

Forest Ecosystems and Society Graduate Degree Program Plan for Achieving FES Competencies

Student Name _____

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

For each of the following areas, on separate pages describe how you have achieved, or will achieve, competency in each area, and how you will be able to demonstrate that you are competent in that area to the committee. The competencies are briefly explained on the next page.

1. Disciplinary skills and knowledge
2. Trans-disciplinary/interdisciplinary skills and knowledge (biophysical and social sciences)
3. Communication skills (oral, written, pedagogy, professional)
4. Critical thinking skills
5. Research skills (quantitative, qualitative)
6. Research ethics
7. Policy (ecological systems)
8. Teaching (PhD only)

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**Required Signatures**

I agree to the plan described above for achieving the FES degree program competency requirement.

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

I agree to the plan described above for achieving the FES degree program competency requirement.

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

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

FES Department Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Explanation of competencies**

The explanations below are meant to provide 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. Trans-disciplinary/interdisciplinary skills and knowledge (biophysical and social sciences)**

Knowledge of the relationship of the a student's field/s of study to social and/or biophysical sciences, and approaches for integration and synthesis during research, outreach, and teaching. For social science students, emphasis is on knowledge of biophysical sciences and how to use them to analyze and interpret information. For biophysical science students, knowledge of social sciences and how to use them to analyze and interpret information.

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

Ability to write and speak to diverse audiences in an organized and clear fashion about relevant areas of expertise, both disciplinary and inter/transdisciplinary. Ability to modify oral and written communications for specific audiences. Knowledge of contemporary electronic tools for communication, such as for supporting lectures, social media, and blogs.

### **4. Critical thinking skills**

Ability to evaluate the quality, context, scale, and biases in information, and to synthesize diverse kinds of information, in written and oral forms. Capacity for real-time discussion of biophysical and social systems and their interactions.

### **5. Research skills (quantitative, qualitative)**

Knowledge sufficient to understand the use of quantitative and qualitative summaries of data as evidence for conclusions and scientific inference. This can include skills and knowledge with statistical, mathematical, graphical and process models sufficient to plan, implement, analyze and interpret research.

### **6. Research ethics**

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 conduct general ethics, peer review, bias during data analysis and presentation, plagiarism, animal welfare, treatment of human subjects, collaboration, and authorship.

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

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

### **8. Teaching (PhD only )**

Knowledge of contemporary, relevant STEM teaching methods, and experience in their application in classrooms, online, and technical/professional environments. Experience in development of a classroom and/or online course, including development of a course syllabus that includes learning outcomes, lectures, laboratories, student assignments, and evaluation methods.