Environmental Dynamics (ENDY)

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Frank L. Farmer, Professor
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Jerry Rose, Professor
Cynthia Louise Sagers, Professor
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Degree Conferred:
Ph.D. (ENDY)

Environmental Dynamics is the study of complex interactions between natural systems and human activity. It requires an interdisciplinary research approach and integration with the power, efficiency, and economy of advanced computer-based technologies. The program’s prime focus is human-environmental interactions within recent Earth history. It stresses interdisciplinary analyses of geophysical, biological, geochemical, and sociocultural interactions related to environmental change. An overarching objective of the ENDY program is to aid development of strategies for sustainable societies based on results of scientific research and respect for human culture. Associated research institutes and laboratories include the Archeo-Imaging Laboratory, the Arkansas Archeological Survey, the Arkansas Water Resources Center (AWRC), the Bio-archeology Laboratory, the Center for Advanced Spatial Technologies (CAST), the Earth Visualization Laboratory, the Tree-Ring Laboratory, and the Water Quality Laboratory. Faculty from 22 additional departments, across six colleges, also share an interest in human and natural ecology and participate in the program.

Primary Areas of Faculty Research: Interdisciplinary research activities among faculty participating in the ENDY program are very broad, though particular areas of strength are found in dendrochronology and paleoclimatology; watershed and water resource sciences; geosciences (geomorphology, geodynamics, geodesy, geoinformatics and geospatial applications); anthropology; soil sciences; sustainability issues; ecology, ecological change, environmental pollution and land use change; and impacts of natural hazards. In addition, many research activities involve strong components of social sciences, economics and sustainable development. Interested individuals are encouraged to contact the ENDY program or participating faculty to obtain additional information related to specific research projects and possible participation.

Requirements for Admission: Applicants should hold a master’s degree in an environmental field such as anthropology, geography, geology, biological sciences, crop, soil, and environmental sciences, or environmental engineering, or in a social science field with an environmental focus (e.g. environmental economics, environmental policy, environmental sociology). Further, these students will be required to have at least a 3.20 GPA in graduate courses and strong scores on all components of the Graduate Record Examination (GRE). Applicants without the master’s degree but with exceptionally strong qualifications may be admitted directly into the ENDY program but must complete the master’s requirements. Admission into the program will be by committee evaluation. In addition to fulfilling the requirements for admission to the Graduate School, applicants must also supply the following materials:

1. Three recommendations from individuals familiar with the applicant’s academic or work history who can give candid assessments of the applicant’s ability to perform at the Ph.D. level.
2. A three-page Statement of Purpose outlining the applicant’s plans for the ENDY degree program that includes relevance of previous academic or work experience, current research interests or employment that bear on doctoral research, special skills, fieldwork experience, familiarity with interdisciplinary work (if any), and future career goals.

3. An example of the applicant’s writing such as a publication reprint, report, major term paper, undergraduate honors thesis, chapter from M.A./M.S. thesis, or similar document that demonstrates the applicant’s organizational skills, research ability, familiarity with a body of literature, ability to report clearly on an academic topic, and/or general writing skills.

4. TOEFL (Test of English as a Foreign Language) and TSE (Test of Spoken English) scores for international students whose native language is not English.

5. GRE scores and other relevant information that would assist the Admissions Committee in selecting applicants to the program.

Requirements for the Degree: During the first semester of study, all students will be assigned an advisory committee to determine the student’s particular program of study. Students are required to integrate both environmental and human components into their Ph.D. coursework and dissertation research. The advisory committee will determine the courses required and assist the student in balancing courses among disciplines.

Students become candidates for the doctorate only upon passing written and oral comprehensive exams. The examination must be passed at least nine months before graduation.

Each candidate must complete a doctoral dissertation on a topic determined through collaboration with a major professor and dissertation committee. This dissertation must be a scholarly and significant original contribution to knowledge within the field of Environmental Dynamics.

A final oral examination is required and must be taken at least two weeks before graduation. The examination will be concerned primarily with the candidate’s dissertation but may include other aspects of the graduate work.

Individually tailored programs of study will be designed with the expectation that the student will complete a minimum of 24 hours of course work beyond the master’s level, to include three required courses:

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENDY 5113</td>
<td>Global Change (Sp)</td>
<td>3</td>
</tr>
<tr>
<td>ENDY 6013</td>
<td>Environmental Dynamics (Fa)</td>
<td>3</td>
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</tbody>
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Select one of the following:

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<th>Course</th>
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<tr>
<td>ENDY/ANTH/GEOS 5053</td>
<td>Quaternary Environments (Fa)</td>
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<tr>
<td>ENDY/ANTH 6033</td>
<td>Society and Environment (Sp)</td>
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In addition, 18 hours of dissertation research are required.