JULY 2024

Sustainable Forest Management

Graduate Program

2024-2025

Forest Engineering, Resources and Management

Department Office | 216 Peavy Forest Science Center

541-737-4952

Cover Photo taken at McMinnville Watershed Working Forest

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Preface

Welcome from the Department of Forest Engineering, Resources and Management (FERM) faculty, staff, and students. This department is recognized throughout the world for excellence in graduate student education, creative problem-solving research, and innovative extended education. The faculty is a unique combination of forest scientists, engineers, and hydrologists who use forestry principles to solve complex forestry problems in forested watersheds and support sustainable management of forests. If you are interested in a graduate program in Sustainable Forest Management (SFM) with specialization in one of three focus areas (MF) or in one of six research areas of concentration (MF/MS/PhD), we invite you to further explore the opportunities described in this guide. All study areas are outlined on page eight.

Many FERM faculty members are recognized research leaders and several provide leadership in international scientific organizations. The faculty is pursuing a wide range of basic and applied research projects on topics that include: active forest management for healthy, sustainable forests; advanced technologies for forest measurements and modeling; forest supply chain management; wildland fire management; understanding and mitigating environmental impacts of forestry activities; spatially-explicit landscape modeling; applications of emerging information technologies; forestry workforce issues; basic hydrological sciences; harvesting process engineering; and transportation system design.

In addition to the individual programs, we have developed several decision-support systems that are used by the practitioners and policy makers throughout the world. We are proud of the contributions these programs have made to the practice of sustainable forestry.

The collective strengths of the faculty, the university and associated research partners, as well as the Oregon environment make this a special place for pursuing a graduate education. The Corvallis community is a very pleasant place to live, and it is just a short distance to abundant recreational and cultural opportunities at the Oregon coast, the Coast Range and Cascade Mountains, and the metro areas of Portland, Salem, and Eugene.

This guide provides only a brief overview of opportunities for graduate study within the FERM Department. If it attracts your interest, I encourage you to seek further information from the individual faculty in your area(s) of interest.

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The College of Forestry

Forestry is important to the people of Oregon. Forty-nine percent of the state's 61.4 million acres is forest land, which supports Oregon's most important industry, forest resources. The forests provide wood, water, fish habitat, scenery, recreation, cultural sites, wildlife, rangeland, and other resources that contribute to the state's and region's economy and quality of life.

Mission and Vision

The mission of the College of Forestry, as part of Oregon's Land, Sea, Sun, and Space Grant University, is to educate and engage the next generation of scholars, practitioners, and users of the world's forest resources, to conduct distinctive problem-solving and fundamental research on the nature and use of forests and related resources, and to share our discoveries and knowledge with others.

Oregon State University's College of Forestry combines the warmth of a small school with the rich resources of a comprehensive university. Our students experience a rigorous, demanding, hands-on, professional education. The educational environment is friendly and supportive.

College of Forestry students are a close-knit group. Professors teach their own classes and interact with students daily. They are caring and accessible.

Oregon State University's College of Forestry has been educating professionals for more than a century. We've earned a reputation as a world-class center of teaching and learning about forests and related resources. We offer undergraduate and graduate degrees in three Departments: Forest Engineering, Resources and Management, Forest Ecosystems and Society, and Wood Science and Engineering. We also jointly offer an interdisciplinary undergraduate degree in Natural Resources, and several interdisciplinary graduate programs. We manage about 14,000 acres of College Forests, most of it within minutes of campus. Oregon State University is a Land Grant, Sea Grant, Sun Grant, and Space Grant university, an NCAA Division I university, and a member of the Pac-12 athletic conference. It carries the prestigious ranking of a Carnegie Doctoral/Research-Extensive University.

Facilities and Programs

Oregonians have long recognized the importance of their forests and have provided outstanding facilities for the College of Forestry. Peavy Hall and Richardson Hall have state-of-the-art classrooms, computer and research laboratories, and designated self-learning and media centers for undergraduate and graduate students. Office space is provided for all Graduate Research and Teaching Assistants, and most graduate students. Computer facilities include several microcomputer and GIS laboratories, and other facilities dedicated to graduate student research.

Research conducted through our Institute for Working Forest Landscapes keeps the College in the forefront of new developments in Forestry. Peavy and Richardson Halls are adjacent to the Forestry Sciences Laboratory of the USDA Forest Service Pacific Northwest Research Station. The USDI Forest and Range Ecosystem Science of the U.S. Geological Survey also has a campus-based research program that complements and interacts with ours. Nearby is the Environmental Research Laboratory of the U.S. Environmental Protection Agency. Collectively, these facilities and organizations comprise one of the largest concentrations of forestry and natural resources expertise in the world.

The Forestry Extension and Outreach Education programs at OSU are among the finest in the world. Numerous Extension forestry specialists, county forestry agents, and other faculty provide educational opportunities, forestry information, and advice for practicing foresters, the forest industries, forest landowners, and other audiences.

The College of Forestry has a long tradition of graduate education and research. Our programs provide a solid forestry background and competence in specialized fields. Employers in the forest industries, universities, NGOs, and government agencies recognize this strength.

Research Forests

The College of Forestry has access to two major forest properties dedicated to research and education. The McDonald-Dunn, Spaulding, Marchel, and Blodgett forest properties, totaling about 14,000 acres, are owned by the College of Forestry as the results of gifts and are managed by the College for student learning, discovery and engagement. A growing number of state-wide "Discovery Forests" are managed to demonstrate innovative forestry practices for family forest owners and others. The 15,000-acre H. J. Andrews Experimental Forest on the Willamette National Forest is owned by the USDA Forest Service, but jointly managed by OSU and the Pacific Northwest Research Station under a National Science Foundation-sponsored long-term agreement.

Departments

Few forestry programs have the breadth represented by the three departments in the College of Forestry at OSU. All offer undergraduate, graduate, extended education, and research programs:

- **Forest Engineering, Resources and Management** (engineering, planning, and active forest management)
- **Forest Ecosystems and Society** (ecological and social sciences)
- **Wood Science and Engineering** (wood industry management and wood science technology)

General Information

You can visit Oregon State University and the College of Forestry online at the following web addresses:

Oregon State University	http://oregonstate.edu/
College of Forestry	http://www.forestry.oregonstate.edu/
Dept. of Forest Engineering, Resources & Management	http://www.ferm.forestry.oregonstate.edu/
OSU Graduate School	http://gradschool.oregonstate.edu/
Office of Financial Aid	https://financialaid.oregonstate.edu/
Graduate School Admissions	http://gradschool.oregonstate.edu/admissions
University Housing & Dining Services	https://uhds.oregonstate.edu/

Graduate School Catalog and Success Guide

The Oregon State University Graduate Student catalog provides detailed information on University regulations and procedures. The catalog also contains a complete list of graduate level courses offered by all departments at OSU. The Oregon State University Graduate Student Success Guide is a compilation of regulation about graduate programs, examinations, and graduation requirements.

The University and Community

OSU is one of only ten US universities to hold the Land Grant, Sea Grant, Sun Grant, and Space Grant designation and is a Carnegie Doctoral/Research-Intensive university. The university has an institution-wide commitment to diversity and multiculturalism, and provides a welcoming atmosphere with unique professional opportunities. OSU is located in Corvallis, a community of 55,000 people situated in the Willamette Valley between Portland and Eugene. Ocean beaches, lakes, rivers, forests, high desert, and the rugged Cascade and Coast Ranges are all within a 100-mile drive of Corvallis. The surrounding farmland is dedicated to growing a wide variety of crops, and there are extensive recreation areas in local, state and federal parks, including forested lands and rivers. The entire valley corridor enjoys a mild, temperate climate.

Housing

A variety of housing and dining accommodations are available to graduate students. Both one-term and academic-year contracts are available.

All graduate students interested in applying for student family housing owned by the University should contact Family Housing: https://uhds.oregonstate.edu/housing/family-housing

Graduate teaching assistantships as Residence Hall and Cooperative House Directors are sometimes available for those with appropriate experience. There also may be opportunities as Resident Advisors in private living groups. Contact the Department of Student Housing or the Office of the Dean of Students for more information.

University Housing & Dining Services
Oxford House
957 SW Jefferson Ave.
Corvallis, OR 97333 USA
Phone: 541-737-4771
Web: https://uhds.oregonstate.edu/contact-uhds

Office Accommodations

To the extent possible, the FERM Department makes office space available to graduate students, usually in the form of shared multi-offices. Available desk space is assigned by the Curriculum Coordinator at the Graduate Student Orientation or upon arrival to OSU. Computer access is provided in several College-wide computer labs. Faculty advisors may provide their student(s) with computing equipment upon arrival. Students are permitted to bring their own computers or laptops, if they wish.

Computing Facilities

The College of Forestry maintains an extensive network of computing laboratories for exclusive use by graduate students. Some labs are scheduled for short-term use, while others may be utilized for longer-term projects. Both Peavy Forest Science Center (PFSC) and Richardson Hall (RICH) have WIFI access through OSU's network. Additionally, many machines have specialized software for particular applications, all of which are internet capable.

Program Contacts

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Graduate Program in Sustainable Forest Management

The Sustainable Forest Management (SFM) graduate program (major code 1090) is administered by the FERM Department. It emphasizes the management of forests to meet a defined set of ecological, economic and social criteria. The SFM program (MF, MS, and PhD) provides a strong grounding in the principles and techniques of active management of forests to improve forest health and condition while producing a full range of products and ecosystems services. The SFM program is a recognized Science Technology Engineering Math (STEM) discipline under Forest Science and Biology 03.0502.

MF students must choose one of the three focus areas (or one of the six areas of concentration as outlined below):

1. **Forest Business for Private Landowners**: Trains students to utilize business techniques to analyze decisions commonly made by private forest landowners to achieve their management objectives. Coursework and faculty expertise focus on areas such as economics, finance, and taxation.
2. **Spatial Science and Analysis**: Designed for those that wish to study the application of spatial science and tools for natural resources. GIS and remote sensing courses are highlighted in the curriculum, as is a requirement for spatial programming and statistics. Students completing this option should have a solid foundation for careers as analysts and potential managers for spatial operations.
3. **Silviculture, Fire, Forest Health**: Managing forest vegetation dynamics and ecosystem processes to achieve a range of management objectives.

MS and PhD students must choose one of the six areas of concentration:

1. **Forest Operations Planning and Management**: Planning, organizing, and executing forest plans; enhancing supply chain efficiency and improving international competitiveness
2. **Forest Policy Analysis and Economics***: Analyzing tradeoffs in the forest and resource policy decision process; public land use policy; interpretations of regulations; markets for forest products; forest certification; theoretical and applied research related to ecosystem services
3. **Forest Biometrics and Geomatics**: Modeling tree and stand development; forest data sampling and monitoring methods; forest measurements and assessments; mapping and data management technologies
4. **Silviculture, Fire, Forest Health, and Biodiversity**: Manipulating site productivity and vegetation to achieve management objectives, from restoration to intensive timber production; fire ecology and fire management; forest ecosystem health
5. **Forest Soil and Watershed Processes**: Understanding watershed conditions and processes in forested ecosystems and the effects of management activities; evaluating and improving soil and water quality and related practices and policies for forest operations
6. **Engineering for Sustainable Forestry**: Designing forest operations to achieve sustainable forest management objectives; ecological restoration operations; road design and construction

*The Forest Policy Analysis and Economics area of concentration is jointly sponsored by the Departments of Forest Engineering, Resources and Management and Applied Economics.

Graduate Degrees Offered in Sustainable Forest Management

Master of Forestry (MF)

The Master of Forestry (MF) in Sustainable Forest Management is intended for students who wish to pursue professional career pathways in forestry and related fields. The MF degree provides pathways for students with or without previous forestry-related education or experience to develop the skills and knowledge needed to begin careers as forestry professionals and for current forestry professionals to continue their career development and growth. Students choose one of three focused programs of study in forest business, geomatics, and silviculture or a general MF from one of the six areas of concentration, representing different disciplines involved in the sustainable management of forest ecosystems to achieve multiple social, economic, and environmental objectives. The MF degree program can be completed in as few as four terms of study. A professional paper is required and allows a student to research a contemporary issue of their interest.

Master of Science (MS)

The Master of Science in Sustainable Forest Management is appropriate for students who want two or more years of formal graduate work and who wish to develop a limited research specialization. Designed primarily for persons pursuing careers in research or teaching or those seeking professional development through in-depth research on a topic of interest, the MS program can be either a terminal degree or the first step toward a doctorate. The program provides an opportunity for independent research to be reported in a formal Master's Thesis. MS students choose from one of the six SFM areas of concentration.

Doctor of Philosophy (PhD)

The Doctorate of Philosophy in Sustainable Forest Management is intended for persons seeking careers in teaching and/or research. The program emphasizes strong research specialization while maintaining an understanding and appreciation of broader management and resource use issues. The dissertation and associated research play a dual role by enabling the student to develop in-depth knowledge of specific technical areas, while at the same time gaining experience in conceptualizing, planning, conducting, and reporting a major research project. PhD students choose from one of the six SFM areas of concentration.

Admission and Application Procedures

Admission Procedures

The Graduate School screens candidates to ensure that the minimum standards of the University are met. For minimum application requirements, visit the Graduate School admissions webpage.

The FERM Curriculum Coordinator screens applications for satisfaction of the SFM program minimum standards and asks a panel of faculty members in the area(s) of the applicant's chosen research interests for a detailed review of all materials. *The department's Graduate Admissions Committee cannot and will not review an incomplete application.*

Notice of departmental decision is usually sent within two months of our receipt of a completed application. Applicants occasionally confuse a department letter of acceptance, or correspondence from faculty, as equivalent to admission. However, the "Notice of Admission" issued solely by the OSU Graduate School is the **official** University notice to the applicant that all application and review procedures have been completed and that the student may enroll in the term for which they have applied.

Application Procedures

Persons seeking admission to any of the department's graduate programs should follow instructions from the Graduate School.

Only online applications are accepted. If you are unable to access the online web application because you lack reliable internet access, or you do not have a credit card for payment, please contact Graduate Admissions or send a note to their postal address to see if alternative arrangements can be made.

Graduate School
Heckart Lodge
2900 SW Jefferson Way
Oregon State University
Corvallis, OR 97331
Graduate.Admissions@oregonstate.edu

All supporting materials, including letters of recommendation and unofficial transcripts, may be uploaded to the Graduate School's online system.

Note: Current and former Oregon State University students are not required to provide OSU transcripts. You may be required to provide transcripts from prior institutions attended if OSU is no longer in possession of the original transcript.

Upon admission, but prior to registration, the Graduate School must receive official confirmation of undergraduate degree completion shown by receipt of official academic records that include the degree earned and date granted. If your country issues them, we also require official degree certificates.

Commonly asked questions about the Sustainable Forest Management graduate program and guidance for finding your way through the application and admissions process can also be found on our program website.

Application Materials Required by Department

- Three letters of recommendation: References should be from instructors in courses related to major, employers, or others who can critically evaluate potential for success as a graduate student in our program. As part of the online application system, you must provide names and email addresses of your references. The system then sends an email to each reference and enables them to submit an electronic letter for you. Alternatively, your reference may mail a confidential letter to the OSU Graduate School (address identified above).
- Statement of Objectives: Applicants will be asked to answer seven program-specific questions that let us know about their interests, goals, background, strengths, potential challenges, and how they can contribute to our diverse student body. *Our program has replaced the commonly required statement of objectives with program-specific questions to help guide an applicant to supply information that is helpful in our assessment of their potential as a graduate student.*
- GRE test results*: No minimum GRE score required in any category. All scores are received electronically and uploaded into the student's application by Graduate School staff.

Graduate Record Examination (GRE)*

A general entrance exam that measures and reflects knowledge of analytical writing, verbal reasoning, and quantitative reasoning. At present, the GRE test costs $205. Information regarding the times, locations, and administration of the GRE is available at http://www.ets.org/gre. *Find a helpful study guide online here: https://www.studypool.com/guide/ultimate-GRE-guide*.

When indicating recipients of scores on your GRE registration form, specify the **Oregon State University institution code: 4586** to ensure we receive your scores. Be sure to take the GRE far enough in advance so your scores will reach the University before application deadlines.

*Starting academic year 2024-25 (e.g. Summer 2024 and forward), the GRE will no longer be an application requirement. Students who have completed the exam may choose to upload exam records, if desired.

International Students

There are additional requirements for International Applicants. Visit the Graduate School International Admissions webpage for additional information.

English Language Test Requirement

All international applicants and applicants that did not receive a degree in the U.S. (or other English speaking country) must meet the University's English language proficiency requirements for admission. This may include completion of the TOEFL, IELTS, or Duolingo exam.

English Language Proficiency

Admitted international students may be required to complete a test of spoken English prior to enrollment. If this test indicates that remedial work is needed to successfully complete the requirements of the graduate program, the student may be required to take additional language training at their own expense through INTO.

Transcripts

If the institution is outside the United States, both an original language version and certified English translation of all academic records and degree statements are required. Please include certificates/diplomas for all degrees earned.

Application Deadlines

We encourage you to apply early and to follow the application procedures carefully. Sustainable Forest Management application deadlines are identified below and are available on our website.

Note: Upload your application materials as early as possible; the Graduate School and Departmental Admissions Teams are very busy in peak application season (December through mid-April).

Students within the U.S.: Completed applications must be submitted according to the below program advertised deadlines.

International Students Outside the U.S.: Students are advised to submit all materials as early as possible to allow adequate time for students to obtain Visas and make travel arrangements.

December 31	Fall Term for fellowship consideration
April 15	Fall Term (general deadline)
June 15	Winter Term
November 1	Spring Term
January 20	Summer Term

Delayed Enrollment
Candidates who have been admitted, but have not registered for any classes or who wish to be considered for a different starting term (within the same academic year of the original application), must file a Change of Term request with the Graduate School. **One term change within the academic year is allowed**. (Example: An application originally submitted for Fall 2023 can be changed to Summer 2023 or Winter 2024 or Spring 2024. Summer 2043 begins the new academic year.) Requesting more than one term change or term changes to new academic years requires a new application and fee. Applicants who wish to change their starting term should utilize the online form.

Continuous Enrollment
All graduate students are required to register for a minimum of 3 credits each term, with the exception of summer term (unless the student is using university services during that time). An official, limited Leave of Absence request can be granted for those with good causes. Those who do not register for the required minimum credits must file an Application for Graduate Readmission, which must be approved by the student's Major Professor, Department Head, and Graduate School Dean, though readmission is not guaranteed. If readmission is approved, for the first term of reinstatement, the student must register for a minimum of 3 graduate credits for each term of unauthorized break. For additional information, review the Continuous Enrollment Policy in the Graduate Catalog.

International graduate students may be required to register for additional credits each academic term (generally 9) in order to maintain visa status. Students should contact the Office of International Services with questions.

Graduate School policies are available in the OSU Academic Catalog.

Financial Assistance

Applicants are asked a series of questions in the Online Admission Application Form regarding funding support. All applicants who submit their application according to term deadlines are automatically considered for financial assistance. No special application or additional materials are required. Notification of employment or award is often included with a departmental letter of acceptance or may follow soon after. Brief explanations of common funding sources are detailed below.

Graduate Assistantships (GAs)

Graduate Assistantships in research and/or teaching are generally awarded on a term-by-term basis depending on degree, experience, and availability of funds. Competition for GA appointments is intense and the number of assistantships varies from year to year depending on the research programs of the department's graduate faculty by Area of Concentration (AoC) and availability of funds. There can be no assurance that GA funding will be available.

GA terms and conditions of employment (for service not required as part of their degree requirements) are prescribed in a Collective Bargaining Agreement. GAs may also choose to be members of the Coalition of Graduate Employees.

GA appointments provide a monthly stipend at 0.20-0.49 full-time equivalent (FTE), tuition remission, student fee assistance, and health insurance for each term of appointment. The proportional FTE determines the monthly amount the student is paid based on a 1.0 FTE amount that is set by the College of Forestry and University Human Resources. For more information, visit the Graduate School's Funding webpage.

Students receiving a **research appointment (GRA)** are supported by grants, contracts or other agreements. GRA stipends are subject to taxes and are provided to cover a student's living and course related expenses. The GRA work usually serves as the basis for the student's thesis or dissertation, although the student may also be required to perform other unrelated research tasks depending on the scope of the project. Due to the typical progression of many research projects, the exact amount of time a student spends on their research project per week may fluctuate during the course of a year. Prospective students can learn about opportunities for GRA support by contacting individual faculty in their research area of interest.

Alternatively, there are several opportunities for students to serve as a **teaching assistant (GTA)**. GTAs are usually appointed for one academic term, but are eligible to receive renewal TA assignments for other courses in subsequent terms, pending availability. To inquire about TA availability, contact the SFM Curriculum Coordinator. All PhD students are expected to assist in teaching at least one term during their residency to gain experience in this important endeavor.

Fellowships and Scholarships

Fellowships and scholarships are administered at three levels at OSU; the FERM Department, College of Forestry, and Graduate School. The SFM Grad Program Chair and Curriculum Coordinator assist the FERM Faculty AoC Committee in identifying potential recipients for all departmental awards and nominees for College and Graduate School awards.

The FERM Faculty AoC Committee reviews applications and recommends candidates for **departmental fellowships** and **Laurels tuition scholarships** to the Department Head for selection. Number of departmental fellowships varies from academic year, but no more than four are awarded annually. *Laurels scholarships are available at the discretion of the Graduate School*. Priority will be given to applications completed by **December 31**.

The **College of Forestry** administers a selection of **scholarships** each year. In FERM, student candidates are selected by the FERM AoC Committee and recommended to the Department Head for nomination. Priority for College scholarship consideration will be given to applications completed by **December 31**. The College of Forestry Scholarship Committee selects recipients for these awards.

Each department within the College may nominate a fixed number of new (and continuing) students as specified by the College Scholarship Committee. There are two rounds of nominations for College awards. The first round deadline is in mid-February and only new incoming students are nominated during this round. The second round deadline is near the end of March when new and continuing students may be nominated. Students cannot nominate themselves and major professors cannot nominate their students directly to the College or to Graduate School Committees.

The **Graduate School** administers numerous awards for applicants selected from department nominees, such as the University's Distinguished Provost Fellowship, or from the current student body for other opportunities. Prospective and current students may contact the SFM Curriculum Coordinator about these University funding opportunities, or visit the Graduate School website for additional information. *Depending on the award, additional documentation beyond the scope of the standard graduate application may be required for eligibility*.

Other Supplemental Funding Opportunities and Support

The FERM Department, College, and Graduate School offer additional methods of funding for travel and research support.

FERM administers the J. Richard Dilworth Graduate Award and Lee Harris Travel Grant to current students. Visit our funding page for additional information.

The College of Forestry offers similar awards for experiential learning and emergency or hardship. Visit the College's Student Services scholarships page for additional information.

The College also recognizes many students face food insecurity. Rootstock is a College-led initiative that provides a variety of resources and educational experiences to the College faculty, staff, and students ensuring that our community has the food and resources they need. Most notable is our in-house student food pantry, open once a day each week during the academic year (Fall, Winter, and Spring terms), as well as the clothing library. Multiple fundraising events occur throughout the year to support this donor-financed endeavor.

The Graduate School offers awards for continuing students to support professional development, scholarly presentations, and degree completion to wrap-up a final graduating term. Review these and other opportunities by visiting the Graduate School website.

Additionally, the University provides support for basic needs. Visit the Division of Student Affairs website for more information.

Credit Hours
Departments expect that graduate assistants will register for the minimum number of required credits. The number of credit-hours allowed each term for graduate assistants depends on the appointment term. Graduate assistants must register for and complete a minimum of **twelve** credit-hours each term of the appointment during the academic year, and **three** credit-hours in the Summer term, in order to satisfy the assistantship and tuition remission requirements. All students enrolling for at least nine credits of coursework are advised to register for their maximum allowable credits each term, using thesis credits to increase their workloads to the allowable maximum (12-16 credits). Ecampus courses should not be taken unless absolutely necessary due to an increased tuition cost. Students should discuss course registration with their supervisor and then request approval from the employing department *before* registering for an Ecampus course. Contact the Curriculum Coordinator for additional information.

Student Hourly Positions
Based on the availability of funds or a student's work requirements by country, some professors may hire graduate students to work on research projects on an hourly basis, most commonly in the Summer term. For additional information regarding student employment, please refer to the Student Employment Manual.

Summer Graduate Hourly Appointments
During summer term, graduate students may be appointed on a graduate hourly appointment. This appointment type allows students to continue working during Summer term without having to register for classes. These appointments may be dependent on the source of funding and student status (e.g. continuing vs. graduating).

OSU Financial Aid
The University Financial Aid Office administers student loans, grants, College work-study, and scholarship programs, including foreign student tuition scholarships. For more information, contact:

OSU Financial Aid Office
Oregon State University
218 Kerr Administration
Corvallis, OR 97331
541-737-2241
http://financialaid.oregonstate.edu/

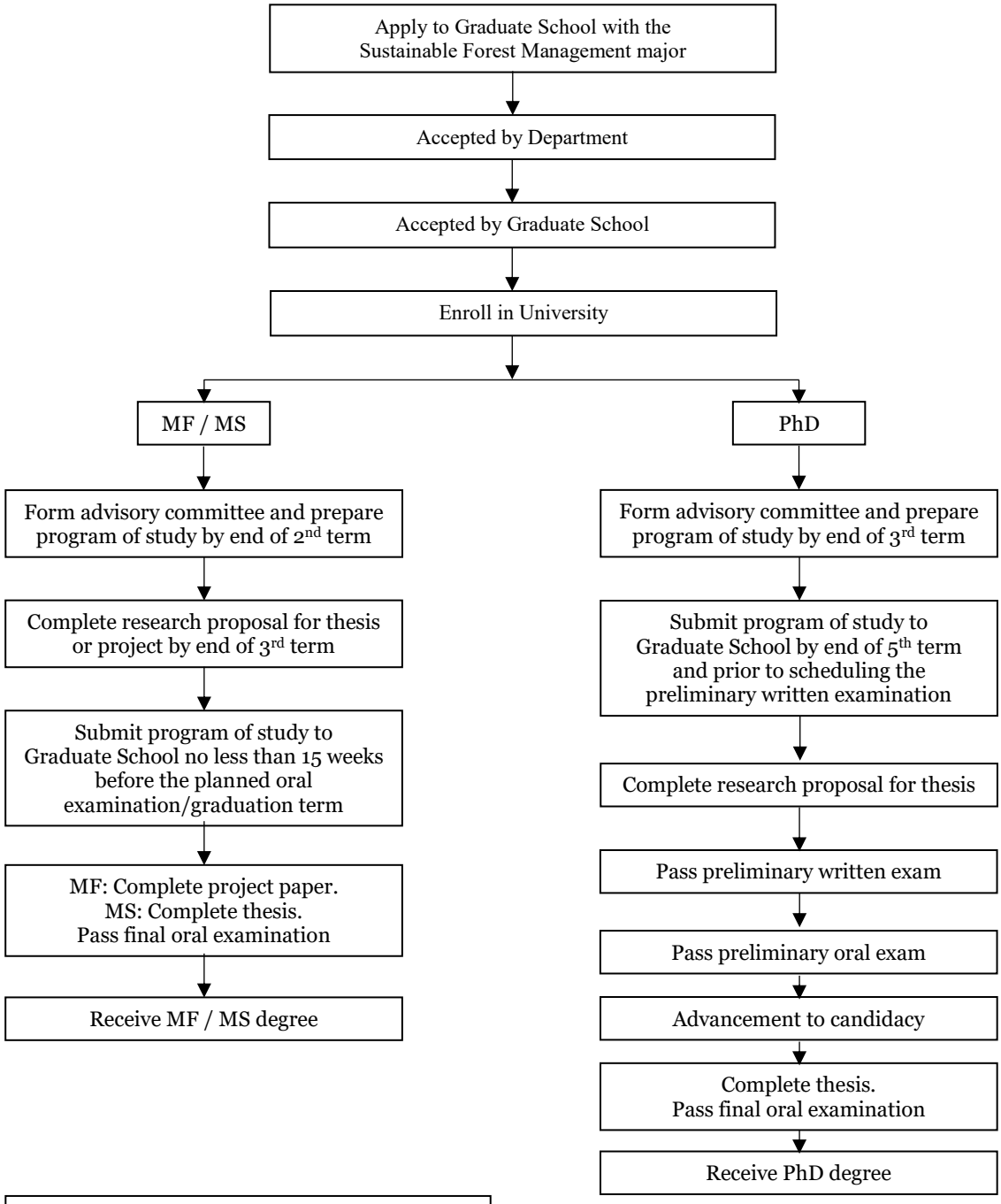
Performance Expectations

All students will be evaluated annually by their major professor(s) and/or committee on their progress toward completing a degree program. A written copy will be filed in the student's academic and/or employment file located electronically within the FERM Department office. For students employed as GAs, this evaluation must be completed prior to reappointment the following year. The major professor(s), supervisor(s), and/or committee may require more frequent evaluations and additional means of assessing performance and ability.

Students are expected to maintain a 3.0 grade point average (GPA), both overall and on program of study courses, to be satisfactorily progressing towards degree completion.

More information regarding graduate assistant performance expectations can be found on the Coalition of Graduate Employees (CGE) Bargaining Agreement, Article 15.

Flow Diagram for Graduate Program in Sustainable Forest Management



For additional information about the SFM degree requirements, download the MF, MS, and PhD degree program checklists and evaluation rubrics at: http://ferm.forestry.oregonstate.edu/current-graduate-student-information.

Copies of the unofficial rubrics and checklists may be found on pgs. 52-65 of this advising guide.

COVID-19 Safety and Success

Oregon State University currently provides primarily in-person and on-site learning, teaching, work, programs and activities. We are confident we can continue to do so with the many plans and tools in place to help reduce the risk and spread of COVID-19.

Masks are welcome, but no longer required at OSU. Those at higher risk are welcome to continue wearing masks. Additional information is detailed below and is available online: https://covid.oregonstate.edu.

Vaccination Requirements
OSU requires all employees and students who work, learn or engage with others in-person as part of their job duties to show proof of COVID-19 vaccinations, though exceptions are allowed when based on medical or disability reasons or sincerely held religious beliefs.

Please upload your proof of vaccination to Student Health Services' secure Patient Portal.

Testing Options
Individuals who wish to obtain a COVID-19 PCR test at any OSU location may do so. However, do not test on campus if you are symptomatic.

Upload your COVID-19 test results.

Note: Free self-test kits are available around campus.

OSU will continue to conduct COVID-19 wastewater surveillance and genome sequencing.

Positive Case Notification
OSU requires all students and employees report if they have tested positive for COVID-19 and been on-site at any OSU location in the previous 10 days.

Notify OSU by completing the Positive COVID-19 Notification Form.

For more guidance, visit Positive Case Notification.

Quarantine & Isolation Guidelines

Additional Policies & Guidelines
OSU's COVID-19 Safety & Success Policy remains in effect and applies to all Oregon State University locations and activities and serves the university's goal to help reduce the risk and spread of COVID-19. The Safety and Success Policy includes:

- Mask Guidance
- Vaccine Program Requirement

Master of Forestry (MF)

The degree of Master of Forestry in Sustainable Forest Management is designed for students who want one or more years of formal graduate work and who plan professional careers with forestry organizations, either public or private. The main objective is to improve students' knowledge of and competence in the principles and practice of active forest management to provide the full range of products and ecosystem services from forested landscapes. MF students choose from one of three programs with a focus on forest business, geomatics, and silviculture or a general MF program from one of the six areas of concentration.

Admission to the Program

An applicant for the MF degree must meet requirements of the Graduate School (see OSU Graduate Catalog) in addition to those of the Forest Engineering, Resources and Management Department. An applicant generally must hold a Bachelor's degree in Forestry, Forest Engineering or a related subject area, with preference from an institution accredited by the Society of American Foresters, and should have a high scholastic record (a grade point average of at least 3.0). In some cases, an applicant who does not meet these requirements may be conditionally admitted when, in the opinion of the FERM Graduate Admissions Committee and Department Head, the student's accomplishments indicate high potential for success as a MF candidate. For students with limited preparation, it may be necessary to take remedial courses or to pursue a Post-Baccalaureate degree in Forestry before or concurrent with embarking on the MF degree program. Such determinations are made prior to enrollment in the MF program.

More information helpful to prospective students interested in attaining a degree in Sustainable Forest Management can be found on the SFM Admission Information website.

Graduate Advisory Committee

The Department Head assigns a major professor to each MF student when admitted, generally based on shared areas of interest. The major professor, who must be a member of the OSU Graduate Faculty, serves as the student's primary advisor in developing a program of coursework and in other academic matters. During the student's first term, the major professor will help the student establish an advisory committee. For the MF student, the committee must consist of at least two other members of the Graduate Faculty (in addition to the major professor), including one or more from the College of Forestry. Proposed Emeritus and Courtesy Faculty members must be approved by the Department Head.

Program of Study

The program of study is based on the student's educational background, professional experience, current interests, and future goals. The program is developed, documented, approved, and its progress is monitored by the advisory committee and the Department Head (Academic Unit Chair). The program of study must be filed with the Graduate School within 15 weeks of the final examination, but we encourage it to be filed before completion of 18 graduate credits.

MF Program Time Limit

All coursework, project credit, and examinations for the MF Degree must be completed within a seven-year period. This requirement is strictly enforced by the Graduate School.

Professional Paper

Students must complete a professional paper in order to demonstrate experience in the communication of technical information and in synthesis of relevant material researched from the scientific literature. The topic is decided by the student and their advisory committee. The paper should be of sufficient quality and depth to earn, by unanimous agreement of the advisory committee, a grade of B or better in a 3-6 credit course(s): FE/FOR 506 Project. (*See Outcomes Assessment of Graduate Programs, pg. 50.)*

Final Oral Examination

Given the broad educational objectives of the MF program, the oral examination is intended as a comprehensive evaluation of the candidate's ability to integrate knowledge from their entire program of study. Consideration of the professional paper may catalyze some discussion, but because it is not designed to be a work of original and innovative research, the topic of the paper usually will not dominate the examination. (*See Outcomes Assessment of Graduate Programs, pg. 50.)*

Work Experience

Because practical experience complements academic education, the student is strongly encouraged to work at least one summer in forestry or for a forestry-related organization while earning the MF degree, particularly if such experience was not obtained previously.

Graduate Coursework

Graduate coursework will be structured to meet all applicable regulations of the Graduate School. A total of 45 credit hours of graduate-level courses is required. *Courses taken to meet the minimum educational background may not be used to meet this requirement.* At least 50% of the coursework, including project (FE/FOR 506), must be graduate level only (G). *Per OSU policy, a graduate student who has taken a 4xx course may not normally include the corresponding 5xx course on their graduate program.*

Required Courses

- All graduate students pursuing a Master of Forestry degree within the Sustainable Forest Management graduate program are required to undertake a 8-10 credit core in forest management consisting of:
    1. *Sustainable Forestry Research (4 credits):* A foundation of sustainable forest management research. All students must complete FOR 530 (previously FOR 550)
    2. *Graduate Level Statistics or Econometrics (3 credits):* Graduate level courses in either statistics or econometrics are to be agreed upon by the student's committee. Options may include ST 511, FES 523, or AEC 546
    3. *Ethics in Professional Activities (1-3 credits total):* Your program of study submitted to the Graduate School must declare how you are meeting the university ethics training requirement. FOR 528, Professional Communications and Ethics (2 credits), has been developed for the MF program. Other options accepted by the Graduate School (and FERM) for completing the ethics requirement include (1) GRAD 520, (2) CITI online course, or (3) NSF online course. *You and your committee will decide the most appropriate method for you*
- A 3-6 credit project (FE/FOR 506), leading to a professional paper, that permits the student to pursue an interest in Sustainable Forest Management in their chosen concentration while providing practice in technical communication

Communication Training

Students must participate in FOR 528, Professional Communications and Ethics **and** present on a topic related to their project/professional paper at one professional symposium or conference during their program. The presentation requirement can be satisfied through:

1. Participation in the Western Forestry Graduate Student Symposium (WFGRS) held each Spring term, presenting a poster on their proposed project *or* an oral summary of project results. The FERM Department strongly encourages this option.
2. Presenting posters and papers at professional meetings, other on-campus seminars, or other seminar or presentation options as approved by their committee

Example Programs of Study for MF

Beginning Fall 2017, three professional MF programs with a focus on forest business, geomatics, and silviculture are offered. Example programs are shown on the following pages.

In addition to these three MF programs, the student with their major professor and advisory committee may develop their own general MF program within any SFM area of concentration to match their specific area of interest. If the general program is chosen, the program of study will be developed by the student and the student's advisory committee and may include work in another field (as needed) to prepare the student for the MF project. A program of study must include a minimum of 50% graduate student only level coursework, including project credits (G). Classes where undergraduate seniors are also permitted are designated as (g) or "slash" coursework.

Should the student wish to deviate from the program required core coursework, they must file a course substitution petition with the Curriculum Coordinator.

Forest Business for Private Landowners Focus (MF)

The Forest Business for Private Landowners focus trains students to utilize business techniques to analyze decisions commonly made by private forest landowners to achieve their management objectives. Coursework and faculty expertise focus on areas such as economics, finance, and taxation.

			Credits	Level
SFM Core:				
	FOR 530	Sustainable Forestry Research	4	G
	ST 5XX	Graduate-Level Statistics or Econometrics	3-4	g
	FOR 528	Professional Communications and Ethics Seminar	2	G
Forest Resource Management Coursework:				
	FOR 543	Silvicultural Practices	4	g
	FOR 549	Silvicultural Influences on Forest Eco. Dynamics	3	G
Business Core:				
	BA 513*	Business Legal Environment	3	G
	BA 515*	Managerial Decision Tools	3	G
	BA 517*	Markets & Valuation	3	G
	WSE 553	Forest Products Business	3	g
Forest Resource Policy and Economics (6 credits, pick two courses):				
	FOR 534	Economics of the Forest Resource	3	G
	FOR 561	Forest Policy Analysis	3	G
	AEC 534*	Environmental and Resource Economics	3	G
Example Pool of Supporting Coursework:				
	BA 540*	Corporate Finance	3	G
	BA 561*	Supply Chain Management	3	G
	BA 563	Family Enterprise Governance	4	g
	FIN 542*	Investments	3	G
	FIN 543*	Portfolio Management	4	g
	WSE 561	Intro. To Wood Products Manufacturing	4	g
Other:				
	FOR 506	Project / Professional Paper Communication Training	3	G
		Total	**45+**	

506 course registration numbers (CRNs) must be requested of the Curriculum Coordinator when needed.

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering.*

Spatial Science and Analysis Focus (MF)

The Spatial Science and Analysis focus is for those that wish to study the application of spatial science and tools for natural resources. GIS and remote sensing courses are highlighted in the curriculum, as is a requirement for spatial programming and statistics. Students completing this option should have a solid foundation for careers as analysts and potential managers for spatial operations.

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
ST 5XX	Graduate-Level Statistics or Econometrics	3-4	g
FOR 528	Professional Communications and Ethics Seminar	2	G
GIS and Remote Sensing Core (8 credits):			
FE 544	Forest Remote Sensing & Photogrammetry	4	g
GEOG 560*	GIScience I: Intro to Geographic Information Science	4	G
GEOG 580*	Remote Sensing I: Principles and Applications	4	G
Spatial Programming and Statistics (6+ credits, pick two courses):			
FOR 520	Geospatial Forest Analysis	4	G
FOR 557	Techniques for Forest Resource Analysis	4	g
GEOG 562*	GIScience III: Programming for Geospatial Analysis	4	g
GEOG 565	Spatio-Temporal Variation in Ecology and Earth Sci	4	G
GEOG 566	Advanced Spatial Statistics and GIScience	4	G
Example Pool of Supporting Coursework:			
FE 523	Unmanned Aircraft System Remote Sensing	3	g
FOR 524	Forest Biometrics	3	G
FOR 525	Forest Modeling with Machine Learning	4	G
GEOG 561*	GIScience II: Analysis and Applications	4	G
GEOG 563	GISCience IV: Spatial Modeling	4	g
GEOG 564*	Geospatial Perspectives on Intelligence, Security, and Ethics	3	g
GEOG 581*	Satellite Image Analysis	4	g
Other:			
FE/FOR 506	Project / Professional Paper Communication Training	3	G
	Total	**45+**	

506 course registration numbers (CRNs) must be requested of the Curriculum Coordinator when needed.

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Silviculture, Fire, and Forest Health Focus (MF)

The Silviculture, Fire, and Forest Health focus trains students to manage forest vegetation dynamics and ecosystem processes to achieve a wide range of management objectives. Coursework and faculty expertise concentrate on areas such as silviculture, forest restoration, fire and fuels management, intensive timber production, forest regeneration, and forest ecosystem health.

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
ST 5XX	Graduate-Level Statistics or Econometrics	3-4	g
FOR 528	Professional Communications and Ethics Seminar	2	G
Forest Resource Management Coursework (6+ credits, pick two courses):			
FOR 513	Forest Pathology	3	g
FOR 536	Wildland Fire Science and Management	4	g
FOR 543	Silvicultural Practices	4	g
FOR 549	Silvicultural Influences on Forest Eco. Dynamics	3	G
FES 512	Forest Entomology	3	g
FES/FW 552*	Forest Wildlife Habitat Management	4	G
Ecology and Biology Coursework (3 credits):			
FES 536	Carbon Sequestration in Forests	3	G
FES 540	Wildland Fire Ecology	3	g
BOT 588	Environmental Physiology of Plants	3	g
Inventory and Measurement Coursework (3+ credits, pick one):			
FE 544	Forest Remote Sensing and Photogrammetry	4	g
FOR 524	Forest Biometrics	3	G
GEOG 560*	GIScience I: Intro to Geographic Information Science	4	G
GEOG 561*	GIScience II: Analysis and Applications	4	G
ST 531*	Sampling Methods	3	g
Forest Resource Policy and Economics (3 credits, pick one):			
FOR 531*	Economics and Policy of Forest Wildland Fire	3	g
FOR 534	Economics of the Forest Resource	3	G
FOR 561	Forest Policy Analysis	3	G
Example Pool of Supporting Coursework:			
FE 536	Forest Disturbance Hydrology	3	g
FES 545*	Ecological Restoration	4	g
FES 548*	Invasive Plants: Biology, Ecology, and Management	3	G
BOT 525	Flora of the Pacific Northwest	3	g
RNG 521*	Rangeland Restoration and Management	4	g
Other:			
FOR 506	Project / Professional Paper Communication Training	3	G
	Total	**45+**	

506 course registration numbers (CRNs) must be requested of the Curriculum Coordinator when needed.

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Master of Science (MS)

The Master of Science in Sustainable Forest Management is appropriate for students who want two or more years of formal graduate work and who wish to develop a limited research specialization. Designed primarily for persons pursuing careers in research or teaching, the MS program can be either a terminal degree or the first step toward a doctorate. The program provides an opportunity for independent research to be reported in a formal Master's Thesis. MS students choose from one of six SFM areas of concentration.

Admission to the Program

An applicant for the MS degree must meet requirements of the Graduate School (see OSU Graduate Catalog) in addition to those of the Forest Engineering, Resources and Management Department. An applicant generally must hold a Bachelor's degree in Forestry, Forest Engineering or a related subject area, with preference from an institution accredited by the Society of American Foresters, and should have a high scholastic record (a grade point average of at least 3.0). In some cases, an applicant who does not meet these requirements may be conditionally admitted when, in the opinion of the FERM Graduate Admissions Committee and Department Head, the student's accomplishments indicate high potential for success as an MS candidate.

More information helpful to prospective students interested in attaining a degree in Sustainable Forest Management can be found on the SFM Admission Information website.

Graduate Advisory Committee

A major professor will be assigned by the Department Head to each student when admitted. The major professor serves as the student's primary advisor in developing a program of study, in selecting a research/thesis topic, and in other academic matters. Additionally, the major professor typically provides some or all of the funding for the research. An advisory committee will be selected jointly by the student and the major professor. It will consist of a minimum four members: two members of the OSU Graduate Faculty from the student's department (one being the student's major professor), one member of the Graduate Faculty from each declared minor department (if applicable) or one member of the Graduate Faculty from outside the College of Forestry, and a Graduate Council Representative (GCR). Proposed Emeritus and Courtesy Faculty members must be approved by the Department Head.

Students must select a GCR from the list generated by the online GCR list generation tool. After the student has identified a representative, the selection must be submitted to the Graduate School using the online form.

MS Program Time Limit

All coursework, thesis credit, and examinations for the MS degree must be completed within a seven-year period. This requirement is strictly enforced by the Graduate School.

Thesis, Language Requirement, and Final Examination

The Graduate School prescribes the form of the thesis, as well as the timing and nature of the final oral examination. The MS program has no foreign language requirement, unless the student's advisory committee stipulates otherwise. *(See Outcomes Assessment of Graduate Programs, pg. 50.)*

Graduate Coursework and Program of Study

Before completing 18 hours of graduate credits, usually before the end of their second term of residence, the student must select an area of concentration, develop a program of study, and submit the program to their graduate advisory committee and the Unit Chair for approval. Each area of concentration has background requirements that must be completed, either with acceptable courses taken for a prior degree or with additional courses while enrolled as an MS candidate at OSU. A total of 45 graduate credit hours (500 level or greater) are required to complete the MS degree. *Courses taken to meet the minimum educational background may not be used to meet this requirement.*

The program of study must be filed with the Graduate School within 15 weeks of the final examination, but we encourage it to be filed before completion of 18 graduate credits. *Per OSU policy, a graduate student who has taken a 4xx course may not normally include the corresponding 5xx course on their graduate program.*

Required Courses

- All graduate students pursuing a Master of Science degree in any concentration within the Sustainable Forest Management graduate program are required to undertake a 13-credit core in forest management and research methods consisting of:
    1. *Sustainable Forestry Research (4 credits):* A foundation of sustainable forest management research. All students must complete FOR 530 (previously FOR 550)
    2. *Graduate-Level Statistics or Econometrics (6-8 credits total):* Graduate level courses in either statistics or econometrics should be agreed upon by the student's committee and approved by the Program Chair. Depending on area of concentration, options may include ST 511 and ST 512, ST 521 and ST 522, AEC 546 and AEC 525 or FES 523
    3. *Critical Thinking and Research Methods (3 credits):* Lectures and seminars in research philosophies and methods with special emphasis on applied research, and conduct of scholarly or professional activities in an ethical manner. Options may include FES 520, FES 522, or GRAD 520
    4. *Ethics in Professional Activities (1-3 credits total):* Your program of study submitted to the Graduate School must declare how you are meeting the university ethics training requirement. The Graduate School (and FERM) is accepting several methods of completing the ethics requirement including completion of (1) GRAD 520, (2) FES 522, (3) CITI online course, or (4) NSF online course. *You and your committee can decide the most appropriate method for you*
- Up to three required courses (6-11 credits) from the concentration the student has chosen
- A 6-12 credit thesis (FE/FOR 503) with their major professor.

Should the student wish to deviate from the program required core coursework, they must file a course substitution petition with the Curriculum Coordinator.

Communication Training

Students must participate in one symposium during the first year of their program to present their thesis proposal and must also participate in one graduate seminar at the end of their program to present their thesis results. These **two** presentation requirements can be satisfied through:

1. Participation in the Western Forestry Graduate Student Symposium (WFGRS) held each Spring term, presenting a poster on the student's thesis topic in the first year **and** a oral summary treating thesis research results in the last year. The FERM Department strongly encourages this option.
2. Presenting posters and papers at professional meetings, other on-campus seminars, or other seminar or presentation options as approved by their committee
3. *If offered, a one-credit seminar prep course (FOR/FES/WSE 507) may fulfill one of these two presentations*

Example Programs of Study for MS

The specific program will be developed by the student and the student's advisory committee and may include work in other fields (as needed) to prepare the student for the MS thesis. A program of study must include a minimum of 50% graduate student only level coursework, including thesis (G). Classes where undergraduate seniors are also permitted are designated (g) or "slash" coursework. Example programs for the six areas of concentration are shown on the following pages.

Forest Operations Planning and Management (MS)

An example of a program for an MS in Forest Operations Planning and Management might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses:			
FE 555	Forest Supply Chain Management	3	G
FOR 557	Techniques for Forest Resource Analysis	4	g
Example Pool of Supporting Coursework:			
FE 523	Unmanned Aircraft System Remote Sensing	3	g
FE 540	Forest Operations Analysis	4	g
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FE 571	Harvesting Management	3	g
FOR 520	Geospatial Forest Analysis	4	G
FOR 561	Forest Policy Analysis	3	G
FES 536*	Carbon Sequestration in Forests	3	G
FES 552*	Forest Wildlife Habitat Management	4	G
FES 555*	Urban Forest Planning, Policy & Management	4	g
FES 586*	Public Lands Policy & Management	3	g
GEOG 560*	GIScience I: Intro to Geographic Information Science	4	G
IE 515	Simulation & Decision Support Systems	4	g
IE 521	Industrial Systems Optimization I	3	G
IE 545	Human Factors Engineering	4	G
H 594*	Applied Ergonomics	3	g
Other Required:			
FE 503	Thesis	6-12	G
FE XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Policy Analysis and Economics (MS)

An example of a program for an MS in Forest Policy Analysis and Economics, with a policy question in wildland fire management, might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
FES 522	Research Methods Social Science	4	g
and			
ST 511/512	Methods of Data Analysis I & II	8	g
or			
AEC 546	Introduction to Applied Econometrics	4	g
AEC 525	Applied Econometrics	4	G
Required Concentration Courses (6+ credits, pick two courses):			
FOR 531*	Economics and Policy of Forest Wildland Fire	3	g
FOR 534	Economics of the Forest Resource	3	G
FOR 561	Forest Policy Analysis	3	G
AEC 532*	Environmental Law	4	g
AEC 550	Environmental and Natural Resource Economics	4	G
Example Pool of Supporting Coursework:			
FOR 536	Wildland Fire Science and Management	4	g
FOR 543	Silvicultural Practices	5	g
FOR 549	Silvicultural Influences on Forest Eco. Dynamics	3	G
FOR 557	Techniques for Forest Resource Analysis	4	g
FES 585*	Consensus and Natural Resources	3	g
AEC 512	Microeconomic Theory	4	G
ANTH 591	Ethnographic Methods	4	G
ANTH 593	Statistical Applications in Anthropology	4	G
GEOG 512	Social-Ecological Systems	3	G
GEOG 551*	Planning Principles & Practices for Resilient Comms	4	g
GEOG 560*	GIScience I: Intro to Geographic Information Science	4	G
WSE 553	Forest Products Business	3	g
WSE 561	Intro. To Wood Products Manufacturing	4	g
Other Required:			
FOR 503	Thesis	6-12	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Biometrics and Geomatics (MS)

An example of a program for an MS in Forest ***Biometrics*** might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 521	Introduction to Mathematical Statistics I	4	g
ST 522	Introduction to Mathematical Statistics II	4	g
Required Concentration Courses (6+ credits, pick two courses):			
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FOR 524	Forest Biometrics	3	G
FOR 525	Forest Modeling with Machine Learning	4	G
Example Pool of Supporting Coursework:			
FOR 520	Geospatial Forest Analysis	4	G
FOR 549	Silvicultural Influences on Forest Eco. Dynamics	3	G
FES 524	Natural Resources Data Analysis	4	G
FES 527*	Forest Carbon Analysis for Assess. & Policy Agree.	3	G
FES 536*	Carbon Sequestration in Forests	3	G
BOT 588	Environmental Physiology of Plants	3	g
GEOG 562*	GIScience III: Programming for Geospatial Analysis	4	g
GEOG 565	Spatio-Temporal Variation in Ecology & Earth Sci	4	G
GEOG 566	Advance Spatial Statistics and GIS Science	4	G
ST 531*	Sampling Methods	3	g
ST 541	Probability, Computing, & Simulation in Statistics	4	G
ST 551	Statistical Methods I	4	G
ST 552	Statistical Methods II	4	G
ST 553	Statistical Methods III	4	G
ST 565	Time Series	3	G
Other Required:			
FOR 503	Thesis	6-12	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Biometrics and Geomatics (MS) cont.

An example of a program for an MS is Forest ***Geomatics*** might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses (6+ credits, pick two courses):			
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FOR 520	Geospatial Forest Analysis	4	G
FOR 524	Forest Biometrics	3	G
GEOG 560*	GIScience I: Intro to GIS	4	G
GEOG 561*	GIScience II: Analysis and Applications	4	G
Example Pool of Supporting Coursework:			
FE 515	Forest Road Engineering	4	g
FE 523	Unmanned Aircraft System Remote Sensing	3	g
FE 532	Forest Hydrology	4	G
FOR 525	Forest Modeling with Machine Learning	4	G
FOR 536	Wildland Fire Science and Management	4	g
CE 513	GIS in Water Resources	3	g
CE 562	Digital Terrain Modeling	4	G
GEOG 562*	GIScience III: Programming for Geospatial Analysis	4	g
GEOG 565	Spatio-Temporal Variation in Ecology & Earth Sci	4	G
GEOG 566	Advance Spatial Statistics and GIS Science	4	G
GEOG 580*	Remote Sensing I: Principles and Applications	4	G
GEOG 581*	Satellite Image Analysis	4	g
ST 513	Methods of Data Analysis III	4	g
Other Required:			
FE/FOR 503	Thesis	6-12	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Silviculture, Fire, Forest Health, and Biodiversity (MS)

An example of a program for an MS in Silviculture, Fire, Forest Health, and Biodiversity might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Course (6+ credits, minimum of two courses):			
FOR 513	Forest Pathology *OR*	3	g
	BOT 561: Mycology	4	g
FOR 536	Wildland Fire Science and Management	4	g
FOR 549	Silvicultural Influences on Forest Eco. Dynamics *OR*	3	G
	FOR 543: Silvicultural Practices	5	g
FES 512	Forest Entomology	3	g
FES 542	Wildlife Landscape Ecology	3	G
Example Pool of Supporting Coursework:			
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FOR 526	3-PG Forest Growth Model	2	G
FOR 531*	Economics & Policy of Forest Wildland Fire	3	g
FOR 542	International Intensive Silviculture	2	G
FOR 552	Prescribed Fire Practicum	3	g
FOR 561	Forest Policy Analysis	3	G
FES 524	Natural Resources Data Analysis	4	G
FES 536	Carbon Sequestration in Forests	3	G
FES 540	Wildland Fire Ecology	3	g
FES 545*	Ecological Restoration	4	g
FES 548*	Biology of Invasive Plants	3	G
FES 552*	Forest Wildlife Habitat Management	4	G
FES 577	Agroforestry	3	g
BOT 551	Plant Pathology	4	g
BOT 588	Environmental Physiology of Plants	3	g
CE 512	Hydrology	4	g
CROP 540*	Weed Management	4	g
GEOG 565	Spatio-Temporal Variation in Ecology & Earth Sci	4	G
RNG 557	Habitat Analysis 1: Habitat Use and Movement	3	g
ST 531*	Sampling Methods	3	g
Other Required:			
FE/FOR 503	Thesis	6-12	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Soil and Watershed Processes (MS)

An example of a program for an MS in Forest Soil and Watershed Processes might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses (11 credits, pick three courses):			
FE 530*	Watershed Processes	4	g
FE 536	Forest Disturbance Hydrology	4	g
SOIL 523	Principles of Stable Isotopes	3	G
SOIL 535	Soil Physics	3	G
Example Pool of Supporting Coursework:			
FE 536	Watershed Impacts of Forest Disturbance	4	G
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FE 545	Fluvial Geomorphology	4	G
BEE 512*	Physical Hydrology	3	G
BEE 542	Vadose Zone Transport	4	G
BEE 546	River Engineering	4	g
CE 513	GIS in Water Resources	3	g
CE 516	Stormwater Design & Management	4	G
CE 544	Open Channel Flow	3	G
CE 547	WRE I: Principles of Fluid Mechanics	4	G
FES 524	Natural Resources Analysis and Application	4	G
GEOG 596	Field Research in Geomorphology & Landscape Eco	3	G
SOIL 525	Mineral Organic Matter Interactions	3	G
SOIL 545*	Environmental Soil Chemistry	3	g
SOIL 566	Soil Morphology and Classification	4	g
Other Required:			
FE/FOR 503	Thesis	6-12	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Engineering for Sustainable Forestry (MS)

An example of a program for an MS in Engineering for Sustainable Forestry might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses:			
FE 516	Forest Road System Management	4	g
FE 532	Forest Hydrology	4	G
Example Pool of Supporting Coursework:			
FE 515	Forest Road Engineering	3	g
FE 530	Watershed Processes	4	g
FE 536	Forest Disturbance Hydrology	4	g
FE 540	Forest Operations Analysis	4	g
FE 570	Logging Mechanics	4	g
FE 571	Harvesting Management	3	g
FOR 561	Forest Policy Analysis	3	G
CE 547	WRE I: Principles of Fluid Mechanics	4	G
CE 579	Slope and Embankment Design	3	g
GEOG 560*	GIScience I: Intro to GIS	4	G
GEOG 561*	GIScience II: Analysis and Applications	4	G
Other Required:			
FE 503	Thesis	6-12	G
FE XXX	Seminar – *see Communication Training*		
	Total	**45+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Doctor of Philosophy (PhD)

The doctoral program in Sustainable Forest Management is intended for persons seeking careers in teaching and/or research. The program emphasizes strong research specialization while maintaining an understanding and appreciation of broader management and resource-use issues. The dissertation and associated research play a dual role by enabling the student to develop in-depth knowledge of specific technical areas, while at the same time gaining experience in conceptualizing, planning, conducting, and reporting a major research project. PhD students choose from one of the six SFM areas of concentration.

Admission to the Program

Applicants for the PhD degree must meet requirements of the Graduate School (see OSU Graduate Catalog), in addition to those of the Forest Engineering, Resources and Management Department. An applicant generally must hold a Bachelor's degree in Forestry or a related area, with preference from an institution accredited by the Society of American Foresters, and should have a high scholastic record (a grade point average of 3.00 or higher). Students are encouraged to complete a Master's degree before entering the program, though it is not required for admittance. In rare cases, an applicant who does not meet these requirements may be admitted conditionally when, in the opinion of the FERM Graduate Admissions Committee and Department Head, her or his accomplishments indicate high potential for success as a PhD candidate.

More information helpful to prospective students interested in attaining a degree in Sustainable Forest Management can be found on the SFM Admission Information website.

Minimum Education Background

Each student must demonstrate competence in broad areas of forestry knowledge through the completion of appropriate coursework for a prior degree or while in Residence at OSU, as determined by her/his advisory committee. The background courses may be different for each field of concentration.

Competence

In addition, each student's program will be designed to ensure competence in the following areas:

1. Coursework and examinations in the field(s) of concentration,
2. Research methods,
3. Teaching methods.

PhD Program Time Limit

All coursework, thesis credit, and examinations for the PhD degree must be completed within a nine-year period. This requirement is strictly enforced. An extension of this time limit may be requested by submitting a petition to the Graduate School.

Dissertation and Language Requirement

The Graduate School prescribes the form of the dissertation, as well as the timing and nature of the final oral examination. The PhD program has no foreign language requirement, unless the student's advisory committee stipulates otherwise.

Graduate Advisory Committee

As soon as possible after the student's arrival at OSU, and certainly within one year, a graduate advisory committee is selected by the major professor and student. It will consist of a total of five members: at least two members of the Graduate Faculty from the student's department (one being the student's major professor), one member of the Graduate Faculty from each declared minor department (if applicable), and a Graduate Council Representative (GCR). *The Department Head is a de facto member of all doctoral committees, identified as the Academic Unit Chair*. Students can select a GCR from the list generated by the online GCR list generation tool. After the student has identified a representative, the list must be returned to the Graduate School, indicating the faculty member serving in the GCR role. Proposed Emeritus and Courtesy Faculty members must be approved by the Department Head.

Graduate Coursework and Program of Study

Before completing 18 hours of graduate credits, usually before the end of their second term of residence, the student must select an area of concentration, develop a program of study, and submit the program to her/his graduate advisory committee and the Unit Chair for approval. The program of study must be submitted to the Graduate School by the end of term five and prior to scheduling the preliminary written examination.

Each area of concentration has background requirements that must be completed, either with acceptable courses taken for a prior degree, or with additional courses while enrolled as a PhD candidate at OSU. A total of 108 graduate credit hours (500 level or greater) are required to complete the PhD degree. While transfer credits from a Master's institution are permissible on the PhD program of study form, the cumulative equivalent of one full-time academic year of regular OSU non-blanket coursework (defined as 36 credits) must be included in a doctoral program. *Courses taken to meet the minimum educational background may not be used to meet this requirement. Per OSU policy, a graduate student who has taken a 4xx course may not normally include the corresponding 5xx course on their graduate program.*

More information regarding the PhD qualifying examination for advancement to candidacy can be found on pg. 44.

Required Courses

- All graduate students pursuing a Doctor of Philosophy degree in any concentration within the Sustainable Forest Management graduate program are required to undertake a 13-credit core in forest management and research methods consisting of:
    1. *Sustainable Forestry Research (4 credits):* A foundation of sustainable forest management research. All students must complete FOR 530 (previously FOR 550)
    2. *Graduate Level Statistics or Econometrics (6-8 credits):* Graduate level courses in either statistics or econometrics to be agreed upon by the student's committee and approved by the Program Chair. Depending on area of concentration, options may include ST 511 and ST 512, ST 521 and ST 522, or AEC 546 and AEC 525, AEC 625, or FES 523
    3. *Critical Thinking and Research Methods (3 credits):* Lectures and seminars in research philosophies and methods with special emphasis on applied research; and conduct of scholarly or professional activities in an ethical manner. Options may include FES 520, FES 522, or GRAD 520

4. *Ethics in Professional Activities (1-3 credits total):* Your program of study submitted to the Graduate School must declare how you are meeting the university ethics training requirement. The Graduate School (and FERM) is accepting several methods of completing the ethics requirement including completion of (1) GRAD 520, (2) FES 522, (3) CITI online course, or (4) NSF online course. *You and your committee can decide the most appropriate method for you*

- Up to three required courses (6-11 credits) from the concentration the student has chosen
- A minimum of 36 credits of dissertation (FE/FOR 603) with their major professor

Should the student wish to deviate from the program required core coursework, they must file a course substitution petition with the Curriculum Coordinator.

Communication Training

Students must participate in one symposium during the first or second year of their program to present their dissertation proposal and must also participate in at least one graduate seminar at the end of their program to present their dissertation results. These **two** presentation requirements can be satisfied by:

1. Participation in the Western Forestry Graduate Student Symposium (WFGRS) held each Spring term, presenting a poster on the student's dissertation topic in the first/second year **and** an oral summary of dissertation research results in the last year. The FERM Department strongly encourages this option.
2. Presenting posters and papers at professional meetings, other on-campus seminars, or other seminar or presentation options as approved by their committee
3. *If offered, a one-credit seminar prep course (FOR/FES/WSE 507) may fulfill one of these two presentations*

Example Programs of Study for PhD

The specific program will be developed by the student and the student's advisory committee and may include work in another field (as needed) to prepare the student for the PhD dissertation. A program of study must include a minimum of 50% graduate student only level coursework, including thesis credits (G). Classes where undergraduate seniors are also permitted are designated as (g) or "slash" coursework. Courses taken during an MS program can transfer or substitute for core or supporting courses pending graduate committee and AoC lead approval. Example programs for the six areas of concentration are shown on the following pages.

Forest Operations Planning and Management (PhD)

An example of a program for a PhD in Forest Operations Planning and Management might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses:			
FE 555	Forest Supply Chain Management	3	G
FOR 557	Techniques for Forest Resource Analysis	4	g
Example Pool of Supporting Coursework:			
FE 523	Unmanned Aircraft System Remote Sensing	3	g
FE 540	Forest Operations Analysis	4	g
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FOR 520	Geospatial Forest Analysis	4	G
FOR 524	Forest Biometrics	3	G
FOR 561	Forest Policy Analysis	3	G
FES 536*	Carbon Sequestration in Forests	3	G
FES 552*	Forest Wildlife Habitat Management	4	G
FES 586*	Public Lands Policy & Management	3	g
BA 562	Managing Projects	3	G
BA 550	Organization Leadership and Management	3	G
GEOG 560*	GIScience I: Intro to Geographic Information Science	4	G
IE 515	Simulation & Decision Support Systems	4	g
IE 521	Industrial Systems Optimization I	3	G
IE 522	Industrial Systems Optimization II	3	G
IE 545	Human Factors Engineering	4	G
IE 563	Advanced Production Planning and Control	3	G
H 594*	Applied Ergonomics	3	g
ST 521	Introduction to Mathematical Statistics I	4	g
ST 522	Introduction to Mathematical Statistics II	4	g
ST 551	Statistical Methods I	4	G
ST 552	Statistical Methods II	4	G
Other Required:			
FE 603	Dissertation	36+	G
FE XXX	Seminar – *see Communication Training*		
	Total	**108+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Policy Analysis and Economics (PhD)

An example of a program for a PhD in Forest Policy Analysis and Economics might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
FES 522	Research Methods Social Science	4	g
and			
ST 511/512	Methods of Data Analysis I & II	8	g
or	**(Pick two courses, 8 credits):**		
AEC 546	Introduction to Applied Econometrics	4	g
AEC 525	Applied Econometrics	4	G
AEC 625	Advanced Econometrics I	4	G
Required Concentration Courses (6+ credits, pick two courses):			
FOR 531*	Economics and Policy of Forest Wildland Fire	3	g
FOR 534	Economics of the Forest Resource	3	G
FOR 561	Forest Policy Analysis	3	G
AEC 532*	Environmental Law	4	g
AEC 550	Environmental and Natural Resource Economics	4	G
Example Pool of Supporting Coursework:			
FOR 536	Wildland Fire Science Management	4	g
FOR 543	Silvicultural Practices	5	g
FOR 549	Silvicultural Influences on Forest Eco. Dynamics	3	G
FOR 557	Techniques for Forest Resource Analysis	4	g
AEC 512	Microeconomic Theory I	4	G
AEC 525	Applied Econometrics	4	G
AEC 546	Introduction to Applied Econometrics	4	g
AEC 611	Advanced Microeconomic Theory I	4	G
AEC 625	Advanced Econometrics I	4	G
FES 585*	Consensus and Natural Resources	3	g
GEOG 512	Social-Ecological Systems	3	G
GEOG 560*	GIScience I: Intro to Geographic Information Science	4	G
WSE 553	Forest Products Business	3	g
Other Required:			
FOR 603	Dissertation	36+	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**108+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Biometrics and Geomatics (PhD)

An example of a program for a PhD in Forest ***Biometrics*** might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 521	Introduction to Mathematical Statistics I	4	g
ST 522	Introduction to Mathematical Statistics II	4	g
Required Concentration Courses (6+ credits, pick two courses):			
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FOR 524	Forest Biometrics	3	G
FOR 525	Forest Modeling with Machine Learning	4	G
Example Pool of Supporting Coursework:			
FOR 520	Geospatial Forest Analysis	4	G
FOR 549	Silvicultural Influences on Forest Eco. Dynamics	3	G
FOR 561	Forest Policy Analysis	3	G
BOT 588	Environmental Physiology of Plants	3	g
FES 524	Natural Resources Data Analysis	4	G
GEOG 562*	GIScience III: Programming for Geospatial Analysis	4	g
GEOG 565	Spatio-Temporal Variation in Ecology & Earth Sci	4	G
GEOG 566	Advance Spatial Statistics and GIS Science	4	G
ST 525*	Applied Survival Analysis	3	G
ST 541	Probability, Computing, & Simulation in Statistics	4	G
ST 551	Statistical Methods I	4	G
ST 552	Statistical Methods II	4	G
ST 553	Statistical Methods III	4	G
ST 555	Advanced Experimental Design	3	G
ST 557	Applied Multivariate Analysis	3	G
ST 561	Theory of Statistics I	3	G
ST 562	Theory of Statistics II	3	G
ST 563	Theory of Statistics III	3	G
ST 565	Time Series	3	G
ST 567	Spatial Statistics	3	G
ST 623	Generalized Regression Models I	3	G
ST 625	Survival Analysis	3	G
Other Required:			
FOR 603	Dissertation	36+	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**108+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Biometrics and Geomatics (PhD) cont.

An example of a program for a PhD in Forest ***Geomatics*** might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses (6+ credits, pick two courses):			
FE 544	Forest Remote Sensing and Photogrammetry	4	g
FOR 520	Geospatial Forest Analysis	4	G
FOR 524	Forest Biometrics	3	G
GEOG 561*	GIScience II: Analysis and Applications	4	G
Example Pool of Supporting Coursework:			
FE 515	Forest Road Engineering	4	g
FE 523	Unmanned Aircraft System Remote Sensing	3	g
FE 532	Forest Hydrology	4	G
FOR 525	Forest Modeling with Machine Learning	4	G
FOR 536	Wildland Fire Science and Management	4	g
CE 513	GIS in Water Resources	3	g
CE 561	Photogrammetry	3	g
CE 562	Digital Terrain Modeling	4	g
CE 564	Global Navigation Satellite System	4	G
CE 566	3D Laser Scanning and Imaging	4	G
CS 553	Scientific Visualization	4	G
GEOG 562*	GIScience III: Programming for Geospatial Analysis	4	G
GEOG 565	Spatio-Temporal Variation in Ecology & Earth Sci	4	G
GEOG 580*	Remote Sensing I: Principles and Applications	4	G
GEOG 581*	Satellite Image Analysis	4	g
ST 513	Methods of Data Analysis III	4	g
ST 565	Time Series	3	G
Other Required:			
FE/FOR 603	Dissertation	36+	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**108+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Silviculture, Fire, Forest Health, and Biodiversity (PhD)

An example of a program for a PhD in Silviculture, Fire, Forest Health, and Biodiversity might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 551	Statistical Methods I	4	G
ST 552	Statistical Methods II	4	G
Required Concentration Course (6+ credits, minimum of two courses):			
FOR 536	Wildland Fire Science and Management	4	g
FES 512	Forest Entomology	3	g
FES 542	Wildlife Landscape Ecology	3	G
FOR 513	Forest Pathology *OR*	3	g
	BOT 561: Mycology	4	g
FOR 549	Silvicultural Influences on Forest Eco. Dynamics *OR*	3	G
	FOR 543: Silvicultural Practices	5	g
Example Pool of Supporting Coursework:			
FE 544	Forest Remote Sensing and Photogrammetry	4	g
FOR 526	3-PG Forest Growth Model	2	G
FOR 531*	Economics & Policy of Forest Wildland Fire	3	g
FOR 542	International Intensive Silviculture	2	G
FOR 552	Prescribed Fire Practicum	3	g
FOR 561	Forest Policy Analysis	3	G
FES 524	Natural Resources Data Analysis	4	G
FES 536	Carbon Sequestration in Forests	3	G
FES 540	Wildland Fire Ecology	3	g
FES 545*	Ecological Restoration	4	g
FES 548*	Biology of Invasive Plants	3	G
FES 552*	Forest Wildlife Habitat Management	4	G
FES 577	Agroforestry	3	g
BOT 551	Plant Pathology	4	g
BOT 588	Environmental Physiology of Plants	3	g
CE 512	Hydrology	4	g
CROP 540*	Weed Management	4	g
GEOG 565	Spatio-Temporal Variation in Ecology & Earth Sci	4	G
RNG 557	Habitat Analysis 1: Habitat Use and Movement	3	g
ST 531*	Sampling Methods	3	g
Other Required:			
FE/FOR 603	Dissertation	36+	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**108+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Forest Soil and Watershed Processes (PhD)

An example of a program for a PhD in Forest Soil and Watershed Processes might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Course (11 credits, pick three courses):			
FE 530*	Watershed Processes	4	g
FE 536	Forest Disturbance Hydrology	4	g
SOIL 523	Principles of Stable Isotopes	3	G
SOIL 535	Soil Physics	3	G
Example Pool of Supporting Coursework:			
FE 536	Watershed Impacts of Forest Disturbance	4	G
FE 544	Forest Remote Sensing & Photogrammetry	4	g
FE 545	Fluvial Geomorphology	4	G
FES 524	Natural Resource Data Analysis	4	G
FES 545*	Ecological Restoration	4	g
BEE 512*	Physical Hydrology	3	G
BEE 542	Vadose Zone Transport	4	G
BEE 546	River Engineering	4	g
BEE 549	Regional Hydrologic Modeling	3	G
CE 513	GIS in Water Resources	3	g
CE 544	Open Channel Flow	3	G
CE 547	WRE I: Principles of Fluid Mechanics	4	G
FW 556*	Freshwater Ecology and Conservation	5	g
GEOG 596	Field Research in Geomorphology & Landscape Eco	3	G
SOIL 525	Mineral Organic Matter Interactions	3	G
SOIL 545*	Environmental Soil Chemistry	3	g
SOIL 566	Soil Morphology and Classification	4	g
ST 513	Methods for Data Analysis III	4	g
ST 515*	Design and Analysis of Planned Experiments	3	g
Other Required:			
FE/FOR 603	Dissertation	36+	G
FOR XXX	Seminar – *see Communication Training*		
	Total	**108+**	

**Course may be offered as on campus section or as Ecampus only. Ecampus credits carry higher tuition cost and should be discussed with major professor before registering*

Engineering for Sustainable Forestry (PhD)

An example of a program for a PhD in Engineering for Sustainable Forestry might look like:

		Credits	Level
SFM Core:			
FOR 530	Sustainable Forestry Research	4	G
GRAD 520	Responsible Conduct of Research	2	G
ST 511	Methods for Data Analysis I	4	g
ST 512	Methods for Data Analysis II	4	g
Required Concentration Courses:			
FE 516	Forest Road System Management	4	g
FE 532	Forest Hydrology	4	G
Example Pool of Supporting Coursework:			
FE 515	Forest Road Engineering	3	g
FE 530	Watershed Processes	4	g
FE 536	Forest Disturbance Hydrology	4	g
FE 540	Forest Operations Analysis	4	g
FE 570	Logging Mechanics	4	g
FE 571	Harvesting Management	3	g
FOR 534	Economics of the Forest Resource	3	G
FOR 561	Forest Policy Analysis	3	G
CE 579	Slope and Embankment Design	3	g
IE 521	Industrial Systems Optimization I	3	G
IE 522	Industrial Systems Optimization II	3	G
IE 545	Human Factors Engineering	4	G
Other Required:			
FE 603	Dissertation	36+	G
FE XXX	Seminar – *see Communication Training*		
	Total	**108+**	

PhD Qualifying Examination for Advancement to Candidacy

Written Preliminary Examination

Successful completion of a written preliminary examination is a prerequisite to the oral comprehensive examination. The written examination will consist of questions in each field of specialization and may include additional questions that the student's committee deem appropriate. The examination must provide a comprehensive assessment of the student's competence in both the theory and research methods appropriate to the dissertation area and fields of specialization elected within that area. *(See Outcomes Assessment of Graduate Programs, pg. 52.)*

The written exam contains questions submitted and evaluated by the candidate's committee. The major professor coordinates the testing. It is scheduled by the student's committee near the completion of courses and is intended to test the student's preparation to do graduate research and to determine the extent of the student's knowledge in the major and minor subject areas. The topics should be integrative in nature, requiring the student to demonstrate the ability to apply principles to current problems. Additional questions can be solicited from other faculty to completely cover the topics in the candidate's program.

Oral Comprehensive Examination

The oral comprehensive examination should cover the same area as the written examination, the prospective dissertation research, and other topics relevant to the student's preparation. The oral examination will be scheduled as soon as possible, after the successful completion of the written examination and is coordinated through the Graduate School. In all deliberations and decisions regarding the oral examination, the current rules of the Graduate School will apply. Upon successful completion of the oral examination, the student is advanced to "candidacy" for the doctorate. *(See Outcomes Assessment of Graduate Programs, pg. 52.)*

Final Oral Examination

The candidate is ready to defend their dissertation once all dissertation components are successfully completed and have been reviewed by the major professor. The draft dissertation is distributed to the committee no less than two weeks prior to the final oral examination, which is scheduled through the Graduate School. In all deliberations and decisions regarding the final examination, the current rules of the Graduate School will apply. Upon successful completion of the final oral examination, the candidate is certified for award of the PhD degree. *(See Outcomes Assessment of Graduate Programs, pg. 52.)*

Program of Study Form

Program of Study (MF, MS, PhD)
The program of study is a digital form that outlines the student's course plan for meeting the coursework degree requirements (45-credit for Masters, 108-credits for PhD). The digital program of study is accessible from the Graduate School's website: https://gradschool.oregonstate.edu/forms. *When logging in, students will be asked to use the OSU Login button.*

Once logged into the system, students must select their major (Sustainable Forest Management), as well as their degree level (MF, MS, or PhD), and their program start date (typically their first date of enrollment). The webpage is divided into the following program of study specific sections: Program Information*, Checklist, Courses, Committee, and Additional Requirements. Included in each of these sections are informational videos accessed via the orange 'Help' links in the upper right corner. Students and faculty are encouraged to use these Help videos if unsure of how to proceed. Students may also consult the FERM Curriculum Coordinator for assistance.

*MF students must click the 'Capstone' button to generate a coursework column for Project credits (FE/FOR 506).

Once the Checklist section reflects only green checkmarks, the student will be able to 'Finalize' their program of study. *Students should use the 'Preview' section to review the draft with their major professor and advisory committee.* The system will ask the student if they are sure they want to 'Finalize' the form. *When the 'Finalize' button is selected, the system auto-routes the form to the student for electronic signature in DocuSign.* The form then routes to the FERM Curriculum Coordinator for audit and verification. If denied, the Curriculum Coordinator will provide notes for edit and ask the student to resubmit when fixed. If approved, the form will move forward to the advisory committee and Unit Chair for signatures. Once all signatures have been received, the form will receive its final audit by Graduate School staff. A final approved copy will be provided to the student and Curriculum Coordinator when available.

Students and members of their advisory committee are encouraged to attend 'Graduate Information Sessions' hosted each academic year by the College of Forestry Graduate Program Coordinators. Students and faculty are notified of these sessions by email prior to each session, but may contact a department program coordinator for specific dates.

Note for student Veterans: Students receiving Veterans Assistance (VA) benefits may be required to submit the program of study within the **first term** of enrollment to maintain VA benefit eligibility. Visit the Military and Veteran Resource Center's website for additional information.

Course Scheduling

Below is a compilation of all courses listed in the Sustainable Forest Management Advising Guide and the quarter in which they are typically offered. *Some courses at Oregon State University are offered on alternate years or via Ecampus instruction (Ecampus marked with an *).* To find a complete list of courses offered by Oregon State University, visit the online General Catalog.

College of Forestry

Course Number and Title		Term Offered
FE 515	Forest Road Engineering	Winter
FE 516	Forest Road System Management	Spring
FE 523	Unmanned Aircraft System Remote Sensing	Fall
FE 530*	Watershed Processes	F / W – Alt YR
FE 532	Forest Hydrology	TBD
FE 536	Watershed Impacts of Forest Disturbance	Winter
FE 540	Forest Operations Analysis	Winter
FE 544	Forest Remote Sensing & Photogrammetry	Fall
FE 545	Fluvial Geomorphology	Winter – Alt YR
FE 555	Forest Supply Chain Management	Spring – Alt YR
FE 570	Logging Mechanics	Winter
FE 571	Harvesting Management	Spring
FOR 508	Principles of Wildland Firefighting	Spring
FOR 513	Forest Pathology	Winter
FOR 520	Geospatial Forest Analysis	Winter – Alt YR
FOR 524	Forest Biometrics	Winter – Alt YR
FOR 525	Forest Modeling with Machine Learning	Winter – Alt YR
FOR 526	3-PG Forest Growth Model	Fall – Alt YR
FOR 528	Professional Communications and Ethics	Winter
FOR 530	Sustainable Forestry Research	Fall
FOR 531*	Economics and Policy of Forest Wildland Fire	Spring
FOR 534	Economics of the Forest Resource	Spring – Alt YR
FOR 536	Wildland Fire Science and Management	Fall
FOR 542	International Intensive Silviculture	Fall – Alt YR
FOR 543	Silvicultural Practices	Spring
FOR 549	Silvicultural Influences on Forest Eco. Dynamics	Fall
FOR 552	Prescribed Fire Practicum	Fall
FOR 557	Techniques for Forest Resource Analysis	Fall
FOR 561	Forest Policy Analysis	Winter – Alt YR

Additional College of Forestry course offerings from the Departments of Forest Ecosystems and Society and Wood Science and Engineering, as well as other OSU Colleges, are listed on the following pages.

College of Forestry cont.

Course Number and Title		Term Offered
FES 512	Forest Entomology	Spring
FES 522	Research Methods Social Science	Winter
FES 523	Quantitative Analysis in Social Science	Fall
FES 524	Natural Resources Data Analysis	Winter
FES 527*	Forest Carbon Analysis for Assess. & Policy Agree.	Spring
FES 536*	Carbon Sequestration in Forests	Winter
FES 540	Wildland Fire Ecology	Winter
FES 542	Wildlife Landscape Ecology	Fall - Alt YR
FES 545*	Ecological Restoration	F / W/ Sp / Su
FES 548*	Biology of Invasive Plants	Winter
FES 552*	Forest Wildlife Habitat Management	Winter – Alt YR
FES 555*	Urban Forest Planning, Policy, & Mgmt	Fall
FES 577	Agroforestry	Alt YR
FES 585*	Consensus and Natural Resources	F / W/ Sp / Su
FES 586*	Public Lands Policy & Management	F / W/ Sp / Su
WSE 553	Forest Products Business	Winter
WSE 561	Intro to Wood Products Manufacturing	Winter

College of Agricultural Sciences

Course Number and Title		Term Offered
AEC 512	Microeconomic Theory I	Fall
AEC 525	Applied Econometrics	Fall – Alt YR
AEC 532*	Environmental Law	Spring
AEC 534*	Environmental and Resource Economics	Fall / Spring
AEC 550	Environmental and Natural Resource Economics	Spring
AEC 611	Advanced Microeconomic Theory I	Winter
AEC 625	Advanced Econometrics I	Winter
BOT 525	Flora of the Pacific Northwest	Spring
BOT 551	Plant Pathology	Fall
BOT 561	Mycology	Fall
BOT 588	Environmental Physiology of Plants	Winter
CROP 540*	Weed Management	Fall / Winter
FW 556*	Freshwater Ecology and Conservation	Spring
RNG 521*	Rangeland Restoration and Management	Fall / Spring
RNG 557	Habitat Analysis 1: Habitat Use and Movement	Fall
SOIL 523	Principles of Stable Isotopes	Winter – Alt YR
SOIL 525	Mineral Organic Matter Interactions	Winter
SOIL 535	Soil Physics	Winter – Alt YR
SOIL 545*	Environmental Soil Chemistry	W / Sp – Alt YR
SOIL 566	Soil Morphology and Classification	Fall / Spring

College of Business

Course Number and Title		Term Offered
BA 513*	Business Legal Management	W / Sp / Sum
BA 515*	Managerial Decision Tools	W / Sp / Sum
BA 517	Markets & Valuation	F / Sp / Sum
BA 540*	Corporate Finance	Fall / Winter
BA 561*	Supply Chain Management	Winter / Spring
BA 562*	Managing Projects	Fall
BA 563	Family Enterprise Governance	Spring – Alt YR
FIN 542*	Investments	Winter
FIN 543*	Portfolio Management	Spring – Alt YR

College of Earth, Ocean, and Atmospheric Sciences

Course Number and Title		Term Offered
GEOG 512	Social-Ecological Systems	Winter
GEOG 551*	Plan. Principles & Pract. For Resilient Comms.	Fall
GEOG 560*	GIScience I: Intro to Geographic Info. Science	F / W/ Sp
GEOG 561*	GIScience II: Analysis and Applications	Winter / Spring
GEOG 562*	GIScience III: Programming for Geospatial Analysis	Spring
GEOG 563	GIScience IV: Spatial Modeling	Spring – Alt YR
GEOG 564*	Geospatial Perspectives on Intelligence, Security, and Ethics	Fall / Spring
GEOG 565	Spatio-Temporal Variation in Ecology and Earth Science	Fall
GEOG 566	Advanced Spatial Statistics and GIScience	Spring
GEOG 580*	Remote Sensing I: Principles and Applications	Fall
GEOG 581 *	Satellite Image Analysis	Winter / Spring
GEOG 596	Field Research in Geomorph and Landscape Eco	Fall

College of Engineering

Course Number and Title		Term Offered
BEE 512*	Physical Hydrology	Fall
BEE 542	Vadose Zone Transport	Fall – Alt YR
BEE 546	River Engineering	Spring – Alt YR
BEE 549	Regional Hydrologic Modeling	Fall – Alt YR
CE 512	Hydrology	Fall / Spring
CE 513	GIS in Water Resources	W / Sum
CE 516	Stormwater Design and Management	Winter
CE 544	Open Channel Flow	Winter – Alt YR
CE 547	WRE I: Principles of Fluid Mechanics	Fall
CE 561	Photogrammetry	Winter
CE 562	Digital Terrain Modeling	Spring – Alt YR
CE 564	Global Navigation Satellite System	Fall – Alt YR
CE 566	3D Laser Scanning and Imaging	Fall
CE 579	Slope and Embankment Design	Spring
CS 553	Scientific Visualization	Fall
IE 515	Simulation & Decision Support Systems	Winter
IE 521	Industrial Systems Optimization I	Fall – Alt YR
IE 522	Industrial Systems Optimization II	Fall – Alt YR
IE 545	Human Factors Engineering	F / Sp – Alt YR
IE 563	Advanced Production Planning and Control	Winter

College of Health

Course Number and Title		Term Offered
H 594*	Applied Ergonomics	Winter / Spring

College of Liberal Arts

Course Number and Title		Term Offered
ANTH 591	Ethnographic Methods	Winter
ANTH 593	Statistical Applications in Anthropology	Spring

College of Science

Course Number and Title		Term Offered
ST 511	Methods of Data Analysis I	F / W / Sum
ST 512	Methods of Data Analysis II	Winter / Spring
ST 513	Methods of Data Analysis III	Spring
ST 515*	Design and Analysis of Planned Experiments	Winter / Spring
ST 521	Introduction to Mathematical Statistics I	Fall / Summer
ST 522	Introduction to Mathematical Statistics II	W / Sum
ST 525*	Applied Survival Analysis	Fall
ST 531*	Sampling Methods	Fall
ST 541	Probability, Computing, & Simulation in Statistics	Fall
ST 551	Statistical Methods I	Fall
ST 552	Statistical Methods II	Winter
ST 553	Statistical Methods III	Spring
ST 555	Advanced Experimental Design	Fall – Alt YR
ST 557	Applied Multivariate Analysis	Fall – Alt YR
ST 561	Theory of Statistics I	Fall
ST 562	Theory of Statistics II	Winter
ST 563	Theory of Statistics III	Spring
ST 565	Time Series	Winter – Alt YR
ST 567	Spatial Statistics	Winter – Alt YR
ST 623	Generalized Regression Models I	Fall
ST 625	Survival Analysis	Winter – Alt YR

Outcomes Assessment of Graduate Programs

Master's (MF, MS) Degree Programs

The Graduate Council approved (February 25, 2011) the following motion regarding Graduate Learning Outcomes for all Master's students:

1. Conduct research or produce some other form of creative work,
2. Demonstrate mastery of subject material, and
3. Be able to conduct scholarly or professional activities in an ethical manner

MF Degree – Program Specific Learning Outcomes

1. Can demonstrate proficiency in the area of study.
2. Can state the goals for a professional project clearly.
3. Can demonstrate sound knowledge and synthesize literature on a specific problem.
4. Can demonstrate the potential value of a project within the area of study.
5. Can apply sound state-of-the-field methods/tools to solve the defined problem and can describe the methods/tools effectively.
6. Can communicate project results clearly and professionally in written and oral forms.
7. Can demonstrate awareness of broader implications of the project or application.
8. Has potential for producing a conference or journal publication from the project.
9. Understands professional ethics/conduct.

MS Degree – Program Specific Learning Outcomes

1. Can clearly state the research problem.
2. Can demonstrate sound knowledge and synthesize literature on a specific research problem.
3. Can demonstrate the potential value of a research problem within the area of study.
4. Can apply sound state-of-the-field methods/tools to solve the defined problem and has described the methods/tools effectively.
5. Can effectively analyze and interpret research results/data.
6. Can communicate research results clearly and professionally in written and oral forms.
7. Can demonstrate capability for independent research in the area of study and expertise in the area.
8. Can demonstrate awareness of broader implications of the concluded research.
9. Can produce a journal or conference publication from the research.
10. Understands research ethics and conduct of research.

Program learning outcomes will be assessed at the final examination using the attached rubrics for MF or MS students (pgs. 53-54). Benchmark for satisfactory performance: The majority of the examining committee rates the achievement of the individual program learning outcome at a level of "Meets Expectations" or above. The assessment of program specific learning outcomes will inform the assessment of the three Graduate Learning Outcomes from the Graduate Council.

Students in a MF or MS program must maintain a 3.00 GPA on all required coursework. Any term that GPA falls below this average, the student will meet with the major advisor and the FERM Graduate Program Chair to develop an educational plan for addressing difficulties.

For SFM degree requirements and official degree program rubrics,
download the MF and MS degree program checklists and rubrics at:
http://ferm.forestry.oregonstate.edu/current-graduate-student-information

Doctoral (PhD) Degree Programs

The Graduate Council approved (February 25, 2011) the following motion regarding Graduate Learning Outcomes for all PhD students:

1. Produce and defend an original significant contribution to knowledge,
2. Demonstrate mastery of subject material, and
3. Be able to conduct scholarly activities in an ethical manner

PhD Degree – Program Specific Learning Outcomes

1. Can clearly state the research problem.
2. Can demonstrate sound knowledge and synthesize literature in the area and of prior work on the specific research problem.
3. Can demonstrate the potential value of solution to the research problem in advancing knowledge within the area of study.
4. Can apply sound state-of-the-field research methods/tools to solve the defined problem and can describe the methods/tools effectively.
5. Can analyze and interpret research results/data effectively.
6. Can communicate research results clearly and professionally in written and oral forms.
7. Can demonstrate capability for independent research in the area of study, significant expertise in the area, including field measurements and analytic techniques, and is able to make original contribution to the field.
8. Can demonstrate awareness of broader implications of research in the study area.
9. Can produce a journal or conference publication from the research.
10. Understands research ethics and conduct of research.

Program learning outcomes will be assessed twice during the PhD program:

- For the oral preliminary examination, SFM PhD students will be assessed using the program rubrics on pg. 55, which encompass learning outcomes 1-9. Alternatively, assessment of learning outcomes 1-5 can be completed at a research proposal meeting (pg. 56) with learning outcomes 6-9 assessed at the preliminary oral examination (pg. 57).
- For the final oral examination, student learning outcomes are assessed using the final exam rubrics (pg. 58). Benchmark for satisfactory performance: The majority of the examining committee rates the achievement of the individual program learning outcome at a level of "Meets Expectations" or above. The assessment of program specific learning outcomes will inform the assessment of the three Graduate Learning Outcomes from the Graduate Council.

Students in the PhD program must maintain a 3.00 GPA on all required coursework. Any term that GPA falls below this average, the student will meet with the major advisor and the FERM Graduate Program Chair to develop an educational plan for addressing difficulties.

For SFM degree requirements and official degree program rubrics,
download the PhD degree program checklists and rubrics at:
http://ferm.forestry.oregonstate.edu/current-graduate-student-information

EVALUATION RUBRIC: PROJECT (MF) DEFENSE EXAM

Candidate Name: _____ Date: _____

Title of Project: _____

Evaluation / Guidance	Does not meet Expectations	Meets Expectations	Exemplary Performance	Not Observed
1. Critical Thinking: Has demonstrated proficiency in the area of study.				
2. Project Definition: Has stated the goals of the professional project clearly, providing motivation for undertaking the project.				
3. Literature and Previous Work: Demonstrates sound knowledge of literature in the area, and of prior work on the specific problem.				
4. Impact of Proposed Project: Demonstrates the potential value of solution or application within the area of study.				
5. Solution Approach: Has applied sound state-of-the-field methods/tools to solve the defined problem and has described the methods/tools effectively.				
6. Quality of Written and Oral Communication: Communicates project results clearly and professionally in both **(a)** written and **(b)** oral form.				
7. Broader Impact: Demonstrated awareness of broader implications of the project. Broader implications may include social, economic, technical, ethical, business, etc. aspects.				
8. Publications: Journal or conference publications have resulted (or are anticipated) from this project.				
9. Ethics: Has received training in **(a)** responsible and ethical conduct of research, OR **(b)** professional conduct through specific coursework, workshops, or mentoring.	YES/NO			

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 1-9 above.

CRITERIA	PERFORMANCE RATINGS		
	Does NOT PASS FINAL DEFENSE Exam	Passes Final Defense Exam	
OVERALL, My rating of the Examination	Does not meet expectations	Meets Expectations	Exemplary Performance

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

EVALUATION RUBRIC: THESIS (MS) DEFENSE EXAM

Candidate Name: _____ Date: _____

Title of Project: _____

Evaluation / Guidance	Does not meet Expectations	Meets Expectations	Exemplary Performance	Not Observed
1. Problem Definition: Stated the research problem clearly, providing motivation for undertaking the research.				
2. Literature and Previous Work: Demonstrates sound knowledge of literature in the area, and of prior work on the specific research problem.				
3. Impact of Proposed Research: Demonstrates the potential value of solution to the research problem in advancing knowledge within the area of study.				
4. Solution Approach: Has applied sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively.				
5. Results: Analyzed and interpreted research results/data effectively.				
6. Quality of Written and Oral Communication: Communicates research results clearly and professionally in both **(a)** written and **(b)** oral form.				
7. Critical Thinking: Has demonstrated capability for independent research results in the area of study and expertise in the area.				
8. Broader Impact: Demonstrates awareness of broader implications of the concluded research. Broader implications may include social, economic, technical, ethical, business, etc. aspects.				
9. Publications: Journal or conference publications have resulted (or are anticipated) from this research.				
10. Ethics: Has received training in responsible and ethical conduct of research (RCR) through specific coursework or workshops.	YES/NO			

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 1-10 above.

CRITERIA	PERFORMANCE RATINGS		
	Does NOT PASS FINAL DEFENSE Exam	**Passes Final Defense Exam**	
OVERALL, My rating of the Examination	**Does not meet expectations**	**Meets Expectations**	**Exemplary Performance**

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

EVALUATION RUBRIC: PRELIMINARY (PhD) EXAM – PROPOSAL PRESENTATION

Candidate Name: _____ Date: _____

Title of Project: _____

Evaluation / Guidance	Does not meet Expectations	Meets Expectations	Exemplary Performance	Not Observed
1. Problem Definition: States the research problem clearly, providing motivation for undertaking the research.				
2. Literature and Previous Work: Demonstrates sound knowledge and ability to synthesize literature in the area, and of prior work on the specific research problem.				
3. Impact of Proposed Research: Demonstrates the potential value of solution to the research problem in advancing knowledge within the area of study.				
4. Solution Plan: Provides a sound plan for applying state-of-the-field research methods/tools to solving the defined problem and shows a good understanding of how to use methods/tools effectively.				
5. Expected Results: Provides a sound plan for analyzing and interpreting research results/data.				
6. Quality of Written and Oral Communication: Communicates information clearly and professionally in both **(a)** written and **(b)** oral form.				
7. Critical Thinking: Demonstrates capability for independent research in the area of study, preparedness in core disciplines, including field measurements and analytic techniques.				
8. Broader Impact: Demonstrates awareness of broader implications of research in the study area. Broader implications may include social, economic, technical, ethical, business, etc. aspects.				
9. Ethics: Has received training in responsible and ethical conduct of research (RCR) through specific coursework or workshops.	YES/NO			

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 1-9 above.

CRITERIA	PERFORMANCE RATINGS		
	Does NOT PASS PRELIMINARY Exam	**Passes Preliminary Exam**	
OVERALL, My rating of the Examination	**Does not meet expectations**	**Meets Expectations**	**Exemplary Performance**

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

EVALUATION RUBRIC: PROPOSAL PRESENTATION

Candidate Name: _____ Date: _____

Title of Project: _____

Evaluation / Guidance	Does not meet Expectations	Meets Expectations	Exemplary Performance	Not Observed
1. Problem Definition: States the research problem clearly, providing motivation for undertaking the research.				
2. Literature and Previous Work: Demonstrates sound knowledge and ability to synthesize literature in the area, and of prior work on the specific research problem.				
3. Impact of Proposed Research: Demonstrates the potential value of solution to the research problem in advancing knowledge within the area of study.				
4. Solution Plan: Provides a sound plan for applying state-of-the-field research methods/tools to solving the defined problem and shows a good understanding of how to use methods/tools effectively.				
5. Expected Results: Provides a sound plan for analyzing and interpreting research results/data.				

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 1-5 above.

CRITERIA	PERFORMANCE RATINGS		
OVERALL, My rating of the Performance	**Does not meet expectations**	**Meets Expectations**	**Exemplary Performance**

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

EVALUATION RUBRIC: PRELIMINARY (PhD) EXAM

Candidate Name: _____ Date: _____

Title of Project: _____

Evaluation / Guidance	Does not meet Expectations	Meets Expectations	Exemplary Performance	Not Observed
6. Quality of Written and Oral Communication: Communicates information clearly and professionally in both **(a)** written and **(b)** oral form.				
7. Critical Thinking: Demonstrates capability for independent research in the area of study, preparedness in core disciplines, including field measurements and analytic techniques.				
8. Broader Impact: Demonstrates awareness of broader implications of research in the study area. Broader implications may include social, economic, technical, ethical, business, etc. aspects.				
9. Ethics: Has received training in responsible and ethical conduct of research (RCR) through specific coursework or workshops.	YES / NO			

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 6-9 above.

CRITERIA	PERFORMANCE RATINGS		
	Does NOT PASS PRELIMINARY Exam	**Passes Preliminary Exam**	
OVERALL, My rating of the Examination	**Does not meet expectations**	**Meets Expectations**	**Exemplary Performance**

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

EVALUATION RUBRIC: DISSERTATION (PhD) FINAL EXAM

Candidate Name: _____ Date: _____

Title of Project: _____

Evaluation / Guidance	Does not meet Expectations	Meets Expectations	Exemplary Performance	Not Observed
1. Problem Definition: Stated the research problem clearly, providing motivation for undertaking the research.				
2. Literature and Previous Work: Demonstrates sound knowledge and ability to synthesize literature in the area, and of prior work on the specific research problem.				
3. Impact of Proposed Research: Demonstrates the potential value of solution to the research problem in advancing knowledge within the area of study.				
4. Solution Plan: Has applied sound state-of-the-field research methods/tools to solve the defined problem and has described the methods/tools effectively.				
5. Results: Analyzed and interpreted research results/data effectively.				
6. Quality of Written and Oral Communication: Communicates research results clearly and professionally in both **(a)** written and **(b)** oral form.				
7. Critical Thinking: Has demonstrated capability for independent research in the area of study, significant expertise in the area, including field measurements and analytic techniques, and ability to make original contributions to the field.				
8. Broader Impact: Demonstrates awareness of broader implications of the research in the study area. Broader implications may include social, economic, technical, ethical, business, etc. aspects.				
9. Ethics: Has received training in responsible and ethical conduct of research (RCR) through specific coursework or workshops.	YES / NO			
10. Publications: Journal or conference publications have resulted (or are anticipated) from this research.				

Overall Assessment: The assessment of the overall performance of the candidate based on the evidence provided in items 1-10 above.

CRITERIA	PERFORMANCE RATINGS		
	Does NOT PASS FINAL DEFENSE Exam	**Passes Final Defense Exam**	
OVERALL, My rating of the Examination	**Does not meet expectations**	**Meets Expectations**	**Exemplary Performance**

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

Sustainable Forest Management Graduate Program
MF Checklist

STARTING OUT

What to do	When to do it	Has it been done?
Attend FALL orientation (even if you were admitted in winter or spring)	Within 1st year in the program	☐
Seek advice from Major Professor and register for courses	Before registration opens each term	☐
Review the University Continuous Enrollment Policy https://catalog.oregonstate.edu/college-departments/graduate-school/#continuous-enrollment Be sure to register for a minimum of three (3) credits per term, unless otherwise specified (e.g. graduate assistantship)	Within 1st term, review as needed	☐
Form your graduate committee; must meet OSU Graduate Committee requirements: http://gradschool.oregonstate.edu/progress/graduate-committee Major Professor Minor Professor or Co-Major Professor (*if applicable*) Committee member from Grad Faculty at-large **MF committee must consist of at least three (3) faculty; at least two (2) must be from the FERM Department**	By end of 1st term or during 2nd term	☐
Develop Program of Study* with committee http://gradschool.oregonstate.edu/forms#program <u>Required Courses</u> FOR 528 FOR 530 3 credits of graduate-level statistics (e.g. ST 511) 6-8 credits from area of concentration 3-6 credits of FE/FOR 506 (Project) *Communication Training: PoS must include participation in CoF Graduate Research Symposium **or** committee-approved conference substitution that allows the student an opportunity to present their research **Total number of credits for MF: 45 credits**	After you have formed your committee, before completion of 18 credits. ***Must file PoS to Graduate School no later than 15 weeks before your final exam***	☐

MID-PROGRAM

What to do	When to do it	Has it been done?
Submit digital Program of Study form	At least 15 weeks before defense/exam	☐
Present project as oral presentation at CoF Graduate Research Symposium (WFGRS) or other approved conference	By end of 3rd term	☐

MID-PROGRAM

Meet with Major Professor to discuss performance, progress, and goals for upcoming year. Submit annual evaluation form to Curriculum Coordinator	By end of the 3rd term, and at least once annually thereafter	☐
Update your committee with a progress report and project update	Annually	☐

DEFENDING

What to do	When to do it	Has it been done?
File diploma application online: http://gradschool.oregonstate.edu/forms#diploma	At least 15 weeks before defense/final exam	☐
Work with your Major Professor to finalize your project paper *They should review and provide edits before a defendable copy is distributed to your committee*	Beginning of final registered term	☐
Determine date and time of defense with your entire committee	At least four weeks before your defense	☐
Arrange room reservation with Curriculum Coordinator	Once your committee has finalized date and time	☐
Schedule exam with the Graduate School through online form; if committee membership has changed, note updates on this form: http://gradschool.oregonstate.edu/forms#event	At least two weeks before your defense	☐
Distribute defendable copy of your project paper to your entire committee	At least two weeks before your defense	☐
Submit defense information to Curriculum Coordinator (title & photo) for advertisement. *Defense must be a public announcement!*	At least two weeks before your defense	☐
Be prepared to "meet expectations" or better on Program's MF Final Exam Evaluation Rubric: https://ferm.forestry.oregonstate.edu/current-graduate-student-information	Review at least one week before your defense	☐

FINISHING UP

What to do	When to do it	Has it been done?
Complete Qualtrics SFM Program Exit Survey	Emailed to student after exam has been scheduled	☐
Optional Schedule Exit Interview with Department Head; *see Curriculum Coordinator for scheduling*	Exit Interview should take place after your defense	☐
Submit a personal email address to Curriculum Coordinator for network account closure and email forwarding	Before you leave	☐
Clean up desk space	Before you leave	☐
Return keys (building/office/gate) to the OSU Key Shop https://facilities.oregonstate.edu/shops/key-shop	Before you leave	☐

Sustainable Forest Management Graduate Program
MS Checklist

STARTING OUT

What to do	When to do it	Has it been done?
Attend FALL orientation (even if you were admitted in winter or spring)	Within 1st year in the program	☐
Seek advice from Major Professor and register for courses	Before registration opens each term	☐
Review the University Continuous Enrollment Policy https://catalog.oregonstate.edu/college-departments/graduate-school/#continuous-enrollment Be sure to register for a minimum of three (3) credits per term, unless otherwise specified (e.g. graduate assistantship)	Within 1st term, review as needed	☐
Form your graduate committee; must meet OSU Graduate Committee requirements: http://gradschool.oregonstate.edu/progress/graduate-committee Major Professor Minor Professor or Co-Major Professor (if applicable) At least one committee member from Grad Faculty at-large Graduate Council Representative (GCR)* *Select using the online GCR list generation tool: https://gradschool.oregonstate.edu/forms#gcr. *You may only generate one GCR list per day.* **MS committee must consist of at least four (4) faculty; at least two (2) must be from the FERM Department**	By end of 1st term or during 2nd term	☐
Develop Program of Study* with committee http://gradschool.oregonstate.edu/forms#program <u>Required Courses</u> FOR 530 FES 522 or GRAD 520 or equivalent 6-8 credits of graduate level statistics or econometrics 6-8 credits from area of concentration 6-12 credits of FE/FOR 503 (Thesis) *Communication Training: PoS must include participation in CoF Graduate Research Symposium (WFGRS) **or** committee-approved conference substitution that allows the student an opportunity to present their research **two times** (*first as proposal poster then as oral presentation*) **Total number of credits for MS: 45 credits**	After you have formed your committee, before completion of 18 credits *If applying for specific funding/awards, you need to file your PoS sooner than 15 weeks before your exam*	☐
Present research proposal as poster presentation at CoF Graduate Research Symposium (WFGRS) or other approved conference	In first year	☐

STARTING OUT

Meet with Major Professor to discuss performance, progress, and goals for upcoming year. Submit annual evaluation form to Curriculum Coordinator	By end of 3rd term, and at least once annually thereafter	☐

MID-PROGRAM

What to do	When to do it	Has it been done?
Update your committee with a progress report and research update	Annually	☐
Submit digital Program of Study form *If applying for specific funding/awards, you need to file your PoS sooner than 15 weeks*	At least 15 weeks before defense/final exam	☐
Present research as oral presentation at CoF Graduate Research Symposium (WFGRS) or other approved conference	In final year	☐

DEFENDING

What to do	When to do it	Has it been done?
File diploma application online: http://gradschool.oregonstate.edu/forms#diploma	At least 15 weeks before defense/final exam	☐
Work with your Major Professor to finalize your thesis *They should review and provide edits before a defendable copy is distributed to your committee*	Beginning of final registered term	☐
Determine date and time of defense with your entire committee	At least four weeks before your defense	☐
Arrange room reservation with Curriculum Coordinator	Once your committee has finalized date and time	☐
Schedule exam with the Graduate School through online form; if committee membership has changed, note updates on this form: http://gradschool.oregonstate.edu/forms#event	At least two weeks before your defense	☐
Distribute defendable copy of your thesis to your entire committee (GCR included)	At least two weeks before your defense	☐
Submit defense information to Curriculum Coordinator (title & photo) for advertisement. *Defense must be a public announcement!*	At least two weeks before your defense	☐
Submit pretext pages (everything before page 1 of your thesis) to Graduate School's Thesis Editor http://gradschool.oregonstate.edu/progress/thesis-guide	At least two weeks before your defense	☐
Be prepared to "meet expectations" or better on Program's MS Final Exam Evaluation Rubric: https://ferm.forestry.oregonstate.edu/current-graduate-student-information	Review at least one week before your defense	☐

FINISHING UP

What to do	When to do it	Has it been done?
Complete Qualtrics SFM Program Exit Survey	Emailed to student after exam has been scheduled	☐
Optional Schedule Exit Interview with Department Head; *see Curriculum Coordinator for scheduling*	Exit Interview should take place after your defense	☐
Upload final copy of thesis to ScholarsArchive* http://gradschool.oregonstate.edu/progress/thesis-guide *Must be uploaded within 6 weeks after defense **or** before the 1st day of the following term, whichever comes first, to avoid having to register for the next term (3 credit min.)	After all necessary corrections suggested by committee have been made	☐
Submit online Electronic Thesis/Dissertation (ETD) form to Grad School https://gradschool.oregonstate.edu/forms#etd	After uploading final copy of thesis to ScholarsArchive	☐
Submit a personal email address to Curriculum Coordinator for network account closure and email forwarding	Before you leave	☐
Clean up desk space	Before you leave	☐
Return keys (building/office/gate) to the OSU Key Shop https://facilities.oregonstate.edu/shops/key-shop	Before you leave	☐

Sustainable Forest Management Graduate Program
PhD Checklist

STARTING OUT

What to do	When to do it	Has it been done?
Attend FALL orientation (even if you were admitted in winter or spring)	Within 1st year in the program	☐
Seek advice from Major Professor and register for courses	Before registration opens each term	☐
Review the University Continuous Enrollment Policy https://catalog.oregonstate.edu/college-departments/graduate-school/#continuous-enrollment Be sure to register for a minimum of three (3) credits per term, unless otherwise specified (e.g. graduate assistantship)	Within 1st term, review as needed	☐
Form your graduate committee; must meet OSU Graduate Committee requirements: http://gradschool.oregonstate.edu/progress/graduate-committee Major Professor Co-Major Professor or Minor Professor *(if applicable)* At least two committee members from Grad Faculty at large Graduate Council Representative (GCR)* *Select using the online GCR list generation tool: https://gradschool.oregonstate.edu/forms#gcr. After you have identified a representative, return the list to the Graduate School **PhD committee must consist of at least five (5) faculty; at least two (2) must be from the FERM Department**	By end of 2nd term or during 3rd term	☐
Develop Program of Study* with committee: http://gradschool.oregonstate.edu/forms#program <u>Required Courses</u> FOR 530 FES 522 or GRAD 520 or equivalent 6-8 credits of graduate level statistics or econometrics 6-8 credits from area of concentration FE/FOR 603 – minimum of 36 credits *Communication Training: PoS must include participation in CoF Graduate Research Symposium **or** committee-approved conference substitution that allows the student an opportunity to present their research **two times** (*first as proposal poster then as oral presentation*) **Total number of credits for PhD: 108 credits**	After you have formed your committee, before completion of 5th term and oral preliminary exam *If applying for specific funding/awards you need to file your PoS sooner than the 5th term*	☐
Meet with Major Professor(s) to discuss performance, progress, and goals for upcoming year. Submit annual evaluation form to Curriculum Coordinator	By end of 3rd term, and at least once annually thereafter	☐

STARTING OUT

Update your committee with a progress report and research update	Annually	☐

MID-PROGRAM

What to do	When to do it	Has it been done?
Present research proposal as poster presentation at CoF Graduate Research Symposium (WFGRS) or other approved conference	In second year	☐
Submit digital Program of Study form *If applying for funding/awards, you need to file your PoS before the 5th term*	Before completion of 5th term	☐
Sit for Written Preliminary Exam	Determined by student's committee near the completion of coursework	☐
Determine date and time of Oral Preliminary Exam* with your committee after successful completion of the written portion of the examination *Student will have the option to hold a combined preliminary exam consisting of the research proposal and oral exam **or** may conduct these meetings separately.	At least two weeks before your prelim exam	☐
Arrange room reservation with Curriculum Coordinator	Once your committee has finalized date and time	☐
Schedule Oral Preliminary Exam with the Graduate School through online form; if committee membership has changed, note updates on this form: http://gradschool.oregonstate.edu/forms#event	At least two weeks before your prelim exam	☐
Distribute research proposal to your entire committee (GCR included)	At least two weeks before your exam (or meeting)	☐
Be prepared to "meet expectations" or better on Program's PhD Preliminary Exam Evaluation Rubric(s): https://ferm.forestry.oregonstate.edu/current-graduate-student-information *Upon successful completion of preliminary oral exam, student is "advanced to candidacy" for doctorate*	Review at least one week before your exam	☐
Present research as oral presentation at CoF Graduate Research Symposium (WFGRS) or other approved conference	In final year	☐

DEFENDING

What to do	When to do it	Has it been done?
File diploma application online: http://gradschool.oregonstate.edu/forms#diploma	At least 15 weeks before defense/final exam	☐
Work with your Major Professor to finalize your dissertation *They should review and provide edits before a defendable copy is distributed to your committee*	Beginning of final registered term	☐

DEFENDING CONT.

Determine date and time of defense with your entire committee	At least four weeks before your defense	☐
Arrange room reservation with Curriculum Coordinator	Once your committee has finalized date and time	☐
Schedule Final Exam with the Graduate School through online form; if committee membership has changed, note updates on this form: http://gradschool.oregonstate.edu/forms#event	At least two weeks before your defense	☐
Distribute defendable copy of your dissertation to your entire committee (GCR included)	At least two weeks before your defense	☐
Submit defense information to Curriculum Coordinator (title & photo) for advertisement *Defense must be a public announcement!*	At least two weeks before your defense	☐
Submit pretext pages (everything before page 1 of your dissertation) to Graduate School's Thesis Editor http://gradschool.oregonstate.edu/progress/thesis-guide	At least two weeks before your defense	☐
Prepared to "meet expectations" or better on Program's PhD Final Exam Evaluation Rubric: https://ferm.forestry.oregonstate.edu/current-graduate-student-information	Review at least one week before your defense	☐

FINISHING UP

What to do	When to do it	Has it been done?
Complete Qualtrics SFM Program Exit Survey	Emailed to student after exam has been scheduled	☐
Optional Schedule Exit Interview with Department Head; *see Curriculum Coordinator for scheduling*	Exit Interview should take place after your defense	☐
Upload final copy of dissertation to ScholarsArchive* http://gradschool.oregonstate.edu/progress/thesis-guide *Must be uploaded within 6 weeks after defense **or** before the 1st day of the following term, whichever comes first, to avoid having to register for the next term (3 credit min.)	After all necessary corrections suggested by committee have been made	☐
Submit online Electronic Thesis/Dissertation (ETD) form to Grad School http://gradschool.oregonstate.edu/progress/thesis-guide	After uploading final copy of thesis to ScholarsArchive	☐
Submit a personal email address to Curriculum Coordinator for network account closure and email forwarding	Before you leave	☐
Clean up desk space	Before you leave	☐
Return keys (building/office/gate) to OSU Key Shop https://facilities.oregonstate.edu/shops/key-shop	Before you leave	☐

Research Authorization Statement

Authorization for Dissertation / Thesis Research
Involving Humans, Animals, and Plants

Many types of research involving human subjects, animals, and plants, both in the laboratory and through field studies, may require specific permits and authorization from University, State, and/or Federal agencies. Graduate students should work with their major professor and committee to ensure that all necessary permits have been obtained. Failure to do so may render all or part of the data collected through such studies unusable in the dissertation/thesis. A starting point for information on these topics is the OSU Office of Research Integrity at http://research.oregonstate.edu/ori. Also see the Institutional Animal Care and Use Committee (IACUC) site which contains information on the use of vertebrate animals: Rule compliance, approval process, permits for field studies and AICUC forms at http://research.oregonstate.edu/iacuc.

If work involves human subjects in any way, you must review the materials and requirements of the Institutional Review Board (IRB) at http://research.oregonstate.edu/irb