Deadline for first review of complete applications (including transcripts, GRE scores, and letters of reference) is January 31. Applications received after January 31 will be reviewed but may not receive the highest priority for funding and acceptance. Note: Students who do not complete their applications by January 31 should still complete the application process.

Financial Support – The EES Department currently has 16 Graduate Teaching Assistantships (GTA), and several Graduate Tuition Scholarships (GTS). In addition, one or more Graduate Research Assistantships (GRA) and fellowships may be available, but this varies from year to year.

Graduate Teaching Assistantships – The GTA award carries a stipend for the academic year and a full tuition fee waiver for the entire year, usually including summer. A Graduate Teaching Assistant is required to work 20 hours per week for 15 weeks during the fall and spring semesters of the first and second years. Additional information about the GTA award is available in the “Graduate Teaching Assistantships” section of this booklet.

Graduate Tuition Scholarships – The GTS awards are restricted to full-time graduate students and provide a full or partial tuition fee waiver; however, the award does not carry any stipend or duties for the awardees. The GTS award may begin in the Summer, Fall, or Spring terms, and the award is often intended as a one-year commitment, with continuation contingent upon satisfactory performance. This award is typically offered to students who are employed outside the university, such as teachers enrolled in the EES – MST program, and other professionals.

Financial Aid – Financial Aid for graduate study may also be available in the form of loans and/or grants from various WSU programs as indicated below. Such awards and assistance are not available through the Department of Earth & Environmental Sciences:

General information and Graduate Fellowship Applications

Contact: [Graduate School](#)

Location: E-344 Student Union

Telephone: (937)-775-2976

Student Employment and College Work Study Information

Contact: [Office of Student Employment](#)

Location: E-334 Student Union

Telephone: (937)-775-2326

Student Loan Information

Contact: [Office of Financial Aid](#)

Location: 130 Student Union

Telephone: (937)-775-4000

Recommended Timeline for Prospective Students – Most students entering the M.S. Degree Program begin during Fall Semester, although the EES Department may consider applications for admission on a case-by-case basis throughout the academic year. The following timeline is recommended for students entering the M.S. Degree Program during Fall Semester:

Fall Semester of the Year Prior to Graduate Study

- Consider participating in research at your current institution if you have not yet done so. Because research is important at the graduate level, previous experience with research may be a determining factor when a student is being considered for entry into the EES M.S. Degree Program.
- Take the [General GRE](#), which is a computer-based standardized test of academic skills in three sections: (1) Writing; (2) Verbal (analogies, completions, reading comprehension); and (3) Quantitative (problem solving, quantitative comparison). It’s helpful to practice ahead of time for the GRE and become familiar with the test’s organization and timing.

Please arrange to have your official GRE scores sent to Wright State University directly; per the GRE request form, the Institution Code for Wright State University is 1179. The GRE should be taken by the end of November to ensure test results are reported to the WSU Graduate School well ahead of the application deadline.

- Ask at least three individuals who are familiar with your academic capabilities to complete the EES Department's [Graduate Evaluation Form](#). Each referee should complete the entire form and send it directly to the WSU Graduate School at the address given below. Please follow up with your referees after you made your initial request to make sure that the letters reach the graduate school at least two weeks ahead of the application deadline.

Graduate School
E344 Student Union
Wright State University
3640 Colonel Glenn Hwy.
Dayton, OH 45435-0001 USA

Telephone: (937) 775-2976; (800) 452-4723
Fax: (937) 775-2453

December and January Prior to Spring Semester

- Make arrangements to visit Wright State University and the EES Department. Contact either your prospective thesis advisor or the Director of EES Graduate Programs, Dr. Chad Hammerschmidt (chad.hammerschmidt@wright.edu)
- Request transcripts from your undergraduate institution(s)
- Complete the WSU Graduate School [online application](#)

Summer Before Beginning Graduate Coursework

- Consider requesting an Early Start Fellowship, which offers the opportunity to become involved in a research project and other assignments for the summer term prior to the beginning of the new academic year. Early Start Fellowships are available only to incoming students who will be a GTA during the following academic year.

General Expectations

A. Purpose

These expectations for graduate students are meant to provide a guide and goals for completing the program successfully. As a graduate student you have many responsibilities. We have outlined expectations for your performance in four areas: courses, research, thesis, and writing/speaking. These areas do not include all of your responsibilities (e.g., teaching), but will serve as a starting point. Remember, high performance in one area should not be achieved at the expense of performance in another area. However, the content or focus within each area may vary with career goals. You should think about what you want to do after earning your M.S. degree, discuss your goals with the faculty, and determine how to best focus your courses, research, and thesis so you can achieve your goals. Regardless of the focus you choose, you should try to meet the expectations outlined below.

It is important to note that, as a graduate student, you are primarily responsible for the course of your degree program. You will choose a thesis advisor and a thesis committee, and then work closely with these faculty members to select courses, to design and carry out a research project, and to document your research in a thesis of acceptable form. In addition to guiding you through these stages, these faculty members will also hold you to the requirements of our degree program and to the academic, research, and professional standards expected of everyone in this department. With this help, you should be able to make steady progress through your degree program. If you feel that you are not progressing steadily, you should consult with the Director of EES Graduate Programs.

B. Courses

Students in the first year of the program have a fairly heavy course load. Typically, a first-year student will be registered for three courses per semester. During this time students are also expected to be increasingly involved in research with their advisor. This initial research effort can greatly facilitate the thesis phase of your program and will be discussed below under research. In addition, students are expected to perform their assistantship duties at a high level.

During your first year in the program, full-time students usually take six courses. All graduate students must register for EES 6280 Colloquium for their first Fall Semester and for Spring Semester in their first and second years. The remaining courses should be chosen with your advisor based upon your background, research direction, and career goals. Most of your M.S. courses will be completed in the first year. Part-time students will take a reduced load of courses. The Program of Study form, which you will complete during your first or second semester, becomes part of your official file in the Graduate School and is used to verify that you have completed the degree requirements. When completing your Program of Study, keep in mind that some courses within the department are offered only every other year. You must revise your Program of Study form when you deviate from the original submitted to the Graduate School.

Unlike most undergraduates, graduate students are much more a part of most classes, taking a very active role. This becomes particularly true beyond the first year. It is not uncommon for significant portions of class discussions to be initiated or led by the student. It is also not uncommon for the course material to be current research literature rather than texts. Two important facets of this emerge. First, your investment in the material will be quite evident on a class-by-class basis, not just for tests. Second, your development of skills in reading and assimilating both text-based foundational material and current research will be instrumental later as you perform research and prepare for your thesis defense.

During the second year in the program, the course load carried by the student is lighter than in the first year. Students will often be registered for either independent research or thesis credits and one or two regular courses. The shift in course load is made for two reasons. During their first year, students are exposed to a great deal of material to prepare them to complete thesis research in their second year. The drop in course load also allows the second year students to devote most of their time to working on their theses. During the second year, students are still expected to remain heavily involved in research and to excel in assistantship activities. All students are expected to do well in their courses and maintain better than a 3.0 cumulative GPA.

C. Research

The Department of Earth & Environmental Sciences has a strong commitment to research. All graduate students have actively participated in research since our program started. We believe research skills are important to the student who plans to take a job in an applied setting as well as to the student who plans to pursue either an academic or research career.

As a research-based program, we are committed to teaching you how to conduct high quality, ethically conducted, and publishable research. You will learn the research craft and a great deal about the relevant research in your eventual field by your association with your advisor and perhaps other, more senior students. First-year students are expected to become involved in research during their first semester. Normally, your responsibility grows as you gain more experience. At first, you may have to learn methods and procedures. Eventually, you should become involved in a project you find interesting and to which you become committed. This should be a joint project with you and your advisor, or perhaps a research team, to collaborate and share ideas. Although you are likely to be heavily involved in data collection and analysis, you should also be involved in contributing ideas. Many groups have regular laboratory meetings to review research activities and to discuss theory and methodology.

During the second year, you are expected to continue working on research, in addition to working on your thesis. In many cases, this will mean collaborating on papers for either publication or presentation at professional conferences. In other cases, it may mean either collecting additional data or analyzing data.

If you are funded by a research assistantship, fellowship, or external support, you should be committed primarily to research responsibilities with your faculty advisor. It is important that you have a clear understanding of your responsibilities for research projects supported by either grants or other external funds. For example, data used in your thesis may also contribute to the goals of an ongoing research project. You will hold the copyright to your thesis, but this does not imply control of the data upon which it is based. You should discuss questions about your research responsibilities with your advisor.

You have both teaching and research responsibilities if you have a teaching assistantship. You should still be involved with research if you are unsupported and work externally. The amount of time you spend working on research should be negotiated with your advisor (usually at least 10 hours per week). You should, however, recognize the importance of research to complete this program successfully and to your professional development.

D. Thesis

A thesis is required of all students in the M.S. program except those accepted into the non-thesis option. These requirements allow you to conduct a research project you are prepared to explain in detail and that makes a contribution to the field. You are expected to take initiative in advancing the project. An appropriate project should be focused on an original research problem. You will work closely with your advisor on your thesis. Your advisor will head a committee of faculty members who will guide and evaluate your thesis. "Original" means the goal of the thesis problem and design is to add new information to the relevant field. You may replicate and extend previous research, but you should not simply replicate previous research. Your advisor and your committee will help you identify an original problem and design.

Most students do not realize how long it takes to write a thesis proposal, to conduct the appropriate research, and to write the final document. To complete your thesis by the end of your second year, you should follow the timeline provided at the end of this handbook (see the GRADUATE STUDENT ACTIVITY CHECKLIST). Some students find it difficult to start the thesis and often end up feeling frustrated with themselves and the thesis when they get behind. It is easy to focus on courses and other activities with clearly defined, short-term goals at the expense of your thesis. Remember the faculty and other graduate students are here to support and to guide you through these processes. However, progress towards completion of the thesis is a student's responsibility.

For thesis work, a well-written proposal can serve as a strong basis of the introductory section and a foundation for the methods section. You should also consider the proposal as a research "contract" specifying the limits of what will be expected in your thesis. In this way, it should be seen as less as a requirement to be checked off and more as a guarantee that your research will not be open-ended.

E. Writing and Speaking

Competent writing and speaking skills are expected of all graduates in our program. These skills are expected by almost all professional positions. You should get into the habit of asking faculty and other students to review your papers (including papers for courses, abstracts for presentations, and drafts of your thesis proposal and thesis). You should revise your projects based on reviewers' comments. Pay attention to and understand the revisions and editorial comments provided by reviewers so that you learn to become a better writer. Writing should be grammatically correct, and it should flow logically. The style should be appropriate for the audience, and the content should be solid. Writing a good paper usually requires substantial library work and extensive re-writing. Keep in mind; the final product should be your own. Plagiarism is unethical and grounds for dismissal from the program. Please consult the Wright State University **Code of Student Conduct** for more information (<http://www.wright.edu/students/judicial/conduct.html>).

You should also become proficient at public speaking. In most professional positions you can expect to give briefings, make presentations to groups of colleagues, and to speak at professional meetings. If you have heard a good, effective presentation, the presenter was probably an excellent speaker and did not just read notes. Just as with all professional activities, proficient public speaking results from practice. During your graduate school experience, you will be given opportunities to develop your public speaking abilities. All graduate students will present a summary of their research project at a meeting of EES 6280 Colloquium during their second semester.

During your tenure in our program, you should have multiple experiences in which you will write papers and speak to groups in courses, laboratory groups, and/or weekly meetings. Take advantage of these opportunities to prepare yourself for your eventual professional positions. If your writing and/or speaking skills are weak, you should seek extra help by, for example, taking either a writing or speaking course to develop these skills.

Getting Started

Student Accounts – After you're been admitted to Wright State University, you'll be assigned a student number (User Identification Number; "UID") that will be provided, along with e-mail account information, in an admission packet sent by the WSU Graduate School. If, for some reason, you do not receive information about your student accounts after being admitted to WSU, please contact the [WSU Office of Computing and Telecommunications Services](#) (CaTS) via phone at (937) 775-4827 or in person in 025 Library Annex. CaTS has a helpful page to get students started using their accounts: <http://www.wright.edu/information-technology/getting-started/students>.

Housing – Wright State University's Office of Residence Services, in collaboration with the Office of Admissions, provides directions, tour details, special visit days, and other information about [student housing](#).

Parking Permits – New students may review parking options and manage accounts [online](#).

Departmental Orientation

Students admitted to the EES Department's M.S. Program are required to attend a one-day departmental orientation meeting just prior to the beginning of Fall Semester. Information about the day, time, and location of this meeting will be provided in a letter sent to students after admission to the program. The orientation will include:

Meeting with an interim advisory panel of faculty – This will be an opportunity to discuss your career goals and potential research areas.

Selecting Fall Semester courses – Most students will register for:

- 2-3 graduate courses.
- Colloquium (EES 6280), which is offered during Fall and Spring Semesters and is designed to broaden students' awareness of topics in the Earth and environmental sciences. The course meets one hour per week on Thursday afternoons and consists of research presentations by EES faculty (Fall Semester) and invited guests and EES students (Spring Semester). Attending Colloquium during Fall Semester is an ideal way for new students to acquaint themselves with EES faculty and their respective areas of research.
- Principles of Instruction (EES 7000; only for GTAs); see additional information in the "Graduate Teaching Assistantships" section of this booklet.
- Courses to make up any deficiencies identified during the admission process (see immediately below).
- Thesis research hours to total 12 hours of registration for the semester.

Reviewing deficiency statements – This is applicable only if a student has been admitted to the EES M.S. Degree Program having completed fewer than the required number of undergraduate preparatory courses. This statement will identify the courses required to make up deficiencies.

Other Orientation Information for GTAs and GRAs:

International Graduate Teaching Assistants (IGTAs) – First-time IGTAs are required to attend a three-day workshop held in late August prior to the Fall semester. An Oral Proficiency Test (OPT) is given to international students on the last day of the workshop.

Meeting with Graduate Teaching Assistant Coordinator (GTAs only) – This meeting will include information about work assignments, office assignments, obtaining keys, making photocopies, availability of office supplies, and a mandatory online GTA orientation through PILOT, instruction for which will be given after each GTA signs their contract.

Paychecks – All employees of Wright State University are required to have either their salary or stipends directly deposited into a bank account. Please be prepared to provide a deposit slip for the bank account that will be used for this deposit.

Employment Verification – All employees must complete the Employment Verification Form I-9 with Suzanne Semones prior to final processing. New students must provide proof of either citizenship or legal alien status. The I-9 form must be completed in person. The required proof for U.S. citizens is either a U.S. passport or picture identification (driver's license, military identification card, or state identification card) and either a birth certificate or original Social Security card. International students must provide a current passport, visa, the I-94, and the I-20, and [apply for a Social Security card](#) if they do not already have one. International students must also take an approved Authorization to Work form from [Center for International Education](#) to their processing appointments at the Graduate School. Once the I-9 form is complete, it will be forwarded to the Graduate School.

Contracts – GTA and GRA contracts are signed in the Graduate School office (344 Student Union). GTAs and GRAs may contact the Graduate School to schedule an appointment only after they are notified that their contract is ready to be signed and the student has registered for classes. After receiving notification from the Graduate School, students may contact the Graduate School by phone (937-775-2976) to schedule an appointment. Prior to meeting with the Graduate School, students should: (1) register for classes; (2) complete all forms in the packet provided by the Graduate School (including a deposit slip for the bank account to which either the GTA or GRA stipend will be deposited each month); and (3) complete the I-9 form. After the appointment, the Graduate School will arrange the tuition fee waiver.

Additional Information For New Students

Course Registration – Students may register for classes online via Wings Express or in person at Raider Connect (108 Student Union). To register online:

- Log into [Wings](#) with your user name and password
- Click on the “Wings Express” icon
- Log into Wings Express with your UID and password
- Select the “Student and Financial Aid” tab
- Select “Registration and Records,” “Add or Drop Classes,” and follow the directives for adding classes to your registration

Student Insurance and Health Services – Insurance for students is optional and students **not** wishing to obtain WSU student insurance must specifically indicate this when registering for classes. WSU’s Office of [Student Health Services](#) provides primary health care and helps students maintain a healthy lifestyle.

Wright1 Card – The Wright1 Card serves as a student ID card and also as a pre-paid debt card, library card, meal card (for on-campus residents), and an access card for recreation facilities, parking lots, and certain on-campus labs. The Wright1 Office is in 055 Student Union. Hours are 8:30 am – 5:00 pm Monday – Friday, and no appointment is necessary. Please obtain your Wright1 Card at the beginning of your first term at Wright State (you must already be registered) by taking your class schedule, UID # and government-issued photo ID (state ID, driver’s license, passport, or military ID) to the Wright1 Office. Graduate students are advised to do this before the undergraduates arrive on campus in the fall, if possible.

Graduate Student Mail – Graduate student mailboxes are located in 227 Oelman Hall, which is toward the south end of the second floor of Oelman Hall.

EES Student Organizations – The EES Department has a student club (Students in Earth and Environmental Sciences; “SEES”) and student chapters of [Sigma Gamma Epsilon](#) (SGE) and the [American Institute of Professional Geologists](#) (AIPG). Activities of the EES student organizations are regularly promoted via flyers, e-mail announcements, and verbal announcements at Colloquium.

University and Department Vehicles – M.S. Students occasionally operate either university or departmental vehicles for either teaching and research purposes or attending meetings. Students needing to drive either university or department vehicles must complete an online [Electronic Driver Application Form](#) prior to driving. The approval process can take as long as 1–2 weeks.

EES Department Office Staff – The department office staff have offices in the EES Main Office (260 Brehm Lab; 937-775-2201) and are available to help with any questions and concerns you may have:

Ms. Suzanne Semones, Assistant to the Chair – Suzanne maintains graduate program files, prepares appointment letters and requests for building keys, assists with the M.S. student orientation, and helps with other forms (including the I-9) and resources that help students become established in the department and university.

Ms. Andrea Peterson, Accounting Staff – Andrea coordinates driver authorization forms, prepares requests for building keys, assists with finances related to teaching, research, and travel, purchases supplies, and directs general questions.

Student Office Workers – Riley Drain and Erica Strobe greet and direct departmental visitors, direct telephone inquiries, assist with departmental photocopying and office supplies, and coordinate reservations for the department’s conference room and vehicles.

Academic Information

M.S. Program Requirements – The credit requirements for the EES M.S. degree include the following:

- Minimum of 30 graduate credit hours
- Minimum of 24 credit hours of course work
- Minimum of 6 credit hours of thesis research
 - Only 6 thesis credit hours count towards the student's GPA
 - An interim thesis grade is assigned until all thesis requirements have been completed (either satisfactory progress “M” or unsatisfactory progress “U”)

Advising – Either before or during their first semester, M.S. students should become aware of research interests of EES faculty members and make arrangements with a faculty member to serve as the student's principal advisor. Advisor selection should be completed by the end of Fall Semester in Year One. The principal advisor must be a member of the EES Department and have Regular [Graduate Faculty Status](#).

Thesis Committee – A student's thesis committee includes a major advisor (i.e., thesis committee chair) and at least two additional members (thesis committee members). The thesis committee chair must have Regular Graduate Faculty status and be a faculty member in the Department of Earth & Environmental Sciences. It is possible to have a thesis committee co-chair who has Adjunct Graduate Faculty status so long as the other co-chair meets both requirements. Thesis committee members must have either Regular or Adjunct Graduate Faculty status. Thesis committee members can be external to the department.

Coursework

Graduate Courses – Many graduate courses in the EES Department are cross listed with undergraduate courses. Graduate students earning graduate credit in such courses are required to complete academic work beyond that required of undergraduates in the course (e.g., an extra presentation or research paper). Graduate students must register for the graduate level designation (i.e., 6000-level course number) of cross-listed courses. EES courses listed at the 5000-level are not available for graduate credit for EES students. Also, not all EES courses listed at the 6000-level are appropriate for M.S. students; some are designed specifically for students in the M.S.T. degree program. Your advisor can help direct you to appropriate courses. Courses listed at the 5000-level in other CoSM departments can be taken by EES M.S. students for graduate credit.

Program of Study – The Program of Study is planned with the major advisor and specifies the graduate courses that will be required for completion of the M.S. degree. The Program of Study must show a reasonable degree of concentration on interrelated subjects and requires approval by your thesis committee. The Program of Study must show at least 24 credit hours of graduate courses and 6 credit hours of *EES 8990 Thesis*. Department policy is that no more than 13 credit hours of didactic courses from the same Instructor will count toward the 24 credit hours required in the degree program. The [Program of Study Form](#) must be completed, signed by your thesis advisory committee, and submitted to the Director of EES Graduate Programs (currently Dr. Chad Hammerschmidt) before the end of Spring Semester in the first academic year. Any course

substitutions and deviations from the Program of Study must be approved by your thesis committee and will require that you complete a revised Program of Study Form, obtain approval and signatures of your thesis committee members, and submit the new form to the Director of EES Graduate Programs.

Deficiency Courses – As described previously, students lacking the minimum undergraduate coursework may be accepted into the M.S. program with "deficiencies," but such students must complete the deficiency coursework prior to graduation from the M.S. program. Upon admission, the EES Department's Graduate Studies Committee will review the undergraduate transcripts and recommend one or more courses to be completed. These courses will be entered into the department's [Deficiency Statement Form](#) and a copy of the form provided to the student.

Preparation Courses – Other coursework may be customized in consultation with the Graduate Studies Committee and/or thesis committee to meet your academic and professional goals. Examples of such coursework include OSHA courses, short field experiences, etc. These courses may enhance your understanding and strengthen your credentials for employment; however, these are *not* counted towards the 24 credit hours required in the MS program.

Course Loads – GTAs and GRAs must register for a minimum of 12 credit hours to maintain financial support. This total may include graduate courses, deficiency courses, preparation courses, and thesis research hours.

Academic Progress and Policies

Timeline for Satisfactory Progress – Although there are exceptions related to a student's particular thesis project, most coursework should be completed during Year One; Year Two should mainly be dedicated to thesis research.

Fall Semester, Year One:

- Select an advisor
- Develop topic and title of research
- Begin supervised research work
- Students admitted under Provisional Status must supply a transcript noting proof of degree before the end of Fall Semester

Spring Semester, Year One:

- Confirm Thesis Committee
- Develop and complete the Program of Study
- Present research topic in Colloquium in a 10–15 minute overview

Summer Semester, Year One:

- Financial support requires that an approved Program of Study is on file
- Complete Thesis Proposal
- Devote most of the summer to thesis research

Fall Semester, Year Two:

- Registration requires that an approved Thesis Proposal is on file. Guidelines for the Thesis Proposal are included in the “Thesis Requirements” section of this booklet.
- Continue thesis research
- Begin writing thesis

Spring Semester, Year Two:

- Complete and submit the Application for Graduation
- Complete the thesis manuscript
- Defend thesis
- Submit the final version of thesis

Academic Standards (WSU Graduate School)

- The cumulative GPA in all graduate courses must be no less than 3.0
- If GPA drops below 3.0, it must be raised by the end of the next 8 graduate credit hours (which is usually one semester)
- Students admitted under Conditional Status must have a GPA of 3.0 or better after taking 8 credit hours (or face dismissal by the Graduate School)
- M.S. degree programs must be completed within 7 years.

Thesis Requirements

The master's thesis is an extensive writing project that addresses an original research problem and represents a significant advancement in research. The quality of the research and writing should be suitable for publication in a professional, peer-reviewed journal. Additional information about the scope and format of the master's thesis is available in the WSU Graduate School's [Thesis Handbook](#).

Thesis Credits – You must register for and pass at least six credit hours of *EES 8990 Thesis*. You may register for additional credit hours of EES 8990 to meet minimum credit hour requirements. These additional hours of EES 8990 cannot be used to replace any of the required 24 credit hours of didactic courses. Until the thesis is completed and approved, the grades issued for sections of EES 8990 will likely be “M,” which indicates satisfactory progress. This is a temporary grade that will be changed to a permanent grade once all degree requirements are completed. For six credit hours, a permanent letter grade (A, B, C, etc.) will be issued based on the quality of the thesis. All other “M” grades will be changed to “P,” indicating satisfactory performance. In rare cases, students who make unsatisfactory progress in their thesis will be issued permanent grades of “U” (unsatisfactory performance) instead of temporary grades of “M.”

During any semester in which you are registered for EES 8990, you should discuss with your thesis advisor what will constitute satisfactory progress. During your first semester, this might include finding, reading, and evaluating relevant published literature in the area of your thesis project; in your second semester it might consist of completing your thesis proposal. It is important that you and your thesis advisor agree on what will be expected each semester.

Thesis Committee – Thesis committees should be formed after your thesis topic has been determined but before you have completed the formal proposal. Your thesis advisor will normally recommend appropriate members for your thesis committee, but you have the final responsibility for selecting and inviting committee members. Committee members indicate their willingness to serve by approving the Program of Study form (see the preceding section on Academic Information, p. 17). The thesis committee includes the thesis advisor (i.e., thesis committee chair) and at least two additional members (thesis committee members). The thesis committee chair must have Regular Graduate Faculty status and be a faculty member in the Department of Earth & Environmental Sciences. It is possible to have a thesis committee co-chair who has Adjunct Graduate Faculty status so long as the other co-chair meets both requirements. Thesis committee members must have either Regular or Adjunct Graduate Faculty status. Thesis committee members can be external to the department.

Your thesis advisor and thesis committee will ensure that your research question is relevant, significant but manageable, and logically and methodologically sound. Of course, the most important member is your advisor. The committee is responsible for ensuring a student is prepared to undertake thesis research. Students must have acquired the needed background and skills before they will be allowed to pursue their thesis research. The committee gives this formal approval by signing the thesis proposal cover page. You should keep in touch with all committee members and seek their advice about either relevant educational or thesis issues. However, thesis committees are not to be used to review drafts of your proposal and thesis. Ask other graduate students and your thesis advisor to review your drafts. A draft of your thesis may

be submitted to the full committee only after the thesis advisor approves its release. The thesis committee must formally approve both the proposal and the final thesis.

Thesis Proposal –The thesis proposal should both demonstrate your knowledge of the proposed topic and describe an original research project for which you have primary responsibility, with the approval and guidance of your advisor and your thesis committee. The research should contribute to our understanding of an important theoretical, methodological, or practical problem. The scientific portion of the proposal will include: (1) a title page; (2) a description of the rationale for and significance of the research, including a review of relevant previous studies; (3) a concise statement of either the hypothesis or central research question; (4) a description of the procedures to be followed; (5) a projected timetable for the completion of the research; and (6) an estimated budget (e.g., field and lab expenses, computer hardware/software costs, illustration expenses, etc.) with either anticipated or potential sources of research funding included. The EES Department does not require either an exam or other formal admission to candidacy for the M.S. degree.

Thesis proposals are not concept papers. They are used to evaluate and approve specifically described projects. If the thesis research is changed, the thesis committee must approve the changes. Conversely, the proposal serves as a research “contract” specifying the limits of what will be expected in your thesis. You should work closely with your advisor as you develop your project and write your proposal. Previous thesis proposal can serve as guides; you should ask either your advisor or other students for copies to review.

Colloquium Presentation – After establishing a thesis topic and performing either preliminary research or literature review, students will present during Colloquium during Spring Semester of Year One. The presentation should consist of an overview (10–15 minutes) of the research area of the thesis. This introductory presentation should identify fundamental questions and approaches to answering them.

Thesis Format – Guidelines for formatting the thesis are available in the WSU Graduate School’s [Thesis Handbook](#). Students should arrange for the Graduate School to perform a [format check](#) of the thesis; this reduces the likelihood that the Graduate School would reject the thesis after the deposit deadline.

Thesis Drafts – Students should expect to complete at least three different drafts during consultation with their advisor. Some advisors prefer to review a student’s thesis one section at a time whereas others prefer to review complete drafts. Turnaround depends on the quality of the draft but students should allow at least two weeks for their advisor to review and return each draft. Thesis committee members should also be given at least two weeks to review a draft before approving it for display.

Thesis Display – An approved thesis must be on display at least two weeks before the scheduled thesis defense. The [Thesis Display Approval Form](#) must be signed by all committee members prior to submitting the thesis for display, which consists of placing a printed copy of the thesis on display in the EES Main Office (260 Brehm Lab). The display copy must be complete with all text, figures, and references. If appendices are included, they must be named although the final contents may be added later and need not be displayed.

Thesis Defense – The thesis defense is a formal presentation that gives a student the opportunity to demonstrate the knowledge and experience gained in the course of performing research. The defense consists of the M.S. candidate presenting to his or her thesis committee and any students, family, departmental faculty and staff, or members of the general public who would like to attend. A student planning a thesis defense is required to:

- Register for at least one credit hour during the semester in which the thesis is defended
- Obtain advisor approval to schedule the defense
- Obtain approval from the thesis advisory committee to establish the date and time of defense
- Obtain EES Department approval via [petition](#) for any thesis defense occurring during the summer
- Schedule a room for the defense with the EES office staff. The EES Conference Room in 264 Brehm is commonly used for the thesis defense.

Format of the thesis defense

- The MS candidate presents an overview (about 20 min) of the thesis research. (It's important to discuss this presentation with your thesis advisor and practice the presentation.)
- The candidate considers questions from the general audience
- The audience is excused and the thesis committee asks questions of the candidate
- The candidate is excused and the committee deliberates in private
- The committee's decision is conveyed to the candidate. Possible results include: pass with no revisions; pass with revisions; fail.
- If the thesis defense is not approved, the student is placed on probationary status and must wait at least 10 weeks before requesting another thesis defense meeting. A student who is denied approval twice will be recommended for dismissal from the program.

Thesis Approval Sheet – The thesis [Approval Sheet](#) is a page containing the title of the thesis, spaces for signatures from the thesis advisor, EES Department Chair, thesis committee members, and Dean of the Graduate School, and other information. This sheet may be produced after the thesis title is finalized. You should bring two copies of this page to your defense to obtain signatures from the thesis committee. These signatures confirm that you have successfully defended your thesis. If the thesis defense is approved contingent upon some modification of the written thesis, these signed sheets should be submitted to the [department office](#) to be held until modifications are made to the satisfaction of the committee. When modifications have been made and approved, the office staff will make a copy for the student's file, and take the approval sheet to the Graduate School. The Graduate School will obtain the Dean's signature on the approval sheets. One copy of the approval page will be filed in the Graduate School. The second copy will be placed in the graduate students file in the Department's office. The electronic thesis document (ETD) cannot be approved until the Graduate School receives the signed thesis approval page. The additional signatures will be added once you have completed all degree requirements, including submitting the final approved version of the thesis.

Final Submission of Thesis –The signatures on the Approval Sheet confirm that: (1) the final version of the thesis is acceptable (advisor's signature); and (2) all departmental requirements

have been completed (EES Department Chair's signature). The Approval Sheet must be submitted to the Graduate School.

The final version of the thesis must be submitted electronically to the WSU Graduate School within 30 days after the thesis defense. Please note that revisions to the thesis are typically required; these revisions should be discussed and clarified immediately after the thesis defense. It's important to clarify whether or not the committee members wish to approve the revisions. The thesis advisor gives final approval for the thesis.

Graduate Teaching Assistantships

A Graduate Teaching Assistantship (GTA) award carries a stipend for the academic year (two semesters: Fall and Spring) and a full tuition fee waiver (Fall, Spring, and Summer). The GTA award will typically begin during August and is intended as a two-year commitment; the GTA award will continue in the second-year (two semesters: Fall and Spring) so long as the student satisfactorily meets teaching responsibilities and academic expectations in the first year. The GTAs will also be awarded a tuition fee waiver for the summer term after the completion of the first academic year.

The GTA award can be combined with an Early Start Fellowship award that provides tuition and a stipend for the summer term (May – July) before the first academic year begins. Early Start Fellowships are awarded on a competitive basis to students who will be GTAs in the following Fall semester. The Early Start Fellowship allows the opportunity for a student to become involved in a research project and other assignments for one semester (summer).

GTAs are required to work 20 hours per week for 15 weeks during the Fall and Spring semesters under the direction of the Supervisor of Graduate Teaching Assistants, (currently Dr. Rebecca Teed) and a Head GTA. First-year GTAs with backgrounds in earth and environmental sciences are generally assigned to teach introductory labs and other related duties. Second-year GTAs often instruct upper-level undergraduate and graduate course labs. The GTA Supervisor and Head GTA jointly oversee the work assignments of the GTAs, and all GTAs meet weekly to review the upcoming week's assignments/grading, etc.

Principles of Instruction – GTAs are required to register for Principles of Instruction in Earth & Environmental Sciences (EES 7000) during Fall and Spring Semesters. The course is a one-hour discussion of teaching methods and preview of the introductory earth or environmental sciences lab that will be taught during the upcoming week.

Lab Syllabi – GTAs are required to provide a syllabus for each of their lab sections that includes the title of the course, a meeting schedule, the GTA's contact information and office hours, and grading policies. A template for the syllabus will be provided in the Principles of Instruction course.

Disability Services – GTAs may have students requiring accommodation for a physical or academic disability. To help GTAs fulfill university policies regarding such accommodations, the [WSU Office of Disability Services](#) offers a range of support services.

Grading – GTAs are required to grade their students' lab assignments, record the grades, and return the assignments the following week. Final grades should be provided to the lecture instructor at the end of the term.

Evaluations – The EES Department will provide each GTA with evaluation forms near the end of each term for students in each of his or her lab sections to complete. The evaluation forms are completed in class and the GTA should leave the room while students complete the evaluations. A student volunteer from the class should distribute the forms, collect the forms, and return them to the EES Main Office.

Additional Duties – GTAs are required to help proctor lecture exams and help with other departmental tasks (e.g., set up lab materials, drive vans during field trips, meet with prospective students, etc.)

Professional Meetings and Organizations

Professional Meetings

The EES Department encourages students to present their research at conferences and other public forums. These venues can be a good opportunity to interact with others who share your research interests and to develop professional relationships with other scientists in academia, government, and the private sector. The typical formats for presenting research at a professional meeting include:

- **Oral Sessions** – Most oral sessions consist of a 15-minute presentation (12 minutes of presentation and 3 minutes of questions and discussion) in either PowerPoint or PDF formats.
- **Poster Sessions** – Poster presentations consist of a mostly graphical display of your research that narrate for observers. The EES Department maintains a poster printer. Requests for printing a poster are made to EES Office staff and must be made well in advance, especially during the weeks prior to major conferences.

Financial Support – The EES Department provides funding for students traveling to professional meetings. The EES Department's [Student Travel Policy](#) specifies the amounts and allocations of funds. EES students seeking funding for travel are required to complete and submit the EES Department's [Travel Request Form](#) prior to departure. Also, many professional organizations offer travel grants and fee waivers for students attending professional meetings. Travel grants are typically competitive and may require detailed application processes whereas obtaining a fee waiver is usually a simple process that requires agreeing to contribute a few hours of work at the conference.

Professional Organizations

Joining a professional organization can enhance your résumé, help you learn about career options, and stay up to date on the latest news and research in your areas of interest. It can also help you obtain information about upcoming conferences, expand your network of professionals, and learn about career paths and job opportunities. The following is a selected list of professional organizations in the earth and environmental sciences:

- [Association for the Sciences of Limnology and Oceanography](#)
- [American Association of Petroleum Geologists](#)
- [American Chemical Society](#)
- [American Geological Institute](#)
- [American Geophysical Union](#)
- [American Institute of Hydrology](#)
- [American Institute of Professional Geologists](#)
- [American Meteorological Society](#)
- [Association of Engineering Geologists](#)
- [Association for Women Geoscientists](#)
- [Ecological Society of America](#)

- [Environmental Law Institute](#)
- [Geological Society of America](#)
- [Mineralogical Society of America](#)
- [National Association of Environmental Professionals](#)
- [North American Association for Environmental Education](#)
- [Paleontological Society](#)
- [Seismological Society of America](#)
- [Sigma Gamma Epsilon](#)
- [Society for Ecological Restoration International](#)
- [Society for Sedimentary Geology](#)
- [Society of Economic Geologists](#)
- [Society of Environmental Toxicology and Chemistry](#)
- [Society of Exploration Geophysicists](#)
- [Society of Petroleum Engineers](#)
- [Society of Wetland Scientists](#)
- [Society Promoting Environmental Conservation](#)
- [Soil Science Society of America](#)
- [Wildlife Society](#)

Graduation and Beyond

To graduate with a master's degree from Wright State University, students must fulfill all EES and Graduate School requirements. Please note that graduation is not automatic after you complete your degree requirements. Students who are planning to graduate are required to complete a [graduation application](#) and submit it, along with a \$35 application processing fee to the Graduate School (344 Student Union) before the [application filing deadline](#), which is the last business day of Week Two of the semester in which graduation is expected.

If a student happens to lack the requirements for graduating in the semester for which he or she has applied, it will be necessary to re-apply for the next semester (or for whenever the degree requirements will be complete) and submit a \$25 follow-up application processing fee to the Graduate School.

Leaving the Department – Students who have completed the M.S. Degree Program are asked to schedule an exit interview with Suzanne Semones and complete a short questionnaire. Your responses will help improve the M.S. program specifically, and the EES Department in general. Also, return your building keys and return any borrowed materials (e.g., books, software, supplies, etc.) to either your advisor or the EES Department Office.

Commencement – Students wishing to participate in WSU's [Commencement](#) must meet graduation eligibility requirements and register to indicate that they plan to participate.

Career Employment – WSU's [Office of Career Services](#) offers WSU students and alumni a wide range of career-related services.

Ph.D. Programs – Ph.D. programs are designed for students interested in becoming college or university teachers or professional researchers in either private or government institutions. Ph.D. programs typically take between four to six years to complete and usually require coursework, substantial original research, and completion of a dissertation. Many EES Department faculty members participate in WSU's [Environmental Sciences Ph.D. Program](#).

M.S. Degree Checklist

Name: _____

Milestone	Details	Date
Initial Term	The Graduate School requires an M.S. degree to be completed within 7 years. <i>Enter term (Fall, Spring, Summer) and year.</i>	
Academic Advising	Beginning of First Semester. Discuss interests/goals, initial course recommendations, and potential thesis advisor(s) with assigned Academic Advisor. Academic Advisor: _____	
Determine Thesis Advisor	Should be completed by the end of First Semester in Year 1. Thesis advisor must be a member of the EES department and have Regular Graduate Faculty Status. Thesis Advisor: _____	
Program of Study	Should be completed by the end of Second Semester in Year 1. Link: Program of Study Specifies the graduate courses that are required. Approved by thesis advisor and two additional committee members. Submit a signed copy to the Director of Graduate Programs in the department (currently Dr. Chad Hammerschmidt). This is a Graduate School requirement; any changes must be approved by submitting a revised Program signed by all.	
Present at Colloquium	Should be completed by the end of Second Semester in Year 1. Students present an overview (15-20 min.) of the research area of the thesis. Should identify fundamental questions and approaches to answering them. Arrange by email to Dr. Silvia Newell	

<p>Thesis Proposal</p>	<p>Should be completed <u>by the end of Year 1.</u></p> <p>The proposal specifies the questions to be addressed and the methods by which they will be answered. It is developed through rounds of drafts and revisions with the thesis advisor. The final version of the proposal is approved by the thesis committee and the Director of Graduate Programs in the department (currently Dr. Chad Hammerschmidt). A copy is filed in the department office.</p> <p>Working Title: _____</p> <p>_____</p> <p>Enter date proposal submitted to Dr. Hammerschmidt.</p>	
<p>Apply for Graduation</p>	<p><u>During Second Semester in Year 2.</u></p> <p>Must be registered for at least 1 credit hour in the term during which the thesis is defended. Details, deadlines, and forms available from the Graduate School; start with this link: Graduation Information</p>	
<p>Thesis Drafts</p>	<p>Expect no fewer than three rounds of drafts with advisor. Some advisors want to work with individual sections, others with complete drafts only. Turnaround depends on the quality of the draft but should never be expected in less than two weeks for any draft.</p> <p>Thesis committee members should be given two weeks to review a draft before approving it for display. Enter date of first complete draft to advisor. Enter dates of subsequent drafts.</p>	<p>_____</p> <p>_____</p> <p>_____</p>
<p>Display Thesis</p>	<p>Advisor gives approval to schedule a defense. The date and time of thesis defense must be approved by the thesis advisory committee.</p> <p>This Thesis Approval Form must be signed by committee members prior to submitting the thesis for display. A printed copy of the thesis must be available in the department office. This copy must be complete with all text, figures, and references. If appendices are included, they must be named but the final contents can be added later.</p> <p>Thesis must be on display <u>at least 2 weeks before the scheduled thesis defense.</u></p>	

	Enter date the approved thesis is put on display.	
Thesis Defense	<p>Work with department office staff to schedule a room and post announcements. A Departmental petition must be approved for a defense to be scheduled during Summer Semester. The defense begins with an overview (~20 min) of the thesis research. Keep in mind that the overview need not present every step in the research but should provide a clear “story” of what was done, what was found, and what questions are answered by the research. Discuss the presentation with your thesis advisor. Practice the presentation.</p> <p>The committee deliberates in private and then conveys its conclusion to the candidate. Possible results: <i>pass with no revisions; pass with revisions; fail</i></p>	
Thesis Cover Page	<p>The thesis signature page can be produced once the final thesis title is finalized (see Thesis Signature Page template). Signatures from the thesis committee affirm that the defense was successful, so bring this to the defense. Additional signatures on this page confirm that (1) the advisor has approved the final version of the thesis (“Thesis Director”; a second signature by your advisor); (2) departmental requirements have been met (department chair) and (3) Graduate School requirements have been met (Vice President for Research; this signature will be added by the Graduate School). This sheet must be submitted to the Graduate School; details at Approval (signature) Page</p>	
Final Version of Thesis	<p>Submitted within 30 days after thesis defense. Revisions to the thesis are normally required and should be discussed immediately after the defense. Clarify whether or not the committee members wish to approve the revisions. The advisor gives final approval for the thesis. The Graduate School Thesis Handbook has details on how to upload the thesis (see Final Deposit).</p>	
Exit interview in Department	<p>Schedule by email to Suzanne Semones. Your responses on a short questionnaire will help improve our degree program and the department generally.</p>	
Return Things	<p>Return keys and reclaim deposit. Return resources (books etc.) to advisor.</p>	