

Forest Ecosystems and Society Graduate Degree Program Plan for Achieving FES Learning Outcomes

Student Name _____

Circle appropriate degree: M. F M.S. Ph.D

Consult the attached description of each learning outcome. For each outcome, on separate pages, describe how you have achieved, or will achieve, the learning outcome in each area, and how you will be able to demonstrate that you are competent in that area to the committee.

After all signatures have been obtained, a copy of the plan and signatures should be sent to all members of the student's graduate committee and copy should be filed in the student's personnel file in the department office.

1. Disciplinary skills and knowledge
2. Interdisciplinary Collaborative Problem Solving (biophysical and social sciences)
3. Communication skills (oral, written, professional)
 - a. (optionally as desired by student and committee) Teaching
4. Critical thinking and critical awareness skills
5. Research skills (quantitative, qualitative)
6. Research ethics and responsibilities
7. Policy analysis / interpretation

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## Required Signatures

I agree to the plan described above for achieving the FES degree program learning outcomes.

Student Signature \_\_\_\_\_ Date \_\_\_\_\_

I agree to the plan described above for achieving the FES degree program learning outcomes and I will assess my student on these learning outcomes during their defense and preliminary examination (if Ph.D).

Major Professor Signature \_\_\_\_\_ Date \_\_\_\_\_

The plan described above meets the requirements of the FES Graduate Degree program.

FES Department Signature \_\_\_\_\_ Date \_\_\_\_\_  
(Program Director or Dept. Head)

## FES Graduate Learning Outcomes Effective Fall 2015

### Explanation of Learning Outcomes

The explanations below are meant as general guidelines. Students and committees will interpret these and make specific recommendations for how students should prepare to meet them and demonstrate them to the committee in a manner suitable to their area of study and level of advancement.

#### 1. **Disciplinary skills and knowledge**

Knowledge of a student's chosen field of study, and closely related fields, including history and trends in major findings, concepts, theories, approaches, and context.

#### 2. **Interdisciplinary Collaborative Problem Solving**

- a. Situate environmental issues into appropriate biophysical and social contexts and identify disciplines necessary to address the problem.
- b. Collaborate in interdisciplinary teams, e.g., listen to, give and receive constructive feedback, define divisions of labor, set goals and milestones, actively work to see problems from multiple perspectives, understand group dynamics including issues around providing and accepting leadership, member responsibilities and peer-to-peer communications.
- c. Provide disciplinary expertise to an interdisciplinary team.
- d. Articulate ideas that transcend contributing disciplines; identify commonalities and conflict among disciplines; to devise approaches that support commonalities and reduce conflicts.

#### 3. **Communication skills (oral, written, professional)**

Effectively interact (write, speak and listen) to diverse audiences in an organized and clear fashion about areas of expertise in oral, written or electronic formats. Explain information from one discipline to researchers in other relevant disciplines and communicate research to scientific and non-scientific audiences-

For students wishing to pursue careers in academia, the following learning outcomes for teaching may be applicable:

Understand contemporary pedagogy, relevant STEM teaching methods and experience in their application in classroom, online, and technical/professional learning environments. Develop<sup>1</sup> a classroom and/or online course, including development of a syllabus which includes learning outcomes, classroom activities, assignments and assessment and evaluation methods.

#### 4. **Critical thinking and critical awareness skills**

Discern between, and infer consequences of multiple perspectives. Evaluate the quality, context, scale, and biases in information, and synthesize diverse types of information, in written and oral forms. Effectively participate in real-time discussions of biophysical and social systems and their interactions. Understand the application of methods and knowledge from one discipline to another.

#### 5. **Research skills**

Demonstrate facility with the research methods appropriate for the area of study. Understand the use of quantitative and qualitative summaries of data as evidence for conclusions and scientific inference. This can include skills and knowledge needed to plan, implement, analyze and interpret research.

#### 6. **Research ethics and responsibilities**

Knowledge of processes and guidelines for assuring that research is conducted in socially and professionally acceptable and legal ways, while minimizing and managing conflicts of interest. Topics of relevance may include responsible conduct of research, general ethics, peer review, bias during data analysis and presentation, plagiarism, animal welfare, treatment of human subjects, collaboration, and authorship.

#### 7. **Policy analysis/interpretation**

Understand the role of laws, regulations, social institutions, and governance processes relevant to application of a student's disciplinary and/or inter/trans-disciplinary areas of study.

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<sup>1</sup> Development may include course delivery but that is not necessary.