

Status: PENDING

**PROGRAM REQUEST**  
Environmental & Natural Resources

Last Updated: Myers, Dena Elizabeth  
01/19/2011

|  |  |
|--|--|
| <b>Fiscal Unit/Academic Org</b>                | Sch of Enviro&Natural Res - D1173  |
| <b>Administering College/Academic Group</b>    | Food, Agric & Environ Science  |
| <b>Co-administering College/Academic Group</b> |  |
| <b>Semester Conversion Designation</b>         | Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content) |
| <b>Current Program/Plan Name</b>               | Environmental & Natural Resources  |
| <b>Proposed Program/Plan Name</b>              | Environmental & Natural Resources  |
| <b>Program/Plan Code Abbreviation</b>          | ENVNAT-MEN   |
| <b>Current Degree Title</b>                    | Master of Environment and Naturlal Resources   |

**Credit Hour Explanation**

| Program credit hour requirements                              |         | A) Number of credit hours in current program (Quarter credit hours) | B) Calculated result for 2/3rds of current (Semester credit hours) | C) Number of credit hours required for proposed program (Semester credit hours) | D) Change in credit hours |
|---|---------|---|--|---|---------------------------|
| Total minimum credit hours required for completion of program |         | 55  | 36.7   | 36  | 0.7                       |
| Required credit hours offered by the unit                     | Minimum | 20  | 13.3   | 13  | 0.3                       |
|   | Maximum | 50  | 33.3   | 33  | 0.3                       |
| Required credit hours offered outside of the unit             | Minimum | 5   | 3.3  | 3   | 0.3                       |
|   | Maximum | 35  | 23.3   | 23  | 0.3                       |
| Required prerequisite credit hours not included above         | Minimum | 0   | 0.0  | 0   | 0.0                       |
|   | Maximum | 0   | 0.0  | 0   | 0.0                       |

**Program Learning Goals**

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

- Program Learning Goals**
- The MENR is an applied graduate degree for practicing professionals and others who want to enhance their professional competency in environmental and natural resource science and management.
  - Students will extend their depth of knowledge and expertise in environmental and natural resource science and management beyond that acquired during bachelor's degree programs.
  - Students will improve their decision-making skills.
  - Students will gain educational and training experiences for persons planning for or already engaged in professional environment and natural resources careers.

**Assessment**

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

**Is this a degree program (undergraduate, graduate, or professional) or major proposal? Yes**

**Does the degree program or major have an assessment plan on file with the university Office of Academic Affairs? No**

**DIRECT MEASURES (means of assessment that measure performance directly, are authentic and minimize mitigating or intervening factors)**

**Direct assessment methods specifically applicable to graduate programs**

- Research proposals written and grants awarded
- Thesis/dissertation oral defense and/or other oral presentation
- Thesis/dissertation (written document)

**INDIRECT MEASURES (means of assessment that are related to direct measures but are steps removed from those measures)**

**Additional types of indirect evidence**

- Job or post-baccalaureate education placement

**USE OF DATA (how the program uses or will use the evaluation data to make evidence-based improvements to the program periodically)**

- Meet with students directly to discuss their performance
- Analyze and discuss trends with the unit's faculty

**Program Specializations/Sub-Plans**

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

**Pre-Major**

Does this Program have a Pre-Major? No

**Attachments**

- SENR\_Q2S\_Transition\_Plans.pdf: SENR Transition Policy  
*(Transition Policy. Owner: Hitzhusen, Gregory Ernest)*
- SENRcourseNumbers11-25.xls: SENR course list  
*(List of Semester Courses. Owner: Hitzhusen, Gregory Ernest)*
- ENRgrad\_hdbk2010.pdf: SENR grad handbook-quarter advising  
*(Quarter Advising Sheet(s). Owner: Hitzhusen, Gregory Ernest)*
- SENR\_Assessment.doc: SENR prelim. assessment plan  
*(Other Supporting Documentation. Owner: Hitzhusen, Gregory Ernest)*
- SENRcoverLetterFinal.pdf: SENR cover letter  
*(Letter from Program-offering Unit. Owner: Hitzhusen, Gregory Ernest)*

**Comments**

- Note: misspelling of Current Degree Title above should be corrected ("Natural" should be "Natural").

Advising Sheets do not apply to ENR graduate degree programs. Program information and rationale is contained in the ENR Graduate Program Handbook, attached and found at: [http://senr.osu.edu/images/ENRgrad\\_hdbk2010.pdf](http://senr.osu.edu/images/ENRgrad_hdbk2010.pdf).

The handbook will be revised to reflect semester programs during the spring of 2011.

Course list includes all SENR semester courses, grad and undergrad.

Field of Study areas include:

Environmental Science Education

Environmental Law and Policy

Environmental and Natural Resources Administration

Environmental Impact and Ecosystem Restoration

Environmental Monitoring and Assessment

Forestry, Fish, and Wildlife Management

Environmental Science and Management

Environmental Science Education

And more! (by Hitzhusen, Gregory Ernest on 12/10/2010 03:19 PM)

**Workflow Information**

| Status             | User(s)                   | Date/Time           | Step                   |
|--------------------|---------------------------|---------------------|------------------------|
| Submitted          | Hitzhusen, Gregory Ernest | 11/26/2010 11:03 PM | Submitted for Approval |
| Revision Requested | Hitzhusen, Gregory Ernest | 12/06/2010 03:54 PM | Unit Approval          |
| Submitted          | Hitzhusen, Gregory Ernest | 12/10/2010 03:19 PM | Submitted for Approval |
| Approved           | Hitzhusen, Gregory Ernest | 12/10/2010 03:20 PM | Unit Approval          |
| Approved           | Pfister, Jill Ann         | 01/14/2011 05:08 PM | SubCollege Approval    |
| Approved           | Pfister, Jill Ann         | 01/14/2011 05:08 PM | College Approval       |
| Approved           | Myers, Dena Elizabeth     | 01/19/2011 10:19 AM | GradSchool Approval    |
| Pending Approval   | Soave, Melissa A          | 01/19/2011 10:19 AM | CAA Approval           |

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To: The Office of Academic Affairs

From: Ron Hendrick, Professor and Director

Date: November 23, 2010

Re: School of Environment and Natural Resources Semester Program Proposals

The faculty and staff of the School of Environment and Natural Resources (SENR) have completed a thorough review and revision of our undergraduate and graduate curricula in preparation for the conversion to semesters, and the SENR faculty has voted to recommend that the Office of Academic Affairs approve the attached semester curriculum proposals. In addition to the work of several curricular sub-committees within the School, the SENR Academic Affairs Committee reviewed and approved all semester conversion plans for undergraduate programs, and the SENR Graduate Studies Committee reviewed and approved plans for the MS, PhD, and MENR graduate programs. SENR faculty approved these semester plans by unanimous vote (25 in favor, 0 opposed, 0 abstentions) on April 16, 2010; subsequent minor revisions and updates to the plans have been approved by SENR curriculum committees as appropriate.

The following outline details the SENR programs proposed for semester: A) conversion, B) new approval, C) deactivation, and D) termination.

#### **A. Existing SENR programs to be converted to semesters include:**

(Note: Rural Sociology programs included below became part of SENR in 2010; program degree codes are in parentheses following program titles; specialization three-letter codes are in parentheses following specializations.)

#### **Four Undergraduate Majors:**

- 1) Environmental Science (ENVSCI-BS): *modified from four to five specializations representing existing focal areas in the major, including Ecosystem Restoration (ECR), Water Science (WTR), Environmental Molecular Science (EMS), Soil Resources and Environmental Sustainability (SOI), and Environmental Science Education (ESE).*
- 2) Forestry, Fisheries, and Wildlife (FFW-BS): *converted as semester equivalent, with appropriate revisions to maintain certification and double-certification options uniquely available (compared with other programs nationally) to students in this major, including Society of American Foresters (SAF) accreditation and The Wildlife Society (TWS) and American Fisheries Society (AFS) certifications. Three-letter specialization codes for FFW specializations (FAS, FOR, FWM, UFW, WFS, WPV, WLS) are detailed in the comment field of the FFW-BS program request.*
- 3) Environmental Policy and Decision Making (ENVPDM-BS): *modified in title (previously Environmental Policy and Management (EPM)) and designating three specializations based on existing focal areas in the major: Climate Change (CCP), International Issues (IIP), and Water Conservation (WCP).*
- 4) Natural Resource Management (NATRESM-BS): *modified in title (previously Parks, Recreation & Tourism (PRT)) and designating three specializations based on existing and emerging focal areas (made possible by the addition of Rural Sociology faculty to SENR in 2010) in the major: Parks and Recreation Management (PRM), Natural Resource Administration and Management (NRA), and Sustainable Agriculture (SAG), with additional focus-area options (non-transcript) aligned with employment opportunities and existing programs in the School: Forestry, Fisheries, Wildlife, Soil and Water, Visitor Services, and Zoo Science and Management.*

#### **Two Undergraduate Minors:**

- 1) Soil Resources (SOILSCI-MN): *converted as semester equivalent.*
- 2) Rural Sociology (RURLSOC-MN): *converted as semester equivalent.*

**Two Graduate Degree Programs:**

- 1) Master of Science (ENVNATR-MS): converted as **semester equivalent**
- 2) Doctor of Philosophy (ENVNATR-PH): converted as **semester equivalent**

The Environment and Natural Resources Graduate Program awards both MS and PhD degrees in seven areas of specialty (all converted as **semester equivalents**):

- Ecological Restoration (ERS)
- Ecosystem Science (ECS)
- Environmental Social Sciences (ESS)
- Rural Sociology (RS)
- Fisheries and Wildlife Science (FWS)
- Forest Science (FS)
- Soil Science (SSC)

**Three Graduate Minors** (all converted as **semester equivalents**):

- 1) Environment and Natural Resources (ENVNATR-GM)
- 2) Soil Science (SOILSCI-GM)
- 3) Rural Sociology (RURLSOC-GM)

**One Professional Degree Program** (converted as **semester equivalent**):

- 1) Master of Environment and Natural Resources (ENVNAT-MEN)

**Three Combined Programs** (all combined programs will be converted as **semester equivalents**, and impose no additional requirements or provisions beyond the requirements of the combined degrees. As such, and abiding all college and university rules of the degree-granting partners, forms for **these combined degrees are not included in these SENR semester electronic program proposals**):

- 1) Combined BS/MS
- 2) Combined BS/MENR
- 3) Dual Degree Program with the John Glenn School of Public Affairs: MS/MAPPM (Master of Arts in Public Policy and Management) or MS/MPA (Master of Public Administration)

**B. New SENR semester programs proposed for approval by OAA:**

Four undergraduate minors have been developed for semesters. Three minors correspond with existing majors in the School; these three minors collectively replace the Natural Resources Management minor. The fourth minor, Sustainable Agriculture, has been developed through the collaboration of Rural Sociology and Soils faculty, together with colleagues from across the College of Food, Agricultural and Environmental Sciences.

**Undergraduate Minors:**

- 1) Environmental Science (ENVSCI-MN)
- 2) Forestry, Fisheries & Wildlife (FFW-MN)
- 3) Society and Environmental Issues (SOCENV-MN)
- 4) Sustainable Agriculture (SUSTAGR-MN)

**C. SENR programs to be deactivated:**

Each listed below is an old program name that has been replaced by current programs listed above, either through revised titles (1-3), or being subsumed as a specialization into the ENR MS and PhD (4-9). With the exception of Rural Sociology, which joined SENR in 2010, each of these changes were effected three or more years ago.

- 1) Fisheries and Wildlife Management (FWMGT-BS)
- 2) Forestry and Urban Forestry (FORUF-BS)
- 3) Human Dimensions in Natural Resources (HDNR-BS)
- 4) Natural Resources (NATRES-PH)
- 5) Natural Resources (NATRES-MS)
- 6) Rural Sociology (RURLSOC-MS)
- 7) Rural Sociology (RURLSOC-PH)

- 8) Soil Science (SOILSCI-PH)
- 9) Soil Science (SOILSCI-MS)

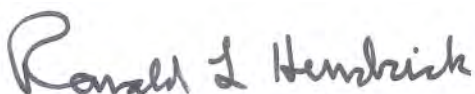
**D. SENR programs to be terminated:**

1) Natural Resources Management Minor (NATRESM-MN): this minor is being terminated because of its broad scope and is being replaced by the more specific new minors listed above that correspond to existing majors.

SENR faculty and staff have worked tirelessly to develop these plans, engaging in a thorough and collegial process. Two faculty retreats devoted significant time to semester conversion plans, and all faculty meetings beginning in the fall of 2009 included updates and discussion about semester conversion planning. Dr. Greg Hitzhusen was appointed by the School as a point person to facilitate Q2S planning, participated in regular UCAT Q2S workshops with colleagues from across the university, and established a Carmen site to share and organize Q2S working documents and resources. In addition to the committees mentioned above, several new committees led the curriculum development process, including four faculty working groups formed within each of the majors, and a core curriculum committee of a dozen faculty representing all of the specializations across the four undergraduate majors and including myself and the chairs of the Grad Studies Committee and Academic Affairs Committee. These groups reviewed all recent SENR curriculum revisions, researched semester programs of peer institutions, and generated creative proposals of how to improve and better integrate our multi-disciplinary curriculum. Curriculum mapping revealed gaps and overlap in our curriculum; to match our semester courses to our learning goals, at least nine new courses have been proposed, several others have been merged, and at least 75 courses will be discontinued. As a previous director of a Natural Resources program that underwent semester conversion at the University of Georgia, I provided guidance to revise SENR's curricular offerings around our core strengths, guided by learning outcome goals and encouraging options beyond existing structures and traditions. Several SENR faculty and staff participated in the College of Food, Agricultural, and Environmental Sciences bi-weekly Q2S Implementation Committee meetings starting in November 2009, sharing planning ideas with Q2S point people from across the College.

We also based our semester curriculum development on several faculty-led research efforts. Our social science faculty created a survey of environmental curriculum interests and career goals for CFAES, SENR and OSU undergraduate student samples, and results from over 1300 respondents (published results now *in press*) informed our vision of student interests, needs, and knowledge about the environmental topics addressed in SENR programs. We also completed phone interviews with SENR alumni and stakeholders to examine curricular elements most valuable to graduates and employers. And I conducted exit interviews of SENR students to better understand their experience in SENR programs. These measures and the efforts mentioned above collectively led the faculty to propose an expanded core of courses to help SENR students better integrate natural and social science elements of the curriculum, and to modify the majors as described above. The core curriculum committee will remain intact to monitor the quality and success of the semester curriculum, and make revisions as appropriate into the future.

This proposed curriculum represents welcome changes that increase the efficiency and complementarity of SENR programs, maximizing the expertise of our faculty and improving opportunities for SENR students to prepare for graduate education and succeed in their professional careers. I have also attached a commentary detailing SENR's preliminary assessment plans for semester programs. These program proposals reflect the outstanding collaborative efforts of SENR faculty to prepare for the semester transition. I heartily recommend approval of these plans, and appreciate OAA's ongoing efforts to strengthen our curriculum in OSU's transition to semesters.



Ronald L. Hendrick, Ph.D.  
Director, SENR

| Unit    | Qtr # plus<br>suffix | Semester #           | Sem units | 1c: Course Title Long  | rank                                      |                                   |
|---------|----------------------|----------------------|-----------|--|---|-----------------------------------|
| ENR     | 100                  | 1000.01, .02,<br>.03 | 1         | Environment and<br>Natural Resources<br>Survey                   | freshman,<br>sophomore,<br>junior, senior |                                   |
| ENR     | 100T                 | 1000T                | 1         | Environment and<br>Natural Resources<br>Survey                   | transfers                                 |                                   |
| ENR     | 100H                 | 1000H                | 1         | Environment and<br>Natural Resources<br>Survey                   | honors<br>freshman                        |                                   |
| ENR     | 101                  | 1010                 | 4         | Soils in Our<br>Environment (Planet<br>Earth - The Fragile Skin) | freshman,<br>sophomore                    |                                   |
| RURLSOC | 105                  | 1500                 | 3         | Introduction to Rural<br>Sociology                               | Freshman,<br>Sophomore,<br>Junior, Senior |                                   |
| ENR     | 119.01               | 1001.01              | 1         | Survey of Park and<br>Policy Careers                             | freshman,<br>sophomore,<br>junior, senior | 119 is<br>merged w<br>100 as 1000 |
| ENR     | 119.02               | 1001.02              | 1         | Professional Survey of<br>Forestry, Fisheries and<br>Wildlife    | freshman,<br>sophomore                    | 119 is<br>merged w<br>100 as 1000 |
| ENR     | 119.03               | 1001.03              | 1         | Professional Survey of<br>Environmental Science                  | freshman,<br>sophomore,<br>junior, senior | 119 is<br>merged w<br>100 as 1000 |

|     |        |      |        |   |   |
|-----|--------|------|--------|---|---|
| ENR | 155    | 2155 | 4      | Energy and Environment                                  | freshman,<br>sophomore,<br>junior, senior       |
| ENR | 201    | 2100 | 3      | Introduction to<br>Environmental Science                | freshmen,<br>sophomores,<br>juniors,<br>seniors |
| ENR | 203    | 2300 | 3      | Society and Natural<br>Resources                        | Freshmen,<br>Sophomores                         |
| ENR | 221    | 3321 | 3      | Biology and<br>Identification of Woody<br>Forest Plants | freshman,<br>sophomore,<br>junior, senior       |
| ENR | 222    | 2000 | 3      | Natural Resources Data<br>Analysis                      | Sophmores                                       |
| ENR | 230    | 2360 | 3      | Ecology and<br>Conservation of Birds                    | Freshman,<br>Sophomore,<br>Junior and<br>Senior |
| ENR | 232    | 2320 | 3      | Landscape Maintenance                                   | Freshman,<br>Sophomore,<br>Junior, Senior       |
| ENR | 289    | 2191 | 1 or 2 | Natural Resources<br>Practicum                          | sophomore,<br>junior, senior                    |
| ENR | 300.01 | 3000 | 3      | Soil Science  | sophomore,<br>junior, senior                    |



|     |        |      |   |   |   |
|-----|--------|------|---|---|---|
| ENR | 300.02 | 3001 | 1 | Soil Science Laboratory   | sophomore,<br>junior, senior              |
| ENR | 3XX    | 3400 | 3 | Psychology of<br>Environmental Problems   | Freshman,<br>Sophomore,<br>Junior         |
| ENR | 311    | 3611 | 2 | Foundations for<br>Environmental<br>Communications,<br>Education and<br>Interpretation                | Soph,Junior,Se<br>nior                    |
| ENR | 319    | 3300 | 3 | Introduction to Forestry<br>Fisheries and Wildlife  | freshman,<br>sophomore,<br>junior, senior |
| ENR | 322    | 3322 | 3 | Forest Ecosystems   | freshman,<br>sophomore,<br>junior, senior |
| ENR | 323    | 3323 | 3 | Forest Biometrics   | sophomore                                 |
| ENR | 324.01 | 3750 | 3 | Natural Resources<br>Photointerpretation-<br><b>Applied Remote Sensing<br/>for Natural Resources.</b> | junior, senior                            |
| ENR | 324.02 | 3700 | 2 | Introduction to Spatial<br>Information for Natural<br>Resources                                       | sophomore,<br>junior, senior              |
| ENR | 333    | 3333 | 3 | Silviculture  | freshman,<br>sophomore,<br>junior, senior |

|         |        |         |   |   |                                     |                                  |
|---------|--------|---------|---|---|-------------------------------------|----------------------------------|
| ENR     | 340    | 3600    | 2 | Management of Public Lands  | sophomore, junior                   |                                  |
| ENR     | 347    | 3470    | 3 | Religion and Environmental Values in America (proposed course)        | sophomore, junior                   |                                  |
| ENR     | 350.01 | 3335.01 | 2 | Introduction to Wildland Fire Management                              | freshman, sophomore, junior, senior |                                  |
| ENR     | 350.02 | 3335.02 | 1 | Wildland Fire Management Laboratory                                   | freshman, sophomore, junior, senior |                                  |
| ENR     | 355    | 3280    | 2 | Water Quality Management  | sophomore                           |                                  |
| ENR     | 567    | 2367    | 3 | Communicating Contemporary Environmental and Natural Resources Issues | freshman, sophomore, junior         | old 567 converted to new GE 2367 |
| RURLSOC | 378    | 3580    | 3 | Social Groups in Developing Societies                                 | freshman, sophomore, junior, senior |                                  |
| ENR/RS  | 3xy    | 3500    | 3 | Community, Environment and Development                                | fresman, sophomore, junior, senior  |                                  |

|        |     |      |        |   |  |
|--------|-----|------|--------|---|--|
| WS/ENR | 3xx | 3530 | 3      | Women, Environment and Development                | freshman, sophomore, junior, senior                                  |
| ENR    | 400 | 4000 | 3      | Natural Resources Policy                          | sophomore, junior, senior  |
| ENR    | 410 | 4611 | 3      | Environmental Interpretation and Visitor Services | Soph, Junior, Senior   |
| ENR    | 415 | 4360 | 2      | Zoo Science and Management                        | junior, senior   |
| ENR    | 432 | 4320 | 3      | Sustainable Forest Products                       | junior, senior   |
| ENR    | 442 | 4260 | 3      | Soil Management                                   | junior, senior   |
| ENR    | 448 | 4648 | 3      | Natural Resources Law Enforcement                 | sophomore, junior, senior  |
| ENR    | 494 | 4194 | 1 to 3 | Group Studies                                     | freshman, sophomore, junior, senior, masters, doctoral, professional |
| ENR    | 510 | 4610 | 3      | Natural History of Ohio                           | freshman, sophomore, junior, senior, graduate                        |

|         |        |         |   |  |   |
|---------|--------|---------|---|--|---|
| ENR     | 540    | 5272    | 3 | Urban and Sports Turf Soils                              | junior, senior, graduate                        |
| RURLSOC | 542    | 4500    | 3 | Leadership and Community Development                     | Freshman, Sophomore, Junior and Senior          |
| ENR     | 580    | 5270    | 3 | Soil Fertility and Fertilizers                           | Seniors, Masters                                |
| ENR     | 590H   | 4890H   | 1 | Honors Colloquium  | Junior  |
| ENR     | 597    | 4597    | 3 | Contemporary Issues in Environment and Natural Resources | junior, senior, masters, doctoral, professional |
| ENR     | 601    | 5210    | 3 | Evaluation of Environmental Impact                       | junior, senior, masters, doctoral, professional |
| ENR     | 602    | 5211    | 3 | International Environmental Impact Assessment            | junior, senior, masters, doctoral, professional |
| ENR     | 606.01 | 4900.01 | 3 | Natural Resources Management                             | Senior  |

|         |        |         |   |  |  |
|---------|--------|---------|---|--|--|
| ENR     | 606.02 | 4900.02 | 3 | Natural Resources Management for Forestry Fisheries and Wildlife | junior, senior   |
| ENR     | 618    | 5222    | 3 | Ecological Engineering and Ecosystem Restoration                 | junior, senior, masters, doctoral, professional            |
| ENR     | 620    | 5342    | 3 | Principles of Fisheries Ecology and Management                   | sophomore, junior, senior, masters, doctoral, professional |
| ENR     | 622    | 5280    | 4 | Stream Ecology   | sophomore, junior, senior, masters, doctoral, professional |
| RURLSOC | 622    | 5520    | 3 | Amish Society Principles of Wildlife Ecology and Management      | Freshman, Sophomore, Junior, Senior                        |
| ENR     | 623    | 5360    | 3 | Mammalian Wildlife Biology and Management                        | ranks 3+   |
| ENR     | 624A   | 5364.01 | 3 | Avian Wildlife Biology and Management                            | junior or senior   |
| ENR     | 624B   | 5364.02 | 3 | Avian Wildlife Biology and Management                            | junior or senior   |

|     |      |         |   |  |  |
|-----|------|---------|---|--|--|
| ENR | 625  | 5370    | 2 | Management of Wildlife Habitat                 | junior or senior   |
| ENR | 626  | 5345    | 4 | Methods in Aquatic Ecology                     | sophomore, junior, senior, masters, doctoral, professional |
| ENR | 627  | 5350.01 | 3 | Taxonomy and Behavior of Aquatic Invertebrates | sophomore, junior, senior, masters, doctoral, professional |
| ENR | 627x | 5350.02 | 3 | Taxonomy and Behavior of Fishes                | sophomore, junior, senior, masters, doctoral, professional |
| ENR | 628  | 5355    | 3 | Aquaculture                                    | junior, senior, masters, doctoral                          |
| ENR | 629  | 5375    | 2 | Ecology and Management of Wetlands Birds       | senior, masters, doctoral, professional                    |
| ENR | 630  | 5271    | 3 | Soils of Forest Ecosystems                     | Juniors, Seniors, Masters                                  |

|     |      |       |   |   |  |
|-----|------|-------|---|---|--|
| ENR | 631  | 5322  | 3 | Arboriculture   | seniors,<br>masters,<br>doctoral,<br>professional        |
| ENR | 635  | 5320  | 3 | Forest Management   | seniors,<br>masters,<br>doctoral,<br>professional        |
| ENR | 640  | 5640  | 4 | Natural Resources<br>Program Planning I   | junior, senior,<br>masters                               |
| ENR | 642  | 5642  | 3 | Natural Resources<br>Administration   | Junior, Senior,<br>Masters                               |
| ENR | 648H | 5448H | 3 | Tragedy of the<br>Commons?<br>Environment,<br>Government and<br>Collective Action | junior, senior,<br>masters,<br>doctoral,<br>professional |
| ENR | 649  | 5649  | 3 | Wildlife Conservation<br>Policy   | junior, senior,<br>masters,<br>doctoral,<br>professional |
| ENR | 650  | 5260  | 3 | Soil Landscapes:<br>Morphology, Genesis<br>and Classification                     | junior, senior,<br>masters,<br>doctoral                  |

|         |     |      |   |  |  |  |
|---------|-----|------|---|--|--|--|
| ENR     | 651 | 6451 | 3 | Water Law  | senior,<br>masters,<br>doctoral,<br>professional         | was Water<br>Resources<br>Institutions<br>and Policies |
| ENR     | 655 | 5261 | 3 | The Soil Physical<br>Environment   | senior,<br>masters,<br>doctoral,<br>professional         | 671 is also<br>absorbed<br>into 5261                   |
| ENR     | 656 | 5220 | 2 | Ecosystems of the<br>World: Temperate,<br>Boreal and High Latitude<br>Ecosystems | senior,<br>masters,<br>doctoral,<br>professional         |  |
| ENR     | 660 | 5262 | 3 | Soil Chemical Processes<br>and Environmental<br>Quality                          | Junior, senior,<br>masters,<br>doctoral,<br>professional |  |
| ENR     | 662 | 5362 | 3 | Wildlife Ecology Methods   | junior<br>doctoral,mast<br>ers,<br>professional,s        |  |
| RURLSOC | 662 | 5500 | 3 | Diffusion of Innovations   | enior,junior   |  |
| ENR     | 665 | 5263 | 3 | Biology of Soil<br>Ecosystems  | junior, senior,<br>masters,<br>doctoral                  |  |



|         |      |       |        |   |  |
|---------|------|-------|--------|---|--|
| RURLSOC | 666  | 6500  | 3      | Rural Poverty   | doctoral, professional, masters, senior, junior            |
| ENR     | 675  | 5273  | 3      | Environmental Fate and Impact of Contaminants in Soil and Water | Junior, senior, masters, doctoral, professional            |
| RURLSOC | 678  | 5570  | 3      | Women in Rural Society  | doctoral, masters, professional, junior, senior, sophomore |
| ENR     | 683H | 4683H | 3      | Honors Project  | junior, senior   |
| RURLSOC | 688  | 5580  | 3      | Social Impact Assessment of Domestic Development                | junior, senior, masters, doctoral                          |
| ENR     | 689  | 4191  | 3      | Professional Practice in Natural Resources                      | freshman, sophomore, junior, senior                        |
| ENR     | 693  | 4193  | 1 to 3 | Individual Studies in Environment and Natural Resources         | freshman, sophomore, junior, senior                        |

|     |        |         |         |  |   |  |
|-----|--------|---------|---------|--|---|--|
| ENR | 694    | 4194    | 1 to 3  | Group Studies  | freshman,<br>sophomore,<br>junior, senior,<br>masters,<br>doctoral,<br>professional |  |
| ENR | 697    | 5797    | 1 to 15 | Long-term Study Abroad   | junior, senior,<br>masters,<br>doctoral,<br>professional                            | was Study at<br>a Foreign<br>Institution |
| ENR | 7XX    | 7400    | 2       | Communicating<br>Environmental Risk                                  | Masters,<br>Doctoral,<br>Professional   |  |
| ENR | 720    | 5265    | 2       | Characterization of Soil<br>in the Field and<br>Laboratory: Sampling | junior, senior,<br>masters,<br>doctoral,<br>professional                            |  |
| ENR | 725.01 | 5250.01 | 3       | Wetland Ecology and<br>Restoration                                   | senior,<br>masters,<br>doctoral,<br>professional                                    |  |
| ENR | 725.02 | 5250.02 | 1       | Wetland Field Laboratory   | senior,<br>masters,<br>doctoral,<br>professional                                    |  |

|         |     |      |   |   |   |
|---------|-----|------|---|---|---|
| ENR     | 730 | 5274 | 2 | Computer Simulation of Soil Hydrological and Biogeochemical Processes | junior, senior, masters, doctoral, professional |
| ENR     | 731 | 7310 | 2 | Principles and Applications of Forest Ecosystem Restoration           | Masters, doctoral                               |
| ENR     | 733 | 7333 | 3 | Successional Dynamics of Forests                                      | masters, doctoral                               |
| RURLSOC | 733 | 5530 | 3 | Sociology of Agriculture and Food Systems                             | masters, doctoral, professional                 |
| ENR     | 734 | 5340 | 3 | Forest Ecosystem Management   | Senior, masters, doctoral, professional         |
| ENR     | 736 | 5325 | 3 | Public Forest and Lands Policy  | junior, senior, masters, doctoral, professional |
| ENR     | 738 | 7380 | 3 | Climate and Society   | Masters, Doctoral, some seniors                 |
| ENR     | 740 | 5266 | 3 | Field Soil Investigation: Soil Chemistry, Fertility and Biology       | junior, senior, masters, doctoral, professional |

|         |     |      |   |  |   |
|---------|-----|------|---|--|---|
| RURLSOC | 742 | 7420 | 3 | Concepts and Theories in Rural Sociology | seniors, masters, doctoral                      |
| RURLSOC | 744 | 5540 | 3 | Rural Sociology Demography               | junior, senior, masters, doctoral, professional |
| ENR     | 750 | 7500 | 3 | Resolving Social Conflict                | masters, doctoral, professional                 |
| ENR     | 752 | 7520 | 3 | Environmental Science and Law            | senior, masters, doctoral, professional         |
| ENR     | 753 | 7530 | 4 | Soil Mineralogy                          | seniors, masters, doctoral                      |
| ENR     | 756 | 5560 | 2 | Rehabilitation/Restoration of Ecosystems | seniors, masters, doctoral, professional        |
| ENR     | 760 | 5225 | 3 | Ecosystem Modeling                       | junior, senior, masters, doctoral, professional |

|         |     |      |   |   |   |
|---------|-----|------|---|---|---|
| ENR     | 761 | 6610 | 2 | Soil and Environmental Biochemistry                                     | masters, doctoral, professional (junior, senior possible) |
| RURLSOC | 766 | 7560 | 3 | Environmental Sociology   | Masters, doctoral, professional                           |
| ENR     | 770 | 7700 | 3 | Watershed Ecology and Restoration                                       | masters, doctoral   |
| RURLSOC | 788 | 7542 | 3 | The Change Agent: Sociological Theory Applied to Domestic Development   | Masters, Doctoral, Professional                           |
| ENR     | 812 | 8120 | 2 | Spatial Methods in Natural Resources                                    | masters, doctoral, professional                           |
| ENR     | 815 | 8150 | 3 | Advanced Environment, Risk and Decision Making                          | Masters, Doctoral, Professional                           |
| ENR     | 822 | 8780 | 3 | Quantitative Methods for Natural Resources                              | masters, doctoral, professional                           |
| ENR     | 835 | 8350 | 3 | Ecosystem Management Policy   | masters, doctoral, professional                           |
| ENR     | 840 | 8400 | 2 | Theoretical Foundations in the Human Dimensions of Ecosystem Management | masters, doctoral, professional                           |

|         |        |         |        |   |  |
|---------|--------|---------|--------|---|--|
| ENR     | 851    | 8510    | 3      | Human Dimensions<br>Theory Building in<br>Natural Resources | masters,<br>doctoral                             |
| ENR     | 871    | 8710    | 3      | Soils and Climate<br>Change                                 | Masters,<br>Doctoral,<br>Professional            |
| ENR     | 880    | 8980    | 1      | Natural Resources<br>Seminar                                | masters,<br>doctoral,<br>professional            |
| RURLSOC | 888    | 7580    | 3      | Social Action in<br>Community<br>Development                | masters,<br>doctoral,<br>professional            |
| RURLSOC | 892    | 8500    | 3      | Rural Sociology of<br>Development and Social<br>Change      | masters,<br>doctoral,<br>professional<br>senior, |
| ENR     | 894    | 5240    | 2      | Environmental Molecular<br>Sciences                         | masters,<br>doctoral                             |
| ENR     | 897    | 8897    | 1      | Research Proposal<br>Symposium                              | graduate   |
| ENR     | 899.01 | 8890.01 | 1 to 4 | Fish and Wildlife<br>Management Seminar                     | graduate   |
| ENR     | 899.02 | 8890.02 | 1 to 4 | Watershed Ecology and<br>Management Seminar                 |  |
| ENR     | 899.03 | 8890.03 | 1 to 4 | Environmental Science<br>Seminar                            | graduate   |
| ENR     | 899.04 | 8890.04 | 1 to 4 | Soil Science Seminar  | graduate   |
| ENR     | 899.05 | 8890.05 | 1 to 4 | Forest Science and<br>Management Seminar                    | graduate   |

|     |        |         |         |   |                                      |
|-----|--------|---------|---------|---|--------------------------------------|
| ENR | 899.06 | 8890.06 | 1 to 4  | Environmental Policy and Decision-Making Seminar  | graduate                             |
| ENR | 899.07 | 8890.07 | 1 to 4  | Environmental Education and Communication Seminar | graduate                             |
| ENR | 899.08 | 8890.08 | 1 to 4  | Parks and Recreation Management Seminar           | graduate                             |
| ENR | 985    | 8785    | 3       | Research Paradigms                                | masters,<br>doctoral                 |
| ENR | 999    | 8999    | 3 to 15 | Research  | professional<br>Masters,<br>doctoral |

# The Environment and Natural Resources Graduate Program Handbook



September 2010



**School of Environment and Natural Resources**  
College of Food, Agricultural, and Environmental Sciences





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## Deadlines for Master of Science Degree

Appeals for extention of these deadlines must be submitted in writing to the Graduate Studies Committee chair, must include a justification for the extension, and must be signed by both the student and the advisor. Environment and Natural Resources Graduate Program Handbook section numbers are shown in parentheses.

| Quarter              | Action   |
|----------------------|--|
| 1<br>Autumn          | 1) Take ENR 800 (2.6.1)<br>2) Take ENR 880 (2.6.1)   |
| 2<br>Winter          | 1) Take ENR 880 (2.6.1)<br>2) Appoint an Advisory/Examination Committee (2.5)<br>3) Select a Thesis topic (2.7.1)<br>4) Submit signed <b>Thesis Topic and Advisory Committee</b> form to the graduate program office by the fifth Friday of the quarter (2.5)<br>5) Submit signed <b>Program of Study*</b> to the graduate program office by end of quarter (2.6.4)<br>6) Work with advisor and Advisory/Examination Committee on <b>Thesis Proposal</b> (2.7.1)   |
| 3<br>Spring          | 1) Take ENR 880 (2.6.1)<br>2) Take ENR 897 (2.6.1)<br>3) Submit the signed <b>Master's Proposal</b> form and the <b>Thesis Proposal*</b> to the graduate program office by the end of the quarter (2.7.1)<br>4) Remove all conditions of admission (8.9)   |
| 4<br>Summer          | 1) Research and course work  |
| 5<br>Autumn          | 1) Research and course work<br>2) Take ENR 880 (2.6.1)   |
| 6<br>Winter          | 1) Research and course work<br>2) Take ENR 880 (2.6.1)   |
| 7 or 8<br>Graduation | 1) Submit current <b>Thesis Abstract</b> and the <b>Application to Graduate</b> form to the graduate program office prior to the first Friday of the expected quarter of graduation (2.7.3)<br>2) Submit the signed <b>Application to Graduate</b> form to the Graduate School by the 2nd Friday of the expected quarter of graduation (2.9)<br>3) Submit the <b>Exit Seminar</b> form (and the <b>Request for Video Conferencing</b> form, if needed) to the graduate program office no later than two weeks prior to the date of the seminar/master's examination (2.8.1)<br>4) Take the <b>Master's Examination</b> during regular business hours prior to the published deadline for graduation. See the Graduation Calendar on the <a href="#">Graduate School website</a> .**<br>5) Submit the original, signed <b>Master's Examination Report</b> form to the Graduate School and submit a copy to the graduate program office by the published deadline. (2.8.1)<br>6) Go to the Graduate School during business hours for a thesis format check with Graduation Services<br>7) Submit final thesis online (see the <a href="#">Graduate School website</a> for instructions). Once it is accepted by the Graduate School, submit the original, signed <b>Thesis Approval</b> form to the Graduate School and submit a copy to the graduate program office by the published deadline<br>8) Submit the final <b>Thesis Abstract</b> via email to the graduate program office<br>9) Graduate** and answer exit questionnaire from the graduate program office via email.<br>Congratulations! |

\* Program of Study and Thesis Proposal may be amended at any time with the written approval of the student's advisor and Advisory/Examination Committee and the Graduate Studies Committee (2.6.6)

\*\*End of Quarter: If you complete all requirements for your degree and submit all required documents to the Graduate School by the last business day prior to the first day of classes for the following quarter, you may graduate the following quarter without registering or paying fees. Because your degree will be conferred the following quarter, your title page must show the actual quarter of graduation.

Revised September 2010





## Deadlines for Doctoral Degree

Appeals for extention of these deadlines must be submitted in writing to the Graduate Studies Committee chair, must include a justification for the extension, and must be signed by both the student and the advisor. Environment and Natural Resources Graduate Program Handbook section numbers are shown in parentheses.

| Quarter     | Action  |
|-------------|---|
| 1<br>Autumn | 1) Take ENR 880 (3.8.2).<br>2) Work with advisor to explore Area of Specialization and dissertation topic (3.2, 3.16).  |
| 2<br>Winter | 1) Take ENR 880 (3.8.2).<br>2) Take ENR 985 (3.8.2).<br>3) Appoint an advisory/examination committee (3.7).<br>4) Select a dissertation topic (3.4, 3.16).<br>5) Submit the signed <b>Dissertation Topic and Advisory Committee</b> form to the graduate program office by the fifth Friday of the quarter. Upon receipt of this form, the Graduate Studies Committee chair will coordinate with your advisor to select the SENR Program Representative to the Advisory/Examination Committee (in addition to the required three members) who will be present until the Candidacy Exam (3.7).   |
| 3<br>Spring | 1) Take ENR 880 (3.8.2).<br>2) Submit the signed <b>Program of Study*</b> form to the graduate program office by the end of the quarter (3.8). Please note that Regular PhD and Direct-Admit PhD students have different program of study requirements and different forms.<br>3) Remove all conditions of admission (8.9).   |
| 4<br>Summer | 1) Research and course work.  |
| 5<br>Autumn | 1) Research and course work including ENR 880 (3.8.2).<br>2) Submit the signed <b>Ph.D. Proposal</b> form and the <b>Dissertation Proposal*</b> to the graduate program office by the fifth Friday of the quarter (3.16.2).   |
| 6<br>Winter | 1) Research and course work including ENR 880 (3.8.2).<br>2) Direct-Admit PhD: submit Scholarly Paper Proposal form<br>3) Regular PhD: take <b>Candidacy Exam</b> (recommended target).<br>4) Submit the <b>Notification of Doctoral Candidacy Examination</b> form to the graduate program office at least one month prior to the examination so that your record may be audited by the Graduate Studies Committee. The advisor must report the details of format, schedule, and evaluation procedure in writing to the Graduate Studies Committee not fewer than two weeks prior to the beginning of the written portion (3.13).<br>5) Submit the signed <b>Notification of Doctoral Candidacy Examination</b> form to the Graduate School at least two weeks prior to the oral portion. After the examination, submit the original, signed <b>Candidacy Examination Report</b> form to the Graduate School and submit a copy to the graduate program office (3.13).<br>6) Present a <b>Research Seminar</b> in the SENR Seminar Series on any topic related to your dissertation. Students may give the Research Seminar anytime between candidacy and the quarter of graduation (3.15). |

| Quarter               | Action   |
|-----------------------|--|
| 7<br>Spring           | 1) Regular PhD: Research; may present a Research Seminar in the SENR Seminar Series (see #6 in quarter 6).<br>2) Direct-Admit PhD: Submit final scholarly paper approved by Advisory/Examination Committee to the Graduate Studies Committee.  |
| 8<br>Summer           | 1) Research  |
| 9<br>Autumn           | 1) Regular PhD: Research; may present a Research Seminar in the SENR Seminar Series (see #6 in quarter 6).<br>2) Direct-Admit PhD: Take Candidacy Exam (recommended target). Submit Notification of Doctoral Candidacy Examination form to the graduate program office at least one month prior to the examination so that your record may be audited by the Graduate Studies Committee. Your advisor must report the details of format, schedule, and evaluation procedure in writing to the Graduate Studies Committee not fewer than two weeks prior to the beginning of the written portion (3.14.2). Submit the signed Notification of Doctoral Candidacy Examination form to the Graduate School at least two weeks prior to the oral portion. After the examination, submit the original, signed Candidacy Examination Report form to the Graduate School and submit a copy to the graduate program office (3.14).  |
| 10-16                 | 1) Research<br>2) May present a Research Seminar in the SENR Seminar Series (except Summer quarters, see #6 in quarter 6).   |
| Graduation<br>Quarter | 1) Submit current <b>Dissertation Abstract</b> and the <b>Application to Graduate</b> form to the graduate program office prior to the first Friday of the expected quarter of graduation (3.19.4).<br>2) Submit the signed <b>Application to Graduate</b> form to the Graduate School by the 2nd Friday of the expected quarter of graduation (3.18).<br>3) Submit the completed dissertation draft to your Advisory/Examination Committee no later than three weeks prior to the Final Examination (3.16.3).<br>4) Submit the signed <b>Draft Approval/Notification of Final Oral Examination</b> form to the Graduate School and a copy to the graduate program office no later than two weeks prior to the Final Examination. Go to the Graduate School during business hours for a dissertation format check with Graduation Services (3.16.4).<br>5) Submit the <b>Exit Seminar</b> form for the open portion of the Final Oral Examination to the graduate program office with the <b>Draft Approval/Notification of Final Oral Examination</b> form (3.17.1).<br>6) Take the Final Examination during regular business hours prior to the published deadline for graduation. See the Graduation Calendar on the <a href="#">Graduate School website</a> .**<br>7) Submit the original, signed <b>Final Examination Report</b> form to the Graduate School and submit a copy to the graduate program office by the published deadline (3.17).<br>8) Submit final dissertation online (see the <a href="#">Graduate School website</a> for instructions). Once it is accepted by the Graduate School, submit the original signed <b>Final Approval</b> form to the Graduate School and submit a copy to the graduate program office by the published deadline.<br>9) Submit the final <b>Dissertation Abstract</b> via email to the graduate program office.<br>10) Graduate** and answer exit questionnaire from the graduate program office via email.<br>Congratulations! |

\* Program of Study and Dissertation Proposal may be amended at any time with the written approval of the student's advisor and Advisory/Examination Committee and the Graduate Studies Committee (3.8, 3.16).

\*\*End of Quarter: If you complete all requirements for your degree and submit all required documents to the Graduate School by the last business day prior to the first day of classes for the following quarter, you may graduate the following quarter without registering or paying fees. Because your degree will be conferred the following quarter, your title page must show the actual quarter of graduation.

## A COMMUNITY OF SCHOLARS

The Environment and Natural Resources Graduate Program is the academic home for a group of faculty and graduate students who share a common interest in improving our understanding of the environment, our natural resources, and our ability to protect and manage them. These faculty and students are engaged in research, education, and learning in a variety of areas in the natural and social sciences. This diverse and interdisciplinary group is unified by a commitment to intellectual rigor and a common definition and standard for scholarship.

### SCHOLARSHIP

Scholarship involves developing an understanding of what is known and not known about a subject, proposing new ideas about that subject, studying those ideas by using appropriate scientific methods, drawing conclusions about the findings from those studies, and communicating those conclusions in critically reviewed publications. The goal of this scholarly effort is to expand the body of knowledge in a given field.

Both the Master of Science and the Doctor of Philosophy degree programs adhere to this definition for scholarship.

At the M.S. level, the creative idea for investigation may originate with the student's advisor, but the student must demonstrate that he/she has made a rigorous attempt to familiarize himself/herself with literature relevant to the research topic, identify questions that can realistically be pursued as a master's thesis, design and carry out appropriate studies or experiments to address those questions, analyze the results of those studies or experiments, and incorporate those results into a coherent master's thesis.

At the Ph.D. level, the expectation is that students will make an original contribution to the body of knowledge. To do so, doctoral students are expected to formulate research questions that probe the limits of what is known, identify the major issues involved, and develop a thorough understanding of the relevant theory bases and methodologies. Further, they are expected to demonstrate creativity in research design and critical rigor in analyzing and discussing their findings. Students completing the Ph.D. program should be able to pursue independent scholarly research.

## OUR HISTORIC ROOTS

The programs of the School of Environment and Natural Resources at The Ohio State University and similar programs at other universities trace their roots back to the end of the nineteenth century when concern over the rapid depletion of forests led to the passage of the Federal Forest Reserve Act of 1891. Beginning in the 1890s a number of political actions were taken to initiate and promote conservation, and in 1905 Congress created the U.S. Forest Service within the Department of Agriculture. The purpose of this new agency was not to eliminate logging, but to manage our forests in such a manner that yields would be sustainable, hopefully forever.

During this period, those concerned about the depletion of forest resources and those responsible for implementing the Federal Forest Reserve Act found that expertise on such matters was scarce in the United States. Foresters were imported from France and Germany, and Americans who wanted to study forestry travelled to Europe. The first formal American forestry educational programs were initiated at Cornell and Yale Universities in the late 1890s, the latter for the specific purpose of training foresters for employment in federal agencies.

As concern about the depletion of other natural resources grew in the early part of the 20th century, federal and state agencies were created, most notably the U.S. Park Service (1916) and the U.S. Fish and Wildlife Service formed by a redefinition of the Bureau of Biological Survey during the 1930s. Universities responded by developing educational and research programs in forestry, wildlife, fisheries, and range management, typically within colleges of agriculture at land-grant institutions. Forestry programs produced foresters for the U.S. Forest Service and for similar agencies at the state level. Wildlife programs trained professionals for the U.S. Fish and Wildlife Service and wildlife management agencies at the state level, and parks and recreation programs did the same for the U.S. and state park services. This focus on individual resources or commodities in both the federal and state agencies and in the universities persisted for nearly fifty years. Foresters worked on producing trees, wildlife managers focused on producing deer, turkeys, elk and other game animals, and fisheries specialists worked to enhance our fisheries resources and make sure that lakes and rivers were stocked with prize species for fishermen.

This system of managing our renewable natural resources began to change in the late 1960s when certain agency leaders and faculty at some universities began to reorient their efforts toward "integrated natural resource management." This shift away from single commodity science and management reflected our growing awareness that a forest was not simply a collection of trees or potential logs; it was an integrated ecological system. The U.S. Forest Service was one of the first agencies to adopt integrated resource management as an agency focus. This movement and similar shifts at other agencies created a need for integrative education at our schools and departments of natural resources, forestry, etc.

The School of Natural Resources at Ohio State University was created in 1968 at the beginning of this shift toward integrated resource science and management and was organized purposefully as a broad, interdisciplinary school to address the integration challenge. This focus on integration was reflected in the breadth of our faculty and the structure of our undergraduate and graduate programs.

Beginning in the mid-1980s the focus of the School was broadened beyond the traditional natural resource areas of Forestry, Wildlife and Fisheries, and Parks and Recreation to include the areas of ecology, environmental science, and the growing concern about the health of the global environment. The last significant expansion of the School occurred in 1994 when the Soil Science Program moved from the Agronomy Department to become part of the School. The School was renamed the School of Environment and Natural Resources in 2005 and the School's graduate program was renamed in 2008 to reflect the new name of the School.

## 1. THE ENVIRONMENT AND NATURAL RESOURCES GRADUATE PROGRAM

The Environment and Natural Resources Graduate Program offers a non-thesis Master of Environment and Natural Resources (MENR) as well as a thesis Master of Science and a Doctor of Philosophy in six Areas of Specialization: Ecological Restoration, Ecosystem Science, Environmental Social Sciences, Fisheries and Wildlife Science, Forest Science, and Soil Science. Within these Areas of Specialization, students can pursue graduate degrees in the M.S. and Ph.D. programs. MENR students may adhere to similar areas of specialization or follow an individualized area of specialization.

**Ecological Restoration:** Human domination of ecosystems worldwide has rendered vast areas of land and many water bodies degraded to the point that they cannot support plant and animal growth. The new field of ecological restoration has as its goal the restoration, revitalization, and reuse of disturbed, disrupted and contaminated sites, based on ecological principles. The goal is not to duplicate exactly what was there before disturbance, but to restore the ecological processes that will enable the ecosystem to change and adapt as environmental conditions change. The focus is on function more than form.

**Ecosystem Science:** Ecosystem science is the study of biotic and abiotic factors and their interaction within an ecosystem. Ecosystem science is firmly grounded in ecological theory, and theory is a significant component of our research efforts. This program also has an applied focus that examines how ecosystem functions produce and maintain products and services of importance to human societies, e.g. water purification in wetlands. In this context, ecosystem science provides a powerful framework for identifying ecological mechanisms underlying environmental problems such as: problems of land degradation, water pollution, and loss of species and habitat.

**Environmental Social Sciences:** A productive society is marked by its harmony with a sustainable and healthy environment: changing climate, energy policies, global food and water distribution, economic and social development to conserve habitat and biodiversity. In this world of unprecedented environmental challenges the common core is inextricably linked to human values. Within the Environmental Social Sciences (ESS)

graduate specialization, students learn how to build scientific understanding of these issues, identify potential responses and evaluate their consequences, and, ultimately, decide how and when to take action. Students work with faculty who study how people value and use the environment and natural resources, make decisions about, and design policies to address environmental and natural resources issues.

**Fisheries and Wildlife Science:** Fish and wildlife biology is a long-standing and well-recognized sub-discipline within the broader field of natural resources. Students specializing in Fisheries and Wildlife Science have opportunities to build expertise in diverse fields including wildlife ecology, wildlife management, fisheries management, fisheries ecology, conservation biology, population and community ecology, avian ecology and conservation.

**Forest Science:** Forest science is a well-recognized and long-standing academic discipline dating to the first forestry schools that were established in the U.S. over a century ago. The Forest Science graduate area of specialization in the School of Environment and Natural Resources at The Ohio State University is the only graduate program in forest science in the state of Ohio. Our program brings together foresters, ecologists, hydrologists, and social scientists to conduct fundamental research on forest ecosystems, social systems, and their interactions. We endeavor to educate the next generation of scientists, managers, and users of forest resources who seek to develop innovative and integrative approaches to sustainably manage and protect forest ecosystems and the important ecosystem services they provide.

**Rural Sociology:** Rural Sociology issues span the globe both internationally and domestically. Rural Sociologists engage in basic and applied sociological research related to the core discipline as well as meaningfully contribute to multidisciplinary research across a range of environmental, food, agricultural, community and development matters. Rural Sociology research focuses on environmental well-being, sustainable development of natural resources, social and community quality of life, and diffusion and impacts of technologies. Doctoral students can select from two tracks: Agriculture and the Environment, or Social Change and Development. Rural Sociology faculty maintain ties to Ohio State University Extension (OSUE) and the Ohio Agricultural Research and Development Center (OARDC), and form part of a larger cluster of social science faculty within SENR.

**Soil Science:** Soil is a fundamental resource for ecosystems functioning and environmental health. It is a living filter that provides vital ecosystem services – including carbon sequestration, recycling of nutrients, and assimilation of waste products. Soil is a key component of natural, agricultural, and wildland ecosystems that sustains all global processes. Soil science is highly interdisciplinary; soil scientists apply biology and microbial ecology, chemistry, earth sciences, ecology, hydrology, mineralogy, mathematics, nutrition, toxicology, and physics to understand, sustain, and improve the environment. A diverse range of research tools are used, such as geospatial analysis, computer modeling, microscopy, spectroscopy, bioassays, molecular biology, and other advanced field and lab technology for soil investigation.

The Environment and Natural Resources Graduate Program is based on the assumption that entering students are knowledgeable of and competent in the principles of natural science, including ecology, and possess a background in the humanities and social and administrative sciences relevant to environmental and natural resources management. During the Master of Science program, students build on this background to develop an understanding of the concepts and theories in their in their Areas of Specialization, learn how to pursue scholarly research in those areas, and learn how to apply their knowledge and technical skills to environmental and natural resource problems. Doctoral students are expected to expand their knowledge and understanding of environmental and natural resources science and management beyond that expected of master's students, to demonstrate their ability to focus their knowledge and skills on significant research topics or problems, and to make a contribution to the body of theory associated with those topics or problems. Upon completion of the doctoral degree, students are expected to be able to synthesize and clarify the ecological, social, political, economic, cultural, and educational aspects of their Areas of Specialization. Graduates of these two programs will have knowledge and analytical skills to enable them to contribute to the resolution of complex environmental and natural resource problems and will be able to assume leadership roles in environmental and natural resources science, management, policy, and education.

## 2. THE MASTER OF SCIENCE DEGREE PROGRAM (M.S.)

### 2.1 PURPOSE

The Master of Science is a research degree that engages students in course work, study, and research leading to the production of a scholarly master's thesis and publication in refereed, professional journals. The program prepares students to be critical thinkers who are familiar with the concepts, theories, and research methodologies in their fields. Students completing the Master of Science are prepared for careers in environmental and natural resource science, management, policy, and education (Graduate School Handbook, VI).

Matriculated MS students who wish to transfer to the MENR degree program should consult the Standard Operating Procedures (Appendix B, 4.1) and discuss their interest with their current faculty advisor, the Graduate Studies Committee chair, and the MENR program director.

### 2.2 AREAS OF SPECIALIZATION

The Environment and Natural Resources Graduate Program offers degrees in six Areas of Specialization: Ecological Restoration, Ecosystem Science, Environmental Social Sciences, Fisheries and Wildlife Science, Forest Science, Rural Sociology and Soil Science. Master's students may choose any Area of Specialization in which their advisors hold faculty appointments (Appendix A). The student's Area of Specialization will be noted on his or her transcript after the degree and specialization requirements are complete and the Transcript Designation form has been submitted to the Graduate School.

ENR graduate students are not eligible to receive a Graduate Minor in Soil Science or Environment & Natural Resources. However, students are permitted to declare and fulfill the requirements for more than one Area of Specialization as long as courses are not double-counted. Students seeking multiple Areas of Specialization should have either an advisor who is a member of both specializations, a co-advisor in the second specialization, or a member of their Advisory/Examination Committee who is a member of the second Area of Specialization.

### 2.3 THE ADVISOR

Each student shall have an advisor who must be a regular faculty member who holds a category M or P appointment in the Environment and Natural Resources

Graduate Program. The advisor is primarily responsible for guiding the student through the master’s program and chairs the student’s Advisory/Examination Committee. Students are not admitted to the program unless a faculty member has agreed to advise them. Thus, student-advisor linkages are determined through communication between the applicant and the potential advisor prior to final admission. Once admitted, students may change advisors by following the procedure in Section 2.4 below.

## 2.4 CHANGING ADVISORS

Students may petition the Graduate Studies Committee to change advisors at any time after their admission. To do this, a student shall submit a request for change of advisor to the Graduate Studies Committee chair. That request must stipulate the reasons for the requested change. The student shall also obtain a letter from the prospective new advisor indicating his or her willingness to assume that role and stipulating any conditions attached to that acceptance. Upon receipt of those letters, the Graduate Studies Committee will review the request and may request input from the current advisor, members of the student’s Advisory/Examination Committee and additional information from the student and the proposed new advisor. A decision will be rendered within 30 days of receipt of the written request.

## 2.5 ADVISORY/EXAMINATION COMMITTEE

All students must select an Advisory/Examination Committee and submit a signed Thesis Topic & Advisory Committee for Master of Science Students form to the graduate program office not later than the fifth Friday of the second quarter of full-time enrollment in the program or after 10 credits of graduate course work for part-time students. The Advisory/Examination Committee shall comprise at least three members of the graduate faculty, including the advisor. At least two of the Advisory/Examination Committee members, including the advisor, shall be members of the Environment and Natural Resources graduate faculty. One member shall be from outside the student’s Area of Specialization, but should have expertise appropriate and applicable to the student’s thesis research.

Adjunct faculty at The Ohio State University, faculty at other colleges and universities, and other qualified professional scientists may serve on master’s Advisory/Examination Committees with the approval of the Graduate Studies Committee and the Graduate School. These “extra” members shall be in addition to the three members who must be graduate faculty members. Both

the student and the advisor must submit letters of petition along with a current curriculum vitae of the “extra member” to the Graduate Studies Committee for review. Once the GSC approves the “extra” member, the petition is submitted to the Graduate School for final approval. Petitions for “extra” members should be submitted with the signed Thesis Topic & Advisory Committee for Master of Science Students form.

Unless significant changes in program direction occur or personal conflicts arise, the Advisory/Examination Committee should remain unchanged through the duration of the student’s program. Petitions to change the composition of the Advisory/Examination Committee must be submitted in writing to the Graduate Studies Committee for approval. The student must submit a letter justifying the change and the advisor must demonstrate their support for the change by signing the student’s letter or submitting an additional letter.

## 2.6 DEGREE REQUIREMENTS

| Requirements                   | Quarter Credits |
|--------------------------------|-----------------|
| Core Courses                   | 7               |
| Area of Specialization Courses | 23              |
| Thesis Research                | 15              |
| Total Credits                  | 45              |

### 2.6.1 Core Requirements (7 Credits)

All Master of Science students must complete the following core courses that are designed to introduce students to the research and scholarship process and guide them through the process of preparing their thesis research proposals:

- ENR 800 **Research in Natural Resources** (3 credits)  
 The use of science and research to address environmental and natural resource problems; development of a thesis proposal. Au Qtr.
- ENR 880 **Environment and Natural Resources Seminar** (1 credit)  
 All master’s students must enroll in the School of Environment and Natural Resources Seminar each quarter except Summer Quarter. Only 3 credits of ENR 880 may be applied to the minimum course work requirements for the degree. In the event that a student is away from campus for fieldwork, enrolls in a course that conflicts with the Seminar, or cannot



attend for some other reason, the student must request a waiver of the Seminar requirement by emailing the Graduate Studies Committee chair. If approved, a copy of the email is placed in the student's file in the graduate program office of the School of Environment and Natural Resources. It is recommended that students keep a copy for their personal records.

**ENR 897 Research Proposal Symposium (1 credit)**  
A symposium in which graduate students present thesis and dissertation proposals.

### 2.6.2 Area of Specialization Courses (23 Credits)

Working with their advisors and Advisory/Examination Committees, student must select and complete a minimum of 23 credits of graduate course work that provide them with the understanding of the theory and methodology underpinning their chosen area of research. In order to earn the Transcript Designation, there must be 15 hours of coursework from the approved course lists in the student's Area of Specialization (see Appendix A) on the Program of Study.

Master's students in the Rural Sociology specialization must complete must complete Rural Sociology 742 (Concepts and Theories in Rural Sociology). In addition, students must complete background courses in sociological theory and sociological research methods and statistics or equivalents at this or another university, including Sociology 782 or 784 (Earlier or Later Development in Sociological Theory), Sociology 649 (Principles of Multiple Regression). A total of 10 credit hours in sociological theory and at least 5 credits in research methods /statistics are required.

Master's students in the Soil Science specialization must complete the following ENR Soil Science courses (or the equivalent at this or another university): ENR 650, 655 or 671, 660, and 665 and Statistics 528 and 529. Additional courses may be selected. Soil Science students should submit the "Soil Science Graduate Specialization Program of Study Addendum" form with the Program of Study for Master's Students form.

### 2.6.3 Research Credits (15 Credits)

Master's students must complete 15 research credits (ENR 999). While students may accumulate more than 15 credits of ENR 999 during their thesis research, only 15 credits may be applied to the students' Programs of Study.

### 2.6.4 Program of Study (POS)

The Program of Study (POS) is an official document that stipulates the course work that the student shall complete as part of his or her degree requirements. Therefore, it is important that the POS be approved early in the student's enrollment. The Program of Study, approved by the student's Advisory/Examination Committee, shall be submitted on the Program of Study for Master of Science Degree Students form to the Graduate Studies Committee by the end of the second quarter of full-time enrollment or immediately after 15 credits have been completed by part-time students.

All POSs shall include all Core Requirements, at least 15 credits from the approved lists for an Area of Specialization (Appendix A), appropriate coursework from outside the Area of Specialization or ENR course offerings, and research credits. The course work listed in the POS must prescribe a cohesive scholarly program within the field of environment and natural resources. The Graduate Studies Committee reviews POSs for adherence to required courses and seminars, required research credits, scholarship, and appropriateness of course work for a degree in the field of natural resources.

Requests for changes in the Program of Study must be approved by the student's advisor and Advisory/Examination Committee and by the Graduate Studies Committee prior to the quarter in which the course changes are to be implemented. Requests for substitutions for core courses shall be submitted in writing to the Graduate Studies Committee, and supporting explanations must be submitted in writing by the advisor. Alteration of core requirements will be allowed only under extraordinary conditions.

## 2.7 THESIS REQUIREMENTS

### 2.7.1 Thesis Proposal

All students shall prepare a thesis proposal during their first nine months in the Environment and Natural Resources Graduate Program. This should be a collaborative effort between the student and his or her advisor and Advisory/Examination Committee. It is not expected that the student will be fully conversant in all aspects of his or her research before completing the thesis proposal. Guidelines for preparation of the thesis proposal are provided in Appendix C.

The thesis proposal, approved by the student's advisor and Advisory/Examination Committee, along with a completed Master's Proposal form, shall be submitted

to the Graduate Studies Committee not later than the end of the student's third quarter of full-time enrollment (normally Spring Quarter).

The Graduate Studies Committee chair shall review the submission to ensure that the proposed research falls within the generally recognized bounds of the fields of environment and natural resources, and that it adheres to the standards of scholarship set forth by the graduate faculty and listed in the front of this Handbook. If it does, then the Graduate Studies Committee chair shall sign the cover sheet and place the proposal in the student's official file in the School office. If it does not, then the Standard Operating Procedures (Appendix B.3) shall guide handling of the case. Any faculty member of the Environment and Natural Resources Graduate Program may review any proposal at any time by checking it out from the graduate program office.

### 2.7.2 Change in Research Direction

The thesis proposal is meant to be reasonably flexible to allow students to develop and carry out their research as they and their advisors and Advisory/Examination Committees see fit. If, however, the thesis research direction is altered to such an extent that there is a significant change in the theory bases or bodies of knowledge being pursued, the student shall inform the Graduate Studies Committee and file an amendment to the thesis proposal. This amendment must be approved in writing by the student's advisor.

### 2.7.3 Thesis Format and Approval

The thesis shall be prepared in accordance with the rules and regulations of the Graduate School. Guidelines for preparing and submitting theses are available on the [Graduate School website](#). The student must submit the complete, typed thesis draft to the Graduate School for format review prior to submitting the final document to OhioLINK. The involvement of the Graduation Services area in thesis preparation is limited to standardizing the format and arrangement of content. Specific content matters are handled between the student and the advisor. Approved theses must be submitted electronically to OhioLINK and the Final Approval form and fees must be submitted to the Graduate School by the published deadlines for the student to be eligible for graduation during the given quarter.

### 2.7.4 Thesis Abstract

A copy of the master's thesis abstract shall be submitted via email to the graduate program office in the School

of Environment and Natural Resources no later than the first day of the expected quarter of graduation. The Application to Graduate form will not be signed by the Graduate Studies Committee chair until the abstract is submitted.

## 2.8 FINAL MASTER'S EXAMINATION

### 2.8.1 The Examination

Each student's Advisory/Examination Committee will conduct a final oral examination that centers on, but is not necessarily restricted to, the thesis research. The advisor will chair the Master's Examination and all Advisory/Examination Committee members must be present for the duration. The examination must be completed prior to the published deadline for the quarter of graduation and must take place during announced university business hours, Monday through Friday. Students are advised to schedule the examination at least one month in advance of published deadlines to insure that all Advisory/Examination Committee members can attend at the required time.

No later than two weeks prior to the scheduled Master's Examination, the student must submit the completed Exit Seminar form to the graduate program office. The School will produce fliers advertising the seminar. The student is responsible for posting the fliers in visible areas of Kottman Hall and sending them to other departments as appropriate.

Candidates and their advisors are to schedule three hours for the Master's Examination. Within this three-hour block of time, the Master's Examination must include two components: (1) an open seminar followed immediately by (2) a closed examination. The first component is open to any faculty member, staff, students, and other guests interested in attending. This open component will consist of a 20 minute overview of the thesis presented by the candidate, followed immediately by 10 minutes of questions from the general audience. At the close of this open question period or when no questions remain from those in attendance – whichever comes first – the examination will proceed into a closed session in which only the candidate and Advisory/Examination Committee will be present.

All members of the student's Advisory/Examination Committee must be present during the entire Master's Examination (consisting of both the open and closed components), and all will vote. Only Advisory/Examination Committee members may be present for discussion

of the student's performance and for the vote. If not all Advisory/Examination Committee members can be physically present, a Request for Video Conferencing form may be submitted to the Graduate School no later than two weeks prior to the examination. Refer to the Graduate School Handbook, Appendix A, for the complete guidelines for Videoconferencing. Once the examination has begun, it must continue to a voting conclusion. The vote in favor of passing the student must be unanimous (Graduate School Handbook, VI.3).

After a conclusion has been reached, Advisory/Examination Committee members will indicate that conclusion on the Master's Examination form by signing in the appropriate spaces. It is the student's responsibility to submit the Master's Examination Report form, with original signatures, to the graduate program office in the School of Environment and Natural Resources and to the Graduate School by the published deadline for the quarter of graduation. Failure to submit this form prior to the published deadlines will result in removal from the graduation list.

Upon recommendation by the Advisory/Examination Committee, a student who has failed his or her Master's Examination may retake that examination one time. In these instances, only the closed portion of the examination need be repeated. The Advisory/Examination Committee for the second examination will include the same faculty members as the first, unless substitution is approved by the Graduate Studies Committee and the Graduate School prior to the date of the second examination. If the student fails the second examination, the advisor must inform the Graduate Studies Committee chair who will inform the Graduate School. The student will be denied further enrollment in the Environment and Natural Resources Graduate Program.

### 2.8.2 Appeal and Review

If a student is judged to have failed either the first or second examination, he or she or any member of the Advisory/Examination Committee may appeal the decision but only on the grounds that the "fairness and without prejudice" concept was violated. An appeal must be submitted in writing to the Graduate Studies Committee for review. The Graduate Studies Committee will conduct a hearing and then evaluate the Master's Examination according to the "fairness and without prejudice" concept (Graduate School Handbook, VI.3 and Appendix C). If the Graduate Studies Committee cannot resolve the case, it will forward it to the Graduate School who will refer it to the Graduate Council for resolution. If

either the Graduate Studies Committee or the Graduate Council finds that the rules were not followed or that the examination was not fair or without prejudice, the Graduate School may direct that a new examination be administered.

## 2.9 APPLICATION TO GRADUATE

Each student must complete and submit an Application to Graduate form to the graduate program office in the School of Environment and Natural Resources and to the Graduate School by the published deadline for the expected quarter of graduation. The application is valid only for that quarter. By submitting this form, the student indicates that he or she expects to complete all degree requirements by the prescribed deadlines of that quarter. The Application to Graduate form must be signed by the student, his or her advisor, and the Graduate Studies Committee chair.

### 2.9.1 End of Quarter Completion

A student who does not meet published graduation deadlines but who does complete all degree requirements and has submitted all forms and the thesis to the Graduate School by the last business day prior to the first day of classes for the following quarter may graduate the following quarter without registering or paying fees. Students who wish to use the End of Quarter option must inform the graduate program office in the School of Environment and Natural Resources and the Graduate School.

## 2.10 COMBINED BACHELOR'S-MASTER OF SCIENCE PROGRAM (ENR7)

Admission requirements for the ENR7 Program may be found in Section 8.4.

Students in the ENR7 Program are responsible for completing all requirements and deadlines for the M.S. in Environment and Natural Resources. Further, by the end of the first quarter in the ENR7 Program, the student must file with the Graduate Studies Committee a statement of goals and objectives and a general plan for completing both degrees. This will be forwarded to the Graduate School. The Graduate Studies Committee and the student's advisor will monitor the student's progress toward the graduate degree, but the student is ultimately responsible for completing all requirements and meeting all deadlines.

To earn both degrees, the student must be enrolled in the ENR7 Program for a minimum of four quarters. Should the student fail to make "reasonable progress," he or

she may be denied further enrollment in the graduate program and may then complete only the Bachelor of Science (see Section 7.2).

## **2.11 DUAL MASTER’S DEGREE PROGRAM WITH THE JOHN GLENN SCHOOL OF PUBLIC AFFAIRS**

The management of natural resources inevitably involves public agencies and the processes by which policies affecting these agencies are developed, implemented, and changed. Graduate faculty in the Schools of Environment and Natural Resources and the John Glenn School of Public Affairs (formerly Public Policy and Management) cooperate in offering Dual Master’s Degree Programs for qualified students wanting preparation for academic and/or professional careers in natural resources public policy and management. Except where modified below, all rules and requirements for each regular master’s program apply to this dual degree program. Students completing the program will receive two degrees: Master of Science in Environment and Natural Resources and either a Master of Arts in Public Policy and Management or a Master of Public Administration.

### **2.11.1 Course Work and Research Requirements**

Students in this program must complete 23 credits of course work in SENR, 15 credits of ENR 999, and 34 to 40 credits of course work in JGSPA.

A minimum of 50 percent of the regular course credits applied to either the Environment and Natural Resources or Public Affairs must be unique to each degree. The remainder may be applied to satisfy both requirements (dual credit). Also, students must enroll every quarter for the Environment and Natural Resources Seminar until they graduate with the M.S. degree. Only 3 credits of ENR 880 may be applied to the minimum course requirement for this dual degree.

### **2.11.2 Admission and Enrollment**

Students wishing to enroll in the Dual Master’s Degree Program must apply and be admitted to both graduate programs. As part of the application procedure, all applicants must complete a Program Plan for Dual Degree form and submit it to the Environment and Natural Resources Graduate Studies Committee chair and the Public Affairs Graduate Studies Committee chair. This form is available on the [Graduate School website](#).

Students admitted to the Environment and Natural Resources Graduate Program may subsequently pursue admission to the Public Affairs program shortly after they arrive on campus or vice versa. All regular admission procedures and criteria apply to applicants wishing to pursue a Dual Master’s Degree Program. Students admitted to the Dual Master’s Degree Program will have two advisors. The student’s Advisory/Examination Committee will comprise a minimum of four members, at least two from each program.

### **2.11.3 Integrated Program of Study**

Within two quarters after being admitted to the Graduate School, the student must file an approved Program Plan for Dual Degree form and a Program of Study for Master’s Degree Students form with the Graduate Studies Committee in Natural Resources and the Graduate School. This is to be developed in consultation with and be approved by the student’s advisor and Advisory/Examination Committee. Integrating course work requires careful planning. Students should work closely with their advisors.

### **2.11.4 Final Master’s Examinations**

Students who have completed all other requirements for the Dual Master’s Degree Program must satisfactorily complete a Final Master’s Examination in Environment and Natural Resources and a Comprehensive Examination in Public Affairs. The Advisory/Examination Committee for the Environment and Natural Resources Examination will comprise a minimum of four members of the graduate faculty, with at least two from each graduate program. All rules and requirements for Final Master’s Examinations apply, including reexamination and appeal rules and procedures (Section 2.8). Rules for the Public Affairs Comprehensive Examination may be obtained from the Public Affairs program.

### **2.11.5 Quarter of Graduation**

Students in the Dual Master’s Degree Program will be officially enrolled at any given time in one or both of the two graduate programs. Prior to submitting Applications to Graduate for both degrees, students should confirm that the Program Plan for Dual Degree form was approved by the Graduate School to ensure that the Graduate School is aware that the student is seeking to graduate with two degrees. Students intending to graduate with one degree in a given quarter and the second during a subsequent quarter must be enrolled in the appropriate program during the quarter

of graduation from that program. During any quarter in which the student is enrolled in Public Affairs and not in Environment and Natural Resources, he or she must advise the School of Environment and Natural Resources office that he or she remains active in the Dual Master's Degree Program.

### **3. THE DOCTOR OF PHILOSOPHY DEGREE PROGRAM (PH.D.)**

#### **3.1 PURPOSE**

The Doctor of Philosophy is an advanced research degree that prepares students to pursue high-level, independent, scholarly research. While the Ph.D. program is fundamentally oriented toward preparing students to pursue academic careers, it also provides a foundation for students wishing to pursue research careers in government and the private sector (Graduate School Handbook, VII).

Matriculated PhD students who wish to transfer to the MENR degree program should consult the Standard Operating Procedures (Appendix B, 4.1) and discuss their interest with their current faculty advisor, the Graduate Studies Committee chair, and the MENR program director.

#### **3.2 RESEARCH FOCUS**

The Ph.D. is a research degree. Therefore, the doctoral dissertation is the central focus of the Ph.D. program. Students in the Ph.D. program are expected to select and design their own research projects, develop a high level of understanding of the concepts, theories, and methodologies related to their research topics, and produce scholarly dissertations that make a tangible contribution to theory bases in their fields of study.

Therefore, the requirements for the Ph.D. are based on the student's Area of Specialization and dissertation research topic. The selection of an Advisory/Examination Committee and courses for the Program of Study are both determined by the dissertation research to be done by the student. The Candidacy Examination is a test of the student's comprehension of the field, allied areas of study, his or her capacity to undertake independent research, and his or her ability to think and express ideas clearly (Graduate School Handbook, VII.4). The Final Oral Examination tests originality, independence of thought, the ability to synthesize and interpret, and the quality of research presented in the student's Area of Specialization. The final oral examination concerns principles and historic perspective as well as data

(Graduate School Handbook VII.10). It is important that doctoral students select their Advisory/Examination Committee members and identify their dissertation research projects as early as possible after entering the Environment and Natural Resources Graduate Program.

#### **3.3 REGULAR AND DIRECT-ADMIT DEGREE TRACKS**

Most students admitted to the Ph.D. program will have completed a master's degree in or related to their chosen fields. Those students are classified in the doctoral program as Regular Admit Ph.D. students. Regular Admit Ph.D. students must complete a minimum of 75 credits beyond the master's degree (45 credits) for a total of 120 credits to earn a doctoral degree. Regular Admit Ph.D. students must complete all of the other requirements listed herein.

Occasionally, however, students who hold only a bachelor's degree or a bachelor's degree with a professional or non-thesis graduate degree may be admitted directly into the Ph.D. program (see Section 8.3.3). Those students are classified in the doctoral program as Direct-Admit Ph.D. students. Direct-Admit Ph.D. students must complete a minimum of 120 credits to earn a doctoral degree. Direct Admit Ph.D. students must also complete all of the other requirements listed herein in addition to those listed in Section 3.12.

#### **3.4 AREAS OF SPECIALIZATION**

The Environment and Natural Resources Graduate Program offers degrees in six Areas of Specialization: Ecological Restoration, Ecosystem Science, Environmental Social Sciences, Fisheries and Wildlife Science, Forest Science, Rural Sociology and Soil Science. Doctoral students may choose any Area of Specialization in which their advisors hold faculty appointments (Appendix A). The student's Area of Specialization will be noted on his or her transcript after the degree and specialization requirements are complete and the Transcript Designation form has been submitted to the Graduate School.

ENR graduate students are not eligible to receive a Graduate Minor in Soil Science or Environment and Natural Resources. However, students are permitted to declare and fulfill the requirements for more than one Area of Specialization as long as courses are not double-counted. Students seeking multiple Areas of Specialization should have either an advisor who is a member of both specializations, a co-advisor in the

second specialization, or a member of their Advisory/ Examination Committee who is a member of the second Area of Specialization.

### 3.5 THE ADVISOR

Each student shall have an advisor who is a regular faculty member in the Environment and Natural Resources Graduate Program and holds category P status in the Graduate School. The advisor is primarily responsible for guiding the student through the Ph.D. program and chairs the student's Advisory/Examination Committee. Students are not admitted to the program unless a faculty member has agreed to advise them. Thus, student-advisor linkages are determined through communication between the applicant and the potential advisor prior to final admission. Once admitted, students may change advisors by following the procedure in Section 3.6 below.

### 3.6 CHANGING ADVISORS

Students may petition the Graduate Studies Committee to change advisors at any time after their admission. To do this, a student must submit a request for change of advisor to the Graduate Studies Committee chair and stipulate the reasons for the requested change. The student must obtain a letter from the prospective new advisor indicating his or her willingness to assume that role and stipulating any conditions attached to that acceptance. Upon receipt of those letters, the Graduate Studies Committee will review the request and may request input from the current advisor, members of the student's Advisory/Examination Committee, and additional information from the student and the proposed new advisor. A decision will be rendered within 30 days of the receipt of the written request.

### 3.7 ADVISORY/EXAMINATION COMMITTEE

As soon as possible after entering the doctoral program, the student and his or her advisor must select an Advisory/Examination Committee and submit the Dissertation Topic and Advisory/Examination Committee for Doctoral Degree Students form by the fifth Friday of the student's second quarter in the program. Upon receipt of this form, the Graduate Studies Committee chair will appoint a Program Representative to the Advisory/ Examination Committee.

The role of the Advisory/Examination Committee is four-fold: 1) guide the student in the preparation of the Program of Study, the development of the Dissertation Proposal, and the initiation of the dissertation research

project; 2) serve as the examining committee for the Candidacy Examination; 3) advise the student in carrying out the doctoral research project and the preparation of the dissertation; and 4) serve as the examining committee for the Final Examination.

The Student's Advisory/Examination Committee shall comprise the student's advisor, who must be a Category P member of the Environment and Natural Resources graduate faculty and two additional members of the university graduate faculty who hold Category P appointments. Graduate faculty members with Category M appointments may serve on doctoral Advisory/ Examination Committees with the approval of the Graduate Studies Committee and the Graduate School. Doctoral Soil Science specialization students must have a minimum of three graduate faculty committee members, including one who is not a Soil Science faculty member (either from ENR in another Area of Specialization or from another department in the university) in order to foster cross-disciplinary investigation and innovation.

Further, with the approval of the Graduate Studies Committee and the Graduate School, individuals who are not members of the graduate faculty may serve on the Advisory/Examination Committee. These "extra" members shall serve in addition to the required three members who hold graduate faculty appointments. Both the student and the advisor must submit letters of petition along with a current curriculum vitae of the "extra member" to the Graduate Studies Committee for review. Once the Graduate Studies Committee approves the "extra" member, the petition is submitted to the Graduate School for final approval. Petitions for "extra" members should be submitted with the signed Dissertation Topic and Advisory/Examination Committee for Doctoral Degree Students form.

The Graduate Studies Committee chair, in cooperation with the student's advisor, shall appoint a fourth member to each student's Advisory/Examination Committee who shall serve as Program Representative through the Candidacy Examination. This person must be a member of the Environment and Natural Resources graduate faculty and shall be a full, voting member of the student's Advisory/Examination Committee. The Program Representative should be a faculty member who can contribute to the student's research, but also remain objective and insure that graduate program and Graduate School rules and procedures are adhered to as the student prepares for candidacy.

After the student passes his or her Candidacy Examination, the Program Representative departs the Advisory/Examining Committee, leaving a three-person committee to continue guiding the student's doctoral research and the preparation of the final dissertation. If the student, advisor, and Program Representative wish to retain the Program Representative on the Final Examination committee, then the student will go forward with a four-member committee. For the Final Examination, the Graduate School appoints a Graduate Faculty Representative who will serve as a full, voting member of the student's Final Examination committee.

Unless significant changes occur in the student's program direction or personal conflicts arise, the members of the student's Advisory/Examination Committee should remain unchanged through the duration of the student's program, except for the special cases of the Program and Graduate Faculty Representatives. Changes in the composition of the Advisory/Examination Committee must be approved by the Graduate Studies Committee.

### 3.8 DEGREE REQUIREMENTS

Students admitted to the Regular doctoral program should already hold an earned thesis-master's degree in a related environmental and natural resources field. Those students must complete the degree requirements described in this Section. Students who are admitted to the Direct-Admit doctoral program with only a bachelor's degree or a bachelor's degree with a professional or non-thesis graduate degree must complete the requirements listed in this section in conjunction with those listed in Section 3.12.

| Requirements for Regular Ph.D.  | Approximate Quarter Credits |
|---------------------------------|-----------------------------|
| Competency Requirement*         | 1-10*                       |
| Core Courses                    | 10                          |
| Area of Specialization Courses  | 20 minimum                  |
| Methodology Courses             | 13 minimum                  |
| Dissertation Research (ENR 999) | 32 maximum                  |
| Total Credits                   | 75**                        |

\*Not applicable to 75-credit minimum.

\*\*Assumes 45-hour master's degree, plus 75 post-master's doctoral coursework for a total of 120 minimum Ph.D. credit hours (Graduate School Handbook, VII.2).

#### 3.8.1 Competency Requirements

All doctoral students must show competency in ecology and an environmentally relevant area of the social sciences. This can be done by taking or having taken one undergraduate- or graduate-level course in ecology/ecosystem science and one undergraduate- or graduate-level course in environmental decision making, economics, law, policy, or sociology. Courses used to satisfy the Competency Requirements must be approved by the Graduate Studies Committee. Competency credits may not be included in the minimum number of credits required for the doctoral degree.

#### 3.8.2 Core Requirements (10 Credits)

All doctoral students must complete the following core requirements that are designed to acquaint them with the broad paradigms of scientific research in environmental and natural resource science.

##### **ENR 880** Natural Resources Seminar (1 credit)

All doctoral students shall enroll in the Natural Resources seminar (ENR 880) each quarter until they pass their Candidacy Examinations. Only 5 credits of ENR 880, however, may be listed on the Program of Study. In the event that a student is out of the Columbus area for fieldwork, enrolls in a course that conflicts with the Seminar, or cannot attend for some other reason, the student must request a waiver of the Seminar requirement by emailing the Graduate Studies Committee chair. If approved, a copy of the email is placed in the student's file in the graduate program office of the School of Environment and Natural Resources. It is recommended that students keep a copy for their personal records. Following admission to Candidacy, students are expected to attend, but not enroll in, ENR 880

seminars. Each doctoral student must present a seminar on his or her research area after passing their candidacy exam and before graduation as part of the Natural Resources Seminar Series (Section 3.9).

**ENR 985 Research Paradigms (5 Credits)**

An examination of research paradigms and techniques used in the disciplines involved in environmental and natural resource science and management. Offered Winter Quarter, every other year.

**3.8.3 Area of Specialization Courses (20 Credits)**

Working with the advisor and Advisory/Examination Committee, students must select and complete a minimum of 20 credits of graduate course work. In order to earn the Transcript Designation, there must be 15 hours of coursework from the approved course lists in the student's Area of Specialization (see Appendix A) on the Program of Study; courses can be listed on the Program of Study in either the Area of Specialization or the Methodology sections.

Doctoral students in the Rural Sociology specialization must complete Rural Sociology 742 (Concepts and Theories in Rural Sociology) or the equivalent at this or another university. In addition, students must complete background courses in sociological theory (Sociology 782 or 784, Earlier or Later Development in Sociological Theory plus 15 additional credit hours of sociological theory) and sociological research methods and statistics (including Sociology 649: Principles of Multiple Regression; Sociology 707: Multi-Equation Quantitative Analysis; and 10 additional quarter credit hours of research methods and statistics). A total of 20 credit hours in sociological theory and 20 credit hours in research methods/statistics are required. Students focusing in Agriculture and Environment should also take Rural Sociology 666, 733, 766 or equivalents at this or another university. Doctoral Students focusing in Social Change and Development should also take Rural Sociology 788, 888, 892 or equivalents at this or another university.

Doctoral students in the Soil Science specialization must complete the following ENR Soil Science courses (or the equivalent at this or another university): ENR 650, 655 or 671, 660, 665, 720, 730, and 740 and Statistics 528 and 529. Additional courses may be selected. Soil Science students should submit the "Soil Science Graduate Specialization Program of Study Addendum" form with the Program of Study for Doctoral Students form.

**3.8.4 Methodology Courses (13 Credits)**

Methodology or techniques courses are considered to be important parts of any doctoral student's research preparation.

**3.8.5 ENR 999 Research Credits (32 Credits )**

It is assumed that doctoral students will spend some part of every quarter designing or working on their dissertation research. Therefore, all doctoral students must enroll for ENR 999 credit every quarter and include a maximum of 32 credits of ENR 999 on their Program of Study. While students will accumulate more than 32 credits of ENR 999, only 32 credits may be applied to Regular Ph.D. students' Program of Study. Direct-Admit Ph.D. students may only include a maximum of 45 credits of ENR 999 on their Program of Study.

The number of ENR 999 credits taken each quarter should reflect an honest assessment of the amount of time spent working on dissertation research. Students and advisors should be aware of the Graduate School's restrictions on credits that may be taken by post-Candidacy doctoral students. Post-Candidacy students wishing to enroll for more than three credit hours must consult with the Graduate Studies Committee chair and the graduate program office in the School of Environment and Natural Resources for the current interpretation of the three-credit-hour rule.

**3.8.6 Program of Study (POS)**

Not later than the end of the third quarter that the student is enrolled in the program, he or she shall submit to the Graduate Studies Committee an approved Program of Study (POS). Part-time doctoral students must include a schedule for meeting all deadlines stipulated for the program with their Programs of Study. This schedule must be approved by the Graduate Studies Committee.

The POS sets forth the detailed course and credit requirements for the degree. All courses listed on the Program of Study must be completed before the student may take the Candidacy Examination. All Programs of Study must include ENR 985, up to five credits of ENR 880, a minimum of 20 Area of Specialization credits from the approved list in Appendix A, a minimum of 13 Methodology credits, and a maximum of 32 credits of ENR 999. Further, the POS must indicate the courses that the student is using to satisfy the competency requirement.

The student must work closely with his or her advisor and Advisory/Examination Committee in designing the Program of Study. While Programs of Study will vary



among students with different scholarly interests, all should be designed to prepare the student for the Candidacy Examination and for successful pursuit of dissertation research. Further, the POS must combine depth and breadth or course work designed to foster research and scholarship in the student's Area of Specialization.

The POS is to be prepared on the Program of Study for Regular (or Direct Admit) Doctoral Students form that is available online from the [School website](#). The POS must be approved and signed by the advisor, all members of the Advisory/Examination Committee (including the Program Representative), and the Graduate Studies Committee chair.

Changes in the Program of Study must be approved by the student's advisor and Advisory/Examining Committee and reported to the Graduate Studies Committee prior to the quarter in which the course changes are to be implemented.

The Graduate Studies Committee reviews each Program of Study for compliance with rules of the program and the Graduate School, including required course work, seminars, research credits, and the acceptability of the courses used to satisfy the Competency Requirement (3.8.1). They also determine whether the selected course work reflects a program within the fields of environmental or natural resources science, and whether the overall program described in the POS meets the expectations for scholarship as defined by this faculty and set forth at the beginning of this Handbook.

### 3.9 CREDITS AND GRADE POINT AVERAGE

A minimum of 120 graduate credits beyond the baccalaureate degree is required to earn a doctoral degree. If the student has earned an accredited master's thesis degree, then a minimum of 75 graduate credits beyond the master's degree is required. A master's degree earned at another university may be transferred to this university (Graduate School Handbook, IV.2).

If the earned master's degree is from The Ohio State University, and that student has earned graduate credit in excess of the minimum required for that degree, the student may submit the completed Status for Beyond the Master's Degree form ([Graduate School website](#) under Forms and Publications) to the graduate program office in the School of Environment and Natural Resources and the Graduate School for courses to be counted toward the 75 graduate credit hours required for the doctoral degree

(Graduate School Handbook, VII.2). This notification must occur no later than the end of the first quarter of enrollment beyond the completion of the master's degree. Those courses are then listed on the student's Program of Study. No 999 credits may be included in this transfer of credits to the doctoral program.

Students must maintain a cumulative grade point average of 3.0 for all graduate course work completed at this university to qualify for graduation.

### 3.10 RESIDENCY REQUIREMENT FOR THE PH.D.

Residency at the university is required to afford the student an opportunity to engage in intensive study over an extended period of time in association with faculty members and other students in an atmosphere conducive to a high level of intellectual and scholarly activity. This requirement is met by completing the following conditions:

- a. A minimum of 45 credits must be completed at this university after the master's degree has been earned or after the first 45 hours of graduate credit have been completed.
- b. A minimum of three out of four consecutive quarters with an enrollment of at least nine graduate credits per quarter must be completed while in residence at this university.
- c. a minimum of six graduate credit hours over a period of at least two quarters must be completed after admission to candidacy.
- d. Complete a dissertation and graduate within five years (Graduate School Handbook, VII.2)

### 3.11 TIME TO DEGREE

Full-time Regular doctoral students should complete course work and take their Candidacy Examinations by the end of their second year in the program and complete all degree requirements in three years. Full-time Direct-Admit doctoral students must take their Candidacy Examinations by the end of their ninth quarter in the Ph.D. program and may take four years to complete their degrees.

Students deemed to be making reasonable progress may remain in the pre-candidacy stage of the doctoral program for as long as five years with concurrence of

their advisors, their Advisory/Examination Committees, and the Graduate Studies Committee.

It is recognized that some full-time, doctoral students may be making reasonable progress toward their degrees but are still not able to complete their degrees within the five-year limit. In such cases, an extension of the time limit may be granted. Students in this position must petition the Graduate Studies Committee for an extension by February 15 of their fourth year in the program, and the advisor must stipulate in writing that the student is making reasonable progress but needs more time (see Sections 7.2 and 7.3).

Part-time doctoral students will require more time to complete their degree requirements. These students must include with their Programs of Study a schedule for meeting all deadlines stipulated for the program. This must be approved by the Graduate Studies Committee.

The Five-Year Rule of the ENR Graduate Program applies to courses used to satisfy doctoral degree requirements (see Section 7.4). This Five-Year Rule is unique from the Graduate School five-year limit on candidacy examinations (Graduate School Handbook, VII.8).

### 3.12 SUPPLEMENTAL REQUIREMENTS FOR DIRECT-ADMIT STUDENTS

Students admitted to the Ph.D. Program who hold only a bachelor's degree will be required to satisfy all of the requirements for the Environment and Natural Resources Ph.D. Degree (sections 3.1-3.11) plus those listed here:

- a. By the end of the seventh quarter in the program the student must submit to the Graduate Studies Committee a scholarly paper, approved by the student's Advisory/Examination Committee, that includes empirical data or is a substantive review and critique of a significant problem in the student's area of study. Submit the Direct Admit Doctoral Student Scholarly Paper Proposal form, signed by the advisor, to the Graduate Studies Committee by the end of the sixth quarter. Submit the Direct Admit Doctoral Student Final Scholarly Paper form with the complete final paper to the Graduate Studies Committee by the end of the seventh quarter.
- b. Complete both portions of the Candidacy Examination by the end of the ninth quarter in the program, and if a second exam is necessary, complete it by the end of the tenth quarter.

- c. If the student fails the second Candidacy Examination, that student shall be placed in the Master of Science program and will be awarded a master's degree upon submitting and successfully defending a master's thesis.

Direct-Admit Ph.D. students must include the following minimum credit hours on the submitted Program of Study:

| Requirements for Direct-Admit Ph.D. | Approximate Quarter Credits |
|-------------------------------------|-----------------------------|
| Core Courses                        | 10                          |
| Area(s) of Specialization Courses   | 40 minimum                  |
| Methodology Courses                 | 25 minimum                  |
| Dissertation Research (ENR 999)     | 45 maximum                  |
| Total Credits                       | 120                         |

### 3.13 CANDIDACY EXAMINATION

The Candidacy Examination is a single examination consisting of two portions: written and oral. It is administered under auspices of the Graduate Studies Committee and is carried out by the student's Advisory/Examination Committee. The student's advisor chairs the Candidacy Examination and is responsible for coordinating and conducting both the written and oral portions. The oral portion of the Candidacy Examination must take place during announced university business hours, Monday through Friday.

#### 3.13.1 Purpose

The Candidacy Examination tests the doctoral student's knowledge of his or her Area of Specialization, capacity to undertake independent research, and ability to think and express ideas clearly. See the Graduate School definition of candidacy in the Graduate School Handbook, VII.8.

#### 3.13.2 Schedule and Notification

The Candidacy Examination may be scheduled at any time thought appropriate by the student and his or her Advisory/Examination Committee, but it may not be taken until all course work on the Program of Study, excluding ENR 999, is completed. Further, it must be successfully completed not fewer than two quarters before graduation. During the quarter in which the examination is administered, the student must be in good standing and registered for a minimum of three graduate credits. Graduate students holding Graduate

Associate appointments must be registered for a full-time credit load during the quarter in which the Candidacy Examination is taken (see Section 6.1.2).

Once the examination has been scheduled, the student must submit the Notification of Doctoral Candidacy Examination form to the graduate program office in the School of Environment and Natural Resources not fewer than four weeks prior to the date of the oral portion of the examination in order to determine if the student has completed all courses on his or her Program of Study. Once the audit of the student's record is complete, the graduate program office or the student will take the Notification of Doctoral Candidacy Examination form to the Graduate School at least two weeks prior to the time of the oral portion of the examination. Once the Graduate School receives the Notification of Doctoral Candidacy Examination form they will send the Candidacy Examination Report form as a pdf attachment to the advisor's Ohio State email account.

At the conclusion of the oral portion of the Candidacy Examination, all members of the Advisory/Examination Committee must sign the Candidacy Examination Report. Original signatures of all committee members are required, even when one or more committee members are participating in the examination via video conference. The advisor is responsible for making sure that all committee member signatures are obtained. The completed Candidacy Examination Report must be submitted to the Graduate School with one copy to the Environment and Natural Resources graduate program office within one working day of the completion of the exam or within one working day of obtaining original signatures from remote committee members. The Candidacy Examination Report must be filed whether the results are satisfactory or unsatisfactory.

### 3.13.3 Written Portion

**a. Procedures:** The format and schedule of the written portion of the Candidacy Examination is determined by the Advisory/Examination Committee. The advisor must report the details of format, schedule, and evaluation procedure in writing to the Graduate Studies Committee not fewer than two weeks prior to the beginning of the written portion. The advisor is responsible for coordinating the written examination.

**b. Waiver:** If, based on evaluation of the written portion, the Advisory/Examination Committee members see no possibility for a satisfactory performance on the Candidacy Examination, the student may waive

the right to take the oral portion. The Advisory/Examination Committee may not, however, deny a student the opportunity to take the oral portion. If the student decides to waive the right to take the oral portion, he or she must provide the Advisory/Examination Committee with a written statement explaining that decision. In such cases, the Advisory/Examination Committee records an "unsatisfactory" on the Candidacy Examination Report and submits the appropriate copies to the Graduate School and the graduate program office in the School of Environment and Natural Resources. For second Candidacy Examinations procedures, see Section 3.14.6.

### 3.13.4 Oral Portion

The oral portion of the Candidacy Examination, normally two hours long, must be completed within one month of the conclusion of the written portion.

**a. Attendance:** Attendance at the oral portion of the Candidacy Examination is limited to the student and members of the Advisory/Examination Committee. All members of the Advisory/Examination Committee must be in attendance during the entire oral examination and are expected to participate fully in the questioning, discussion, and decision making. If not all Advisory/Examination Committee members can be physically present, a Request for Video Conferencing form may be submitted to the Graduate School no later than two weeks prior to the examination. Refer to the Graduate School Handbook, Appendix A, for the complete guidelines for Videoconferencing.

**b. Postponement:** The oral portion of the Candidacy Examination is expected to be held as scheduled. Circumstances, however, may force postponement. Before taking this action, the advisor must consult the student and the members of the Advisory/Examination Committee and must then notify the Graduate School and the Graduate Studies Committee of the new date, time, and location for the examination. Once formal questioning has begun, the examination must proceed to a voting conclusion.

### 3.13.5 Candidacy Examination Results

The decision regarding the outcome of the Candidacy Examination (including both written and oral portions) is reached by the full Advisory/Examination Committee at the conclusion of the oral portion in the absence of the student. After discussion, the satisfactory / unsatisfactory decision is made by vote.

**a. Satisfactory:** The student is considered to have completed the Candidacy Examination successfully only when the decision of the Advisory/Examination Committee is unanimously affirmative.

**b. Unsatisfactory:** If there is one or more negative votes, the student's performance will be judged unsatisfactory. In such cases, the Advisory/Examination Committee must decide if the student will be permitted to take a second examination. This decision must be reported on the Candidacy Examination Report.

Members of the Advisory/Examination Committee indicate their concurrence with the decision by signing the Candidacy Examination Report in the appropriate places, e.g. satisfactory or unsatisfactory. The Candidacy Examination Report is submitted by the student to the Graduate School and the graduate program office in the School of Environment and Natural Resources.

### 3.13.6 Second Candidacy Examination

The nature of the second examination will be determined by the Advisory/Examination Committee, but it must include both written and oral portions. Further, the Advisory/Examination Committee must be the same as for the original examination, unless a substitution is approved in advance by the Graduate Studies Committee and the Graduate School. The second Candidacy Examination must be completed not later than two quarters before graduation. When submitting the Notification of Doctoral Candidacy form to the Graduate School for the second time, the student should inform the Graduate School that this is the second examination so that a Graduate Faculty Representative may be assigned.

### 3.13.7 Repeat Examinations

No student is permitted to take the Candidacy Examination more than twice. Any student whose performance is recorded as unsatisfactory on two attempts at the Candidacy Examination is not permitted to continue enrollment in the Environment and Natural Resources Graduate Program or in any other doctoral program at The Ohio State University (Graduate School Handbook, VII.7).

### 3.13.8 Review

Decisions to fail a student on his or her Candidacy Examination is subject to appeal and review. On written appeal by the student or a member of the Advisory/Examination Committee, the Graduate School will ask the Graduate Council to review the Candidacy Examination to ensure that it was conducted fairly and without

prejudice to the student and according to the rules of the Environment and Natural Resources Graduate Program and the Graduate School. The Council has established review procedures which are available in the Graduate School Handbook, Appendix C.

## 3.14 CANDIDACY

Provided that the student is in good standing (see Section 7.1) at the end of the quarter in which the Candidacy Examination is completed, satisfactory completion of that examination admits the student to Candidacy for the doctoral degree at the end of that quarter. Candidacy signifies that the student is judged to be prepared to undertake work on the dissertation. Under normal conditions, students will enroll only in ENR 999 after advancing to candidacy. Post-Candidacy students wishing to enroll for more than three credits of course work must consult with the Graduate Studies Committee chair and the graduate program office in the School of Environment and Natural Resources for the current interpretation of the three-credit-hour rule.

## 3.15 RESEARCH SEMINAR

Each doctoral student must present a seminar on his or her research area after passing their candidacy exam and before graduation. This seminar must be presented in the School of Environment and Natural Resources Seminar Series (ENR 880, offered Autumn, Winter and Spring quarters only). Doctoral students may reserve dates to present their research seminars by contacting the Seminar Committee chair not later than the beginning of the preceding quarter to the student's expected quarter of presentation and submitting the Graduate Research Seminar form to the graduate program office in the School of Environment and Natural Resources. Students may not present their Research Seminars during the Summer Quarter or in any venue other than the Seminar Series. The Graduate Studies Committee chair will not approve the Application to Graduate until this research seminar has been presented. Therefore, doctoral students must plan ahead so they can complete this requirement prior to graduation.

## 3.16 DISSERTATION REQUIREMENTS

The central focus of the Ph.D. degree is the development of a scholarly research dissertation. Scholarly research encompasses activities that probe in depth what is known about a subject or a problem under investigation, identifying questions at the edge of the unknown, proposing hypotheses and pursuing information that might contribute to seeking answers and insights to those questions to the satisfaction of critical peer

review. The goal is to expand the body of knowledge in a given field. Scholarly work, therefore, consists of the (a) acquisition of significant and extensive knowledge in an area or areas of study, (b) synthesis and description of the diverse aspects of knowledge, and (c) creative proposition and investigation of a novel aspect or new idea which purports to expand, alter, or clarify the status of knowledge. Stated simply, doctoral dissertation research should make a contribution to the body of knowledge. Thus, the development of a scholarly research dissertation is not a trivial exercise.

### 3.16.1 Dissertation Topic

Students shall select a dissertation topic by the end of their second quarter in the program, generally the Winter Quarter, and report that topic to the Graduate Studies Committee using the Dissertation Topic & Advisory Committee for Doctoral Degree Students form available on the [School website](#).

### 3.16.2 Dissertation Proposal

All students shall prepare a dissertation proposal during their first year in the Ph.D. program. This should be a collaborative effort between the student and her or his advisor and Advisory/Examination Committee. Guidelines for preparing the dissertation proposal are provided in Appendix C.

The dissertation proposal, approved by the student's advisor and Advisory/Examination Committee, shall be submitted to the Graduate Studies Committee by the fifth Friday of the fifth quarter of enrollment in the Ph.D. program. The proposal must be accompanied by the completed Master's/Ph.D. Proposal form.

The Graduate Studies Committee chair shall review the submission to ensure that the proposed research falls within the generally recognized bounds of the field of environment and natural resources, and that it adheres to the standards of scholarship set forth by the graduate faculty and listed in the front of this Handbook. If it does, then the Graduate Studies Committee chair will sign and return the form to the graduate program office in the School of Environment and Natural Resources. If it does not, then the Standard Operating Procedures (Appendix B.3) shall guide handling of the case. Any faculty member of the Environment and Natural Resources Graduate Program may review a proposal by requesting a pdf copy of the proposal via email from the graduate program office in the School of Environment and Natural Resources.

The dissertation proposal is meant to be reasonably flexible to allow students to develop and carry out their research as they, their advisor, and their Advisory/Examination Committee see fit. If, however, the research direction is altered to such an extent that there is a significant change in the theory bases or bodies of knowledge being pursued, the student shall inform the Graduate Studies Committee and file an amendment to the dissertation proposal. This amendment must be approved in writing by the student's advisor.

### 3.16.3 Draft Approval and Notification of Final Oral Examination

The student must submit a completed, typed dissertation draft to his or her Advisory/Examination Committee (see Section 3.7) for review not fewer than three weeks prior to the date of the Final Oral Examination (see Section 3.17). Approval of the dissertation draft indicates that the members of the Advisory/Examination Committee judge it to be of sufficient quality to warrant holding the Final Oral Examination. Each Advisory/Examination Committee member indicates approval of the dissertation draft by signing the Draft Approval/Notification of Final Oral Examination form that must be submitted to the Graduate School (with a copy to the graduate program office in the School of Environmental and Natural Resources, along with the Exit Seminar form for the open portion of the Final Oral Examination as stated in 3.17.1) no later than two weeks before the date of the Final Oral Examination. The student is responsible to deliver, in person, the completed Draft Approval/Notification of Final Oral Examination form and a printed copy of the dissertation for format review to the Graduate School. Once the Graduate School approves the Final Oral Examination Committee, the Final Oral Examination Report is sent to the advisor via email as a pdf attachment.

### 3.16.4 Format Review

The student must submit the complete, typed dissertation draft to the Graduate School for format review at the time the Draft Approval form is submitted. The dissertation must conform to Graduate School format requirements as described in the Guidelines for Preparing and Submitting Theses, Dissertations and D.M.A. Documents, available on the [Graduate School website](#). The involvement of the Graduation Services area in dissertation preparation is limited to standardizing the format and arrangement of content. Specific content matters are handled between the student and the advisor. Approved dissertations must be submitted electronically to OhioLINK and the Final Approval form, signed title page, and fees must be

submitted by the published deadlines for the student to be eligible for graduation during the given quarter.

### **3.16.5 Approval**

The final approval of the dissertation cannot occur until the Final Oral Examination has been completed satisfactorily and all changes required by the Advisory/Examination Committee have been incorporated. Each member of the Advisory/Examination Committee indicates approval by signing the Final Approval form in the appropriate places, e.g. satisfactory or unsatisfactory. The student will submit the form to the graduate program office in the School of Environment and Natural Resources and the Graduate School by the published deadline for the quarter of graduation.

### **3.16.6 Restricted Material**

Dissertations must not contain material restricted from publication.

### **3.16.7 Submission**

Approved dissertations must be submitted electronically to OhioLINK and the Final Approval form, and fees must be submitted by the published deadlines for the student to be eligible for graduation during the given quarter.

### **3.16.8 Abstract**

A dissertation abstract of 350 or fewer words, containing the principal findings of the student's research, must be submitted in MS Word format via email to the graduate program office in the School of Environment and Natural Resources no later than the first day of the quarter in which the Final Oral Examination will be scheduled. The Application to Graduate form will not be signed by the Graduate Studies Committee chair until the abstract is submitted.

### **3.16.9 Fees**

Fees for the doctoral hood (if attending commencement) and processing must be paid to the Graduate School using check or money order (made out to The Ohio State University) by the published deadline for the quarter of graduation along with the Final Approval form.

## **3.17 FINAL ORAL EXAMINATION**

The Final Oral Examination tests originality, independence of thought, ability to synthesize and interpret, quality of research presented, and contribution to the body of knowledge. The examination is administered by the student's Advisory/Examination Committee and is chaired by the student's advisor. The examining panel

also includes a representative from the Graduate School appointed specifically for that examination (See 3.17.3). The focus of the examination includes, but is not restricted to, discussion of the dissertation and may cover principles, philosophies and historic perspectives as well as data. The Final Oral Examination must be completed prior to the published deadline for the quarter of graduation. Students are strongly advised to schedule their final oral examinations at least one month in advance to ensure all members of the Final Oral Examination Committee, including the Graduate Faculty Representative, may attend at the required time.

### **3.17.1 Scheduling the Final Oral Examination and Exit Seminar**

It is the responsibility of the student to schedule the Final Oral Examination. The examination must be scheduled for a three-hour block of time during announced university business hours, Monday through Friday.

Within this three-hour block of time, the final oral examination must include two components: (1) an open portion, or Exit Seminar, followed immediately by (2) a closed examination. The first component is open to any faculty member, staff, students, and other guests interested in attending. This open component will consist of a 30-40 minute overview of the dissertation presented by the candidate, followed immediately by 20-30 minutes of questions from the general audience. At the close of this open question period or when no questions remain from those in attendance – whichever comes first – the examination will proceed into a closed session in which only the candidate and Advisory/Examination Committee will be present.

The student's advisor, all members of the student's Advisory/Examination Committee, and the Graduate Faculty Representative must be present for the full three hours (see 3.17.5). The examination cannot take place until the dissertation draft has been approved by the Advisory/Examination Committee (3.16.3) and must be satisfactorily completed prior to the published deadline for the quarter of graduation. The student must be registered for at least three credits during the quarter in which the Final Oral Examination is administered and in the quarter of graduation.

All doctoral students must present an Exit Seminar on the dissertation research as a part of their Final Oral Examination in addition to the completed Research Seminar presented in the Natural Resources Seminar

Series (Section 3.15). He or she must submit the completed Exit Seminar form with the Draft Approval/Notification of Final Oral Examination form to the graduate program office in the School of Environment and Natural Resources. The office will produce announcement fliers that can be posted in Kottman Hall and sent to other potentially interested departments and programs. The student is responsible for posting fliers in Kottman Hall.

### 3.17.2 Notification

Once the dissertation draft is approved by the student's Advisory/Examination Committee, members of the Committee will sign the Draft Approval/Notification of Final Oral Examination form (3.16.3). This document must be submitted to the Graduate School and the graduate program office in the School of Environment and Natural Resources not later than two weeks prior to the scheduled date for the Final Oral Examination.

### 3.17.3 Graduate Faculty Representative

Once the Draft Approval/Notification of Final Oral Examination form is received in the Graduate School a Graduate Faculty Representative is appointed who will be a graduate faculty category P member who does not hold an appointment in the School of Environment and Natural Resources and is not a member of the student's Advisory/Examination Committee. Not less than one week before the Final Oral Examination, the student must provide the Graduate Faculty Representative with a typed dissertation draft. In addition to being a full voting member of the Final Oral Examination Committee, the Graduate Faculty Representative reports her or his judgement on the quality of the examination, the dissertation, and the student's performance to the Graduate School.

If the Graduate Faculty Representative judges the dissertation to be unsatisfactory, he or she will advise the student's advisor and the Graduate School of that fact not later than one day prior to the Final Oral Examination. After consulting with the student and the members of the Advisory/Examination Committee, the advisor may elect to hold the Final Oral Examination as scheduled or postpone it until the situation is resolved.

In cases where the Final Oral Examination is reviewed, the Graduate Faculty Representative reports to the Graduate Council on the fairness of the conduct of the examination and its conformity to Graduate School rules.

### 3.17.4 Postponement

The Final Oral Examination must be held at the time and place scheduled unless circumstances prompt the advisor to postpone it. Before taking such action, the advisor must consult the student and the members of the Advisory/Examination Committee, including the Graduate Faculty Representative, and inform the Graduate Studies Committee and the Graduate School.

### 3.17.5 Attendance of Advisory/Examination Committee

All members of the student's Advisory/Examination Committee must be present during the entire final oral examination (consisting of both the open and closed components). Members of the Advisory/Examination Committee are expected to participate fully in questioning and discussion during the course of the closed portion of the examination and in the decision on results at the end of the examination. If not all Advisory/Examination Committee members can be physically present, a Request for Video Conferencing form may be submitted to the Graduate School no later than two weeks prior to the examination. Refer to the Graduate School Handbook, Appendix A, for the complete guidelines for video conferencing.

### 3.17.6 Results

Immediately after the Final Oral Examination, the Advisory/Examination Committee will meet alone to discuss the student's performance and determine the outcome. A decision on satisfactory or unsatisfactory performance will be determined by vote. Each examiner will indicate his or her judgment by signing the Final Oral Examination Report form in the appropriate places, e.g. satisfactory or unsatisfactory. The student will submit the form to the graduate program office in the School of Environment and Natural Resources and the Graduate School by the published deadline for the quarter of graduation. Failure to meet this deadline will result in the student being removed from the graduation list (Graduate School Handbook, VII.11).

**a. Satisfactory:** The student is considered to have completed the Final Oral Examination successfully only when the decision of the Advisory/Examination Committee is unanimously affirmative.

**b. Unsatisfactory:** If the examination is judged unsatisfactory, the Advisory/Examination Committee must decide whether the student will be permitted to take a second Final Oral Examination and must record

that decision on the Final Oral Examination Report form.

**3.17.7 Second Final Oral Examination**

If a second Final Oral Examination is held, the Advisory/Examination Committee must be the same as for the first Final Oral Examination unless a substitution is approved in advance by the Graduate Studies Committee and the Graduate School. The second examination is not open to persons other than the Advisory/Examination Committee and the Graduate Faculty Representative. In the instance of a second Final Oral Examination, only the closed portion of the examination need be repeated.

**3.17.8 Repeat Examinations**

No student is permitted to take the Final Oral Examination more than twice. A student whose performance is recorded as unsatisfactory on two attempts at the Final Oral Examination is not permitted to be a doctoral candidate in the Environment and Natural Resources Graduate Program or in any other graduate program at The Ohio State University.

**3.17.9 Review**

On written appeal by the student or a member of the Advisory/Examination Committee, the Graduate School will ask the Graduate Council to review the Final Oral Examination to ensure that it was conducted in conformity with the rules of the Environment and Natural Resources Graduate Program and the Graduate School, fairly and without prejudice to the student. The Graduate Council has established review procedures which are available in the Graduate School Handbook, Appendix C.

**3.18 APPLICATION TO GRADUATE**

Any student planning to graduate must complete and submit the Application to Graduate form to the Graduate School not later than the second Friday of the quarter in which graduation is expected. The application is good for that quarter only. Submitting this application indicates that the student expects to complete all degree requirements by the published deadlines for the quarter of graduation. The application must be signed by the student, his or her advisor, and the Graduate Studies Committee chair. The names of the members of the Advisory/Examination Committee must be listed on the application.

**3.18.1 End of Quarter Completion**

A student who does not meet published graduation deadlines but who does complete all degree

requirements by the last business day prior to the first day of classes for the following quarter may graduate the following quarter without registering or paying fees.

**3.18.2 Other Graduation Requirements**

To qualify for graduation, students must:

- a. have fulfilled all requirements of the Graduate School as published in the Graduate School Handbook and the Environment and Natural Resources Graduate Program as published in this Handbook; and
- b. have final grades for all courses posted with the University Registrar prior to noon on the Friday before commencement.

**4. THE MASTER OF ENVIRONMENT AND NATURAL RESOURCES GRADUATE PROGRAM**

**4.1 PURPOSE**

The Master of Environment and Natural Resources is an applied graduate degree for practicing professionals and others who want to enhance their professional competency in environmental and natural resource science and management. The MENR is a separate program from the Master of Science for students seeking a theory-into-practice orientation that does not require a thesis. The MENR provides a rigorous but flexible program, creating valuable educational and training experiences for persons planning for or already engaged in professional careers in environmental or natural resources management, administration, planning, or education. Students in the MENR program can extend their depth of knowledge and expertise in environmental and natural resource science and management beyond that acquired during bachelor's degree programs and at the same time improve their decision-making skills.

Matriculated MENR students who wish to transfer to the MS or PhD degree programs should consult the Standard Operating Procedures (Appendix B, 4.2) and discuss their interest with their current faculty advisor, the Graduate Studies Committee chair, and the MENR program director.

**4.2 THE MENR DIRECTOR**

The Director of the School of Environment and Natural Resources shall designate and appoint a Director to guide and oversee the administration of the MENR program. This shall be a 50% appointment. The roles of the



Director shall include but not be restricted to: promoting the program to potential clientele groups; recruiting students; matching students to advisors and advisory committee members; working with the Environment and Natural Resources graduate program office to create and maintain a web site for the program; serve ex-officio on the Environment and Natural Resources Graduate Studies Committee; and advise the Graduate Studies Committee chair and the School Director on policy and administrative matters involving MENR students. The policy-making body for the MENR will be the Graduate Faculty in the Environment and Natural Resources Graduate Program working through the Environment and Natural Resources Graduate Studies Committee.

#### 4.3 ADMISSION REQUIREMENTS

- a. An undergraduate degree from an accredited college or university with a major in an environmental or natural resources field or in a related discipline. Applications are also encouraged from professionals in other fields who want move into environmental or natural resource professions.
- b. A minimum of 10 quarter credit hours of college mathematics and /or statistics; 10 quarter credits in physical science; 10 quarter credits in biological science; and 30 quarter of social science and humanities, including a least 10 in social science.
- c. An undergraduate grade-point average of 3.0 or higher on a 4.0 scale. Applicants with undergraduate grade-point averages below 3.0 must take the GRE and report their scores to Graduate Admissions. These applicants will be considered for admission based on a combination of GRE scores and professional experience.
- d. Applicants must provide a statement describing their career goals and how the MENR program will assist them in attaining those goals.
- e. Applicants must solicit three letters of recommendation and have them either submitted online or sent via email or postal mail directly to the ENRGP office. For applicants with fewer than five years professional experience, at least two of those letters should come from faculty in their undergraduate programs (including their advisor), and one letter should be from an immediate supervisor who can discuss the applicant's professional experience and potential for advancement. Applicants with five or more years of professional experience should include at least one letter from an immediate supervisor who can discuss the applicant's professional experience and potential for advancement.
- f. International students whose first language is not English are required to score at least 550 (written) or 213 (computer-based) or 79 (internet-based) on the Test of English as a Foreign Language (TOEFL) or 82 in the MELAB or 7 in the IELTS. Scores should be no more than two years old from the proposed quarter of admission. The TOEFL is waived if a bachelor's degree or higher was earned in an English-speaking country or if the applicant is a citizen of the following countries and regions: Australia, Belize, Canada (except Quebec), Ireland, New Zealand, Liberia, United Kingdom (England, Wales, Scotland, Northern Ireland), The Commonwealth Caribbean, and the United States.
- g. Students seeking to enter the dual degree program with the John Glenn School of Public Affairs should consult with the Director of Admissions and Student Services or the Recruitment and Admissions Coordinator of the John Glenn School of Public Affairs. Normally, admission to these programs is restricted to the Autumn Quarter. See section 4.9 for more information.

#### 4.4 THE ADVISOR AND ADVISORY/ EXAMINATION COMMITTEE

Each MENR student shall work with an academic advisor and an Advisory/Examination Committee who will guide the student in selecting courses for his or her field of study, oversee the selection and development of the student's project, and serve as the examining committee for the final examination. The Advisory/Examination Committee comprises at least two OSU graduate faculty members, including the student's advisor who must be a member of the Environment and Natural Resources graduate faculty. Additional qualified individuals who are not members of the graduate faculty may serve on the Advisory/Examination Committee with the approval of the Environment and Natural Resources Graduate Studies Committee and the Graduate School.

Each student must select an Advisory/Examination Committee and submit a signed Project Topic & Advisory Committee for MENR Students form to the graduate program office for approval from the Graduate Studies Committee chair. Full-time students must submit this form to the graduate program office by the end of the fifth

Friday of the second quarter of full-time enrollment. Part-time and distance education students must submit this form to the graduate program office after the student has completed 15 credits of graduate course work.

Adjunct faculty at The Ohio State University, faculty at other colleges and universities, and other qualified professional scientists may serve on master’s Advisory/Examination Committees with the approval of the Graduate Studies Committee and the Graduate School. These “extra” members shall be in addition to the three members who must be graduate faculty members. Both the student and the advisor must submit letters of petition along with a current curriculum vitae of the “extra member” to the Graduate Studies Committee for review. Once the GSC approves the “extra” member, the petition is submitted to the Graduate School for final approval. Petitions for “extra” members should be submitted with the signed Project Topic & Advisory Committee for MENR Students form.

**4.4.1 Changing Advisors or Members of the Advisory/Examination Committee**

Students may petition the Graduate Studies Committee to change advisors at any time after their admission. To do this, a student shall submit a request for change of advisor to the Graduate Studies Committee chair. That request must stipulate the reasons for the requested change. The student shall also obtain a letter from the prospective new advisor indicating his or her willingness to assume that role and stipulating any conditions attached to that acceptance. Upon receipt of those letters, the Graduate Studies Committee will review the request and may request input from the current advisor, members of the student’s Advisory/Examination Committee and additional information from the student and the proposed new advisor. A decision will be rendered within 30 days of receipt of the written request.

Unless significant changes in program direction occur or personal conflicts arise, the Advisory/Examination Committee should remain unchanged through the duration of the student’s program. Petitions to change the composition of the Advisory/Examination Committee must be submitted in writing to the Graduate Studies Committee for approval. The student must submit a letter justifying the change and the advisor must demonstrate their support for the change by signing the student’s letter or submitting an additional letter.

**4.5 DEGREE REQUIREMENTS**

| Requirements for MENR Degree | Approximate Quarter Credits |
|------------------------------|-----------------------------|
| Core Courses (4)             | 17                          |
| Field of Study               | 30                          |
| Independent Project          | 8                           |
| Total Credits                | 55                          |

**4.5.1 Core Courses (17 Credits)**

The Core comprises four courses that provide students with fundamental understanding of the ecological foundations of environmental and natural resources problems and issues, the legal framework that defines the responsibilities of environmental and resources agencies and organizations, and the processes that underlie environmental management and decision making. These courses are:

**ENR 693** Individual Studies in Natural Resources with Craig Davis (5 credits)

Introduction to environmental science, the ecological foundation of environmental systems, and the ecological impacts of environmental degradation by humans. Au Qtr.

**ENR 752** Environmental Science and Law (4 credits)

Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects. Au Qtr.

**ENR 835** Ecosystem Management Policy (5 credits)

Theory and practice of integrating natural and social science for managing watersheds, forests, and regions. Foundations, adoption, and potential future for this emerging natural resources paradigm. Au Qtr.

One ecology course (such as ENR 622, 623, 650, 725, or 733), subject to the recommendation and approval of the student’s Advisory/Examination Committee and the Graduate Studies Committee.

**4.5.2 Field of Study Courses (30 credits)**

Through careful consultation with their advisors, students must select courses within their fields of study that best support their areas of interest and professional goals and objectives. A minimum of 30 credits of graduate course work must be selected that represents a coherent field of study in environment and natural resources.

### 4.5.3 Independent Project (8 credits)

Students must engage in an experiential learning project to apply skills acquired in their field of study course work. Eight credit hours of Independent Study (ENR 893) should be taken while conducting the project. Examples of suitable projects include a professional paper related to their interest area and usable by a natural resource agency or organization, an outreach or Extension publication, a curriculum for a course at the high school or middle school level, or a review paper suitable for publication in a peer-review journal. The project can be under the direction of more than one advisor. The title of the independent project and a brief description of the study situation or problem will be submitted with the Project Proposal for MENR Students form to the graduate program office.

The Project Proposal form must be completed and submitted to the graduate program office no later than the quarter that the student has completed 35 credits of graduate course work. The final project must be completed to the Advisory/Examination Committee's satisfaction prior to the final MENR examination.

### 4.5.4 Program of Study (POS)

The Program of Study (POS) is an official document that stipulates the course work that the student shall complete as part of his or her degree requirements. Therefore, it is important that the POS be approved relatively early in the student's enrollment. The Advisory Committee and Program of Study form, approved by the student's Advisory/Examination Committee, must be submitted to the graduate program office in SENR no later than the quarter that the student has completed 15 credits of graduate course work.

All POSs shall include Core Courses, Field of Study courses, and Independent Project (ENR 893) credits. The course work listed in the POS must prescribe a cohesive professional program within the field of environment and natural resources.

The Graduate Studies Committee reviews POSs for adherence to required courses, independent project credits, and the appropriateness of course work for professional development and a degree in the field of environment and natural resources. Requests for changes in the Program of Study must be approved by the student's advisor and Advisory/ Examination Committee and by the Graduate Studies Committee prior to the quarter in which the course changes are to be implemented. Requests for substitutions for core courses

and supporting explanations must be submitted in writing by the advisor to the graduate program office for the Graduate Studies Committee's review. Alteration of core requirements will be allowed only under extraordinary conditions.

### 4.5.5 Project Requirement

All students shall prepare a project proposal as a collaborative effort between the student and his or her Advisory/Examination Committee. It is not expected that the student will be fully conversant in all aspects of his or her project before completing the project proposal. The title of the independent project and a brief description shall be submitted with the Project Proposal form to the graduate program office no later than the quarter that the student has completed 35 credits of graduate course work. The Graduate Studies Committee chair shall review the submission to ensure that the proposed project falls within the generally recognized bounds of the fields of environment and natural resources

The final project must be approved by the Advisory/ Examination Committee prior to the final MENR examination and a copy submitted to the graduate program office in SENR no later than the published deadline for the Master's Examination Report form. Students are strongly advised to submit their complete project at least one month prior to the final examination to ensure all members of the Advisory/Examination Committee have adequate time to review the project and request revisions.

## 4.6 FINAL MENR EXAMINATION

As required by the Graduate School (Graduate School Handbook, VII.2), each student will complete a Final Master's Examination, which will include a written and oral examination. The examination will evaluate the student's proficiency and understanding of his/her Field of Study, with emphasis on the topic selected for the student's project. The final examination shall be administered by the student's Advisory/Examination Committee and shall be chaired by the student's advisor. Students are strongly advised to schedule their final oral examination at least one month in advance to ensure all members of the Advisory/Examination Committee may attend at the required time.

### 4.6.1 The Written Examination

The Graduate School requires that non-thesis Master's Examination include a four-hour written portion. The MENR written examination can be completed in one four-

hour block, or the exam can be scheduled in several time blocks. For exams scheduled in several time blocks, the exam must be completed within a regular academic week of five days. Advisory/Examination Committee members shall each write questions to submit to the advisor who, together with his or her own questions, will formulate the questions for the written portion of the final examination. The advisor must report the details of format, schedule, and evaluation procedure in writing to the Graduate Studies Committee not fewer than two weeks prior to the beginning of the written portion. The Advisor is responsible for coordinating the written examination.

**4.6.2 The Oral Examination**

Candidates and their advisors are to schedule two hours for the final oral examination. All members of the student’s Advisory/Examination Committee must be present during the entire final oral examination, and all will vote. Only Advisory/Examination Committee members may be present for discussion of the student’s performance and for the vote. If not all Advisory/Examination Committee members can be physically present, a Request for Video Conferencing form may be submitted to the Graduate School no later than two weeks prior to the examination. Refer to the Graduate School Handbook, Appendix A, for the complete guidelines for Videoconferencing.

Once the examination has begun, it must continue to a voting conclusion. After a conclusion has been reached, Advisory/Examination Committee members will indicate that conclusion on the Master’s Examination form by signing in the appropriate spaces. It is the student’s responsibility to report the results of the examination to the Graduate Studies Committee and the Graduate School by submitting the Master Examination Report form, with original signatures, to the graduate program office in the School of Environment and Natural Resources and to the Graduate School by the published deadline for the quarter of graduation. Failure to submit either of these documents will result in removal from the graduation list.

Upon recommendation by the Advisory/Examination Committee, a student who has failed his or her final examination may retake that examination one time. In these instances, only the closed portion of the examination need be repeated. The Advisory/Examination Committee for the second examination will include the same faculty members as the first, unless substitution is approved by the Graduate Studies Committee and the Graduate School prior to the date of the second examination. If the student fails the second examination,

the advisor must inform the Graduate Studies Committee chair who will inform the Graduate School. The student will be denied further enrollment in the Environment and Natural Resources Graduate Program.

**4.6.3 Appeal and Review**

If a student is judged to have failed either the first or second examination, he or she or any member of the Advisory/ Examination Committee may appeal the decision but only on the grounds that the “fairness and without prejudice” concept was violated. An appeal must be submitted in writing to the Graduate Studies Committee for review. The Graduate Studies Committee will conduct a hearing and then evaluate the Master’s Examination according to the “fairness and without prejudice” concept (Graduate School Handbook, VI.3 and Appendix C). If the Graduate Studies Committee cannot resolve the case, it will forward it to the Graduate School who will refer it to the Graduate Council for resolution. If either the Graduate Studies Committee or the Graduate Council finds that the rules were not followed or that the examination was not fair or without prejudice, the Graduate School may direct that a new examination be administered.

**4.7 APPLICATION TO GRADUATE**

Each student must complete and submit an Application to Graduate form to the graduate program office in the School of Environment and Natural Resources and to the Graduate School by the published deadline for the expected quarter of graduation. The application is valid only for that quarter. By submitting this form, the student indicates that he or she expects to complete all degree requirements by the prescribed deadlines of that quarter. The Application to Graduate form must be signed by the student, his or her advisor, and the Graduate Studies Committee chair.

**4.7.1 End Of Quarter Completion**

A student who does not meet published graduation deadlines but who does complete all degree requirements and has submitted all forms and the thesis to the Graduate School by the last business day prior to the first day of classes for the following quarter may graduate the following quarter without registering or paying fees. Students who wish to use the End of Quarter option must inform the graduate program office in the School of Environment and Natural Resources and the Graduate School.

#### 4.8 COMBINED BACHELOR'S–MASTER OF ENVIRONMENT AND NATURAL RESOURCES PROGRAM (ENR7)

[pending Graduate School approval]

Students in the ENR7 Program are responsible for completing all requirements and deadlines for the MENR. Further, by the end of the first quarter in the ENR7 Program, the student must file with the Graduate Studies Committee a statement of goals and objectives and a general plan for completing both degrees. This will be forwarded to the Graduate School. The Graduate Studies Committee and the student's advisor will monitor the student's progress toward the graduate degree, but the student is ultimately responsible for completing all requirements and meeting all deadlines.

To earn both degrees, the student must be enrolled in the ENR7 Program for a minimum of four quarters. Should the student fail to make "reasonable progress," he or she may be denied further enrollment in the graduate program and may then complete only the B.S. degree.

#### 4.9 DUAL MASTER'S DEGREE PROGRAM WITH THE JOHN GLENN SCHOOL OF PUBLIC AFFAIRS

The management of natural resources inevitably involves public agencies and the processes by which policies affecting these agencies are developed, implemented, and changed. Graduate faculty in the School of Environment and Natural Resources and the John Glenn School of Public Affairs (formerly Public Policy and Management) cooperate in offering Dual Master's Degree Programs for qualified students wanting preparation for academic and/or professional careers in natural resources public policy and management. Except where modified below, all rules and requirements for each program apply to this dual degree program. Students completing the program will receive two degrees: Master of Environment and Natural Resources and either the Master of Arts in Public Policy or the Master of Public Administration.

##### 4.9.1 Course Work and Research Requirements

Students in this program must complete 28 credits of course work in ENRGP, 8 credits of Independent Study (ENR 893), and 34-40 credits of course work in JGSPA. A minimum of 50 percent of the regular course credits applied to either the MENR or Public Affairs must be unique to each degree. The remainder may be applied to satisfy both requirements (dual credit).

##### 4.9.2 Admission and Enrollment

Students wishing to enroll in the Dual Master's Degree Program must apply and be admitted to both graduate programs. As part of the application procedure, all applicants must complete a Program Plan for Dual Degree form and submit it to the Environment and Natural Resources Graduate Studies Committee chair and the Public Affairs Graduate Studies Committee chair. This form is available on the [Graduate School website](#).

Students admitted to the Environment and Natural Resources Graduate Program may subsequently pursue admission to the Public Affairs program shortly after they arrive on campus or vice versa. All regular admission procedures and criteria apply to applicants wishing to pursue a Dual Master's Degree Program. Students admitted to the Dual Master's Degree Program will have two advisors. The student's Advisory/Examination Committee will comprise a minimum of four members, at least two from each program.

##### 4.9.3 Integrated Program of Study, Final Master's Examination and Quarter of Graduation

Within two quarters after being admitted to the Graduate School, the student must file an approved integrated Program of Study with the Graduate Studies Committee in Natural Resources and the Graduate School. This is to be developed in consultation with and be approved by the student's advisor and Advisory/Examination Committee. Integrating course work requires careful planning. Students should work closely with their advisors.

Students who have completed all other requirements for the Dual Master's Degree Program must satisfactorily complete a Final Master's Examination in Environment and Natural Resources and a Comprehensive Examination in Public Affairs. The Advisory/Examination Committee for the Environment and Natural Resources Examination will comprise a minimum of four members of the graduate faculty, with at least two from each graduate program. All rules and requirements for Final Master's Examinations apply, including reexamination and appeal rules and procedures. Rules for the Public Affairs Comprehensive Examination may be obtained from the Public Affairs program.

Students in the Dual Master's Degree Program will be officially enrolled at any given time in one or both of the two graduate programs. Prior to submitting Applications to Graduate for both degrees, students should confirm that the Program Plan for Dual Degree

form was approved by the Graduate School to ensure that the Graduate School is aware that the student is seeking to graduate with two degrees. Students intending to graduate with one degree in a given quarter and the second during a subsequent quarter must be enrolled in the appropriate program during the quarter of graduation from that program. During any quarter in which the student is enrolled in Public Affairs and not in Environment and Natural Resources, he or she must advise the School of Environment and Natural Resources office that he or she remains active in the Dual Master's Degree Program.

## 5. ONE-OF-A-KIND PROGRAMS

Students wishing to pursue doctoral work in an area related to natural resources but who want to accomplish educational objectives that cannot be accommodated by existing degree programs in environment and natural resources or elsewhere in the Graduate School may apply to the Graduate School's One-of-a-Kind Program. This program enables students to work with graduate faculty to craft a specialized graduate program specifically to fit the needs of that student. Rules and regulations for the One-of-a-Kind Program may be obtained from the Graduate School.

## 6. REGISTRATION

### 6.1 COURSE LOADS

#### 6.1.1 Post-Candidacy Doctoral Students

For doctoral students who have passed their candidacy exam, the following registration criteria apply:

- a. A full-time load for all post-candidacy doctoral students is three credits per quarter. This applies to all post-candidacy doctoral students regardless of appointment or funding source. It also applies for international students and veterans and to student health insurance, financial aid, loans, on-campus housing, athletic event ticket eligibility.
- b. Post-Candidacy students wishing to enroll for more than three credits of course work must consult with the Graduate Studies Committee chair and the graduate program office in the School of Environment and Natural Resources for the current interpretation of the three-credit-hour rule.

- c. Continuous academic-year enrollment is required of post-candidacy doctoral students who matriculated Autumn Quarter 2008 or after (although leaves of absence can be requested),
- d. Summer quarter enrollment is optional except when the Candidacy and Final Oral Examination or graduation occurs in the summer.

#### 6.1.2 All Other Graduate Students

A graduate student must be enrolled in 10 credit hours to be considered full-time. A normal course load per quarter is 12-15 credit hours. The School of Environment and Natural Resources requires full-time master's and pre-candidacy doctoral students to enroll in 18 credit hours per quarter. Enrollment in three credit hours is considered part-time and students are not eligible for Student Health Insurance. Enrollment in five credit hours is considered half-time and meets the eligibility requirements for Student Health Insurance.

- a. Graduate Associates on 50% appointments must register for a minimum of 9 credits, except during the Summer Quarter, when the minimum is 7 credits. The School of Environment and Natural Resources requires full-time master's and pre-candidacy doctoral GAs (GTA, GRA, GAA) to enroll in 18 credit hours per quarter.
- b. Graduate Associates holding 25% appointments must register for a minimum of 7 credits.
- c. Graduate Fellows must register for a minimum of 15 graduate credit hours each quarter.
- d. Graduate Associates whose appointments permit them to work full time on thesis or dissertation research must be enrolled full time each quarter the appointment is held.

Under certain circumstances non-graduate credit course work may count toward the minimum requirements for GA eligibility (Graduate School Handbook, IV.1), but audited courses do not count. Monitoring the appropriateness of non-graduate credit course work will be the responsibility of the Graduate Studies Committee chair.

Research credit reflects time spent by a graduate student pursuing thesis or dissertation research and time invested by faculty members in supervising such research. Therefore, students who in any quarter are spending time on their thesis or dissertation research

must register for appropriate numbers of ENR 999 credits. While there are no firm rules for the number of credits, a general rule should be that for every three hours that the student intends to devote to thesis or dissertation research in a quarter he or she should register for one credit of ENR 999. In effect, a student intending to spend approximately 20 hours per week on research activities, should register for 7 credits of ENR 999. See also Sections 2.6.3 and 3.8.5 for requirements on use of ENR 999 credit to satisfy minimum credit requirements for the master's and doctoral degrees.

## 6.2 PROCEDURES FOR REGISTRATION

Graduate students are expected to register each quarter online at the [www.osu.edu](http://www.osu.edu) website through the Student Center under Buckeye Link. Registration deadlines for each quarter are available on the Graduate School and the University Registrar's websites. Graduate associates and fellowship recipients are encouraged to register early for the appropriate number of hours to ensure disbursement of the fee authorization. Students should discuss their scheduling plans with their advisors, especially if they plan to take courses not on their Program of Study. Graduate students may take courses not on their Program of Study but may not graduate until all Program of Study courses have been completed. Students needing assistance with registration and scheduling may seek assistance from the graduate program office in the School of Environment and Natural Resources or from Registration Services in the Graduate School.

## 7. ACADEMIC STANDARDS

Students are responsible for being aware of and meeting all university, Graduate School, and Environment and Natural Resources Graduate Program requirements and deadlines.

### 7.1 GOOD STANDING

Students will be considered to be in good standing as long as their graduate cumulative grade point average is 3.00 or above and they are deemed to be making "reasonable progress" toward their degrees. Students on Conditional status must satisfy all specified conditions by the end of their third quarter in the program (see Section 8.9) to remain in good standing.

### 7.2 REASONABLE PROGRESS

A student will be making reasonable progress if he or she maintains a 3.0 cumulative grade point average, is

in continuous enrollment (3 quarters out of every 4), is meeting the requirements and deadlines established for the M.S. and Ph.D., and is meeting the research expectations of his or her Advisory/Examination Committee.

### 7.3 DEGREE TIME LIMITS

Full-time students should normally complete all requirements for the M.S. in two years. Full-time, Regular doctoral students should normally complete their degrees in three to four years, and full-time Direct-Admit doctoral students should be able to complete their degrees in four to five years. Part-time students must complete the M.S. within five years from the date of entry. Part-time doctoral students will usually take longer than four years to complete their degrees and may exceed five years but must complete all graduation requirements no later than five years after entering candidacy (Graduate School Handbook, VII.8), and may need to justify the relevance of coursework that is more than five years old according to the Environment and Natural Resources Graduate Program Five-Year-Rule (Section 7.4).

Students deemed to be making reasonable progress may remain in the M.S. program for as long as five years and in the pre-candidacy stage of the doctoral program for as long as five years with concurrence of their advisors, their Advisory/Examination Committees, and the Graduate Studies Committee.

Full- and part-time students who require more time to complete their degrees must petition the Graduate Studies Committee by February 15 of their second (M.S.), fourth (Regular Ph.D.), or fifth year (Direct Admit Ph.D. students and Part-time M.S. and Ph.D. students), this must include a letter from their advisor stipulating that they are making reasonable progress, state reasons why more time is needed, and submit a schedule for completion of the degree.

### 7.4 COURSE TIME LIMIT — 5-YEAR RULE

For M.S. students, only courses taken within five years prior to the date of successful completion of the Master's Examination may be applied toward the degree. For doctoral students, only courses taken within five years prior to the date of successful completion of the Candidacy Examination may be applied toward the degree. This policy is applied without regard to the student's full- or part-time status. The five-year clock is in effect during quarters in which the student is not registered at the university.

Early during the second quarter in which the student is NOT in continuous enrollment, the chair of the Graduate Studies Committee will send a letter to the student informing him or her that "reasonable progress" may be maintained if, and only if, they:

- a. maintain frequent and effective communication with their advisor;
- b. demonstrate to the Graduate Studies Committee that progress is being made toward his or her degree;
- c. keep the School of Environment and Natural Resources informed of his or her current mailing address through the Student Center on Buckeye Link and respond promptly to written and email correspondence;
- d. comply with all relevant deadlines for completion of the Master's Examination, Candidacy Examination, and/or doctoral Final Oral Examination; and
- e. file reports of progress with her or his advisor and the Graduate Studies Committee.

Failure to satisfy these conditions will, after six quarters of noncontinuous enrollment, be considered evidence of "failure to maintain reasonable progress," and the Graduate Studies Committee may recommend to the Graduate School that the student be denied further registration in the program. If such action is taken, the student may reenter the program only by submitting a written letter of petition to the Graduate Studies Committee.

## 8. GRADUATE ADMISSION

### 8.1 RESPONSIBILITY FOR ADMISSION

The admission of students to the Graduate School and the Environment and Natural Resources Graduate Program is the dual responsibility of the Graduate Studies Committee and the Graduate School. Following review of a completed application, the Graduate Studies Committee recommends admission to the Graduate Admissions Office, signified by the chair's signature on the Application Worksheet Form and the graduate program office posting the decision in the Student Information System. Acting for the Graduate School, the Graduate Admissions Office issues a letter of admission on behalf of The Ohio State University.

### 8.2 ADMISSION CATEGORIES

Students are admitted to the Environment and Natural Resources Graduate Program in one of two categories: Regular and Conditional (Sections 8.8 and 8.9, Graduate School Handbook, II.4).

- a. Regular: Applicants who have met all the Graduate School and Environment and Natural Resources Graduate Program requirements and have been approved for admission by the Graduate Studies Committee are designated as regular students.
- b. Conditional: Applicants whose academic records indicate that they may have difficulty performing satisfactorily in a graduate degree program are designated as conditional students by the Graduate Studies Committee or by the Graduate School. The purpose of the conditional classification is to provide students an opportunity to compensate for any deficiencies and to demonstrate the ability to perform satisfactorily in the graduate program.

It is recommended that conditional students not enroll for more than 15 credit hours per quarter and not hold Graduate Associate appointments requiring them to give instruction in the area of subject matter deficiency. If the conditional designation results from a low entering cumulative point-hour ratio (CPHR), the candidate is ineligible to hold an appointment as a Graduate Associate (GA) unless the Graduate School approves a petition from the Graduate Studies Committee.

### 8.3 ADMISSIONS REQUIREMENTS

The following requirements for admission to the Environment and Natural Resources Graduate Program are in addition to those of the Graduate School.

All matriculating M.S. and Ph.D. Soil Science specialization students are expected to have completed the undergraduate courses listed below in mathematics, biological science, chemical science, and physical science, or their equivalent. Students with prerequisite deficiencies should take the coursework during the first year of graduate studies. A grade of B or better is required.

- Elementary Mathematical Functions, Differential Calculus, and Integral Calculus equivalent to OSU Math 150 and 151
- General Biology equivalent to OSU Biology 101
- General Chemistry equivalent to OSU Chemistry 121, 122, and 123



- General Physics equivalent to OSU Physics 111 or 131
- Physical Geology equivalent to OSU Geology 121

### 8.3.1 Master of Science Degree

- An undergraduate degree from an accredited college or university with a major in a natural resources field or a related discipline. Applications from those in fields not normally considered to be related to natural resources will be considered when special merit warrants.
- A minimum of 10 quarter credits of college mathematics and/or statistics; 10 quarter credits in physical science; 10 quarter credits in biological science; and 30 quarter credits of social science and humanities, including at least 10 in social science and 10 in communications, part of which may be English. Students with limited deficiencies may be admitted conditionally and must remove the deficiencies within a specified time.
- An undergraduate grade-point average of 3.0 or higher on a 4.0 scale.
- Environment and Natural Resources Graduate Program target scores are the 67th percentile on the Verbal, Quantitative, and Analytical sections of the Graduate Record Exam (GRE). University averages as of 2006 are 555 for the Verbal, 700 for the Quantitative, and 4.5 for the Analytical, understanding that future university averages will fluctuate year to year. Strong applicants should have GRE scores in the 75-80 percentile. Scores should be no more than five years old from the proposed quarter of admission.
- Three letters of recommendation including one from the applicant's undergraduate advisor.
- A statement of professional goals and objectives explaining what the applicant expects to accomplish in the M.S. program and a current curriculum vitae or resume.
- International students whose first language is not English are required to score at least 550 (written) or 213 (computer-based) or 79 (internet-based) on the Test of English as a Foreign Language (TOEFL) or 82 in the MELAB or 7 in the IELTS. Scores should be no more than two years old from the proposed quarter of admission. The TOEFL is waived if a bachelor's degree or higher was earned in an English-speaking country or if the applicant is a citizen of the following

countries and regions: Australia, Belize, Canada (except Quebec), Ireland, New Zealand, Liberia, United Kingdom (England, Wales, Scotland, Northern Ireland), The Commonwealth Caribbean, and the United States.

- Students seeking to enter the dual degree program with the John Glenn School of Public Affairs should consult with the Director of Admissions and Student Services. Normally, admission to these programs is restricted to the Autumn Quarter. Students in other graduate degree programs who want to do a dual degree in Environment and Natural Resources should consult with the graduate program office in the School of Environment and Natural Resources for guidelines.
- Graduate students enrolled in another degree-seeking graduate program at Ohio State may request a transfer to the Environment and Natural Resources Graduate Program by submitting the Request for Transfer of Graduate Program form (from the [Graduate School website](#)), photocopies of their original application materials from their current graduate program, an updated statement of purpose and resume, new letters of recommendation (if applicable). The Graduate Studies Committee may request additional materials to assist their evaluation of the transfer request. The request for transfer will be reviewed after all of the materials are received in the graduate program office and an ENR graduate faculty member has agreed to serve as the potential advisor.

### 8.3.2 Regular Ph.D. Program

- A thesis master's degree in environment and natural resources or a related discipline from an accredited college or university.
- Foundational course work as follows:
  - Chemistry through organic or biochemistry
  - Physics, Geology or Soil Science
  - General Ecology
  - Mathematics through calculus
  - Statistics equivalent to OSU's Statistics 530
  - Resource or Environmental Economics
  - Resources Sociology or Environmental Psychology
  - Resource Policy or Environmental Law
- An undergraduate grade-point average of 3.0 or higher and a master's grade-point average of 3.5 or higher on a 4.0 scale.

- d. Environment and Natural Resources Graduate Program target scores are the 67th percentile on the Verbal, Quantitative, and Analytical sections of the Graduate Record Exam (GRE). University averages as of 2006 are 555 for the Verbal, 700 for the Quantitative, and 4.5 for the Analytical, understanding that future university averages will fluctuate year to year. Strong applicants should have GRE scores in the 75-80 percentile. Scores should be no more than five years old from the proposed quarter of admission.
- e. International students whose first language is not English are required to score at least 550 (written) or 213 (computer-based) or 79 (internet-based) on the Test of English as a Foreign Language (TOEFL) or 82 in the MELAB or 7 in the IELTS. Scores should be no more than two years old from the proposed quarter of admission. The TOEFL is waived if a bachelor's degree or higher was earned in an English-speaking country or if the applicant is a citizen of the following countries and regions: Australia, Belize, Canada (except Quebec), Ireland, New Zealand, Liberia, United Kingdom (England, Wales, Scotland, Northern Ireland), The Commonwealth Caribbean, and the United States.
- f. A statement of professional goals and objectives explaining what the applicant expects to accomplish in the Ph.D. program and a current curriculum vitae or resume.
- g. A description of the applicant's master's thesis research.
- h. Three letters of recommendation, including one from the applicant's master's thesis advisor and one from a member of the applicant's master's advisory committee.
- i. Students enrolled in the Master of Science Program in Environment and Natural Resources at Ohio State University who wish to apply for admission to the doctoral program may do so by submitting a letter to the Graduate Studies Committee chair. They must also submit a current, detailed statement of goals, a description of their master's thesis research, and letters of recommendation from the three members of their master's Advisory/Examination Committee. Those letters must comment on the student's potential for doing Ph.D.-level scholarly research. Because these referees cannot provide such assessments until the student has made significant progress on his or her master's research, students wishing to pursue doctoral degrees are advised to focus on their research early in their master's programs. The same admission criteria applied to students entering from off campus will be used in evaluating applicants receiving master's degrees from the School of Environment and Natural Resources.
- j. Graduate students enrolled in another degree-seeking graduate program at Ohio State may request a transfer to the Environment and Natural Resources Graduate Program by submitting the Request for Transfer of Graduate Program form (from the [Graduate School website](#)), photocopies of their original application materials from their current graduate program, an updated statement of purpose and resume, new letters of recommendation (if applicable). The Graduate Studies Committee may request additional materials to assist their evaluation of the transfer request. The request for transfer will be reviewed after all of the materials are received in the graduate program office and an ENR graduate faculty member has agreed to serve as the potential advisor.

Exceptional students who are deficient in one or more of these admission requirements may occasionally be admitted to the doctoral program. These students will be informed of their deficiencies and will be expected to remove them by the end of their first year in the program.

### 8.3.3 Direct-Admit Ph.D. Program

Outstanding applicants to the Environment and Natural Resources Graduate Program who hold an appropriate bachelor's degree or a bachelor's degree with a professional or non-thesis graduate degree may, upon the recommendation of their future advisor and with the approval of the Graduate Studies Committee, be admitted directly into the Ph.D. program. Such students must present an academic record of a quality suitable for nomination for a University Fellowship without the use of waivers. This program allows outstanding students to focus on long-term academic goals. This degree track normally takes four years to complete.

Students applying for admission as Direct-admit doctoral students must hold a bachelor's degree in natural resources, environmental science, or a related field and must satisfy all of the admissions requirements except those involving an earned thesis master's degree. These students must include a letter of recommendation from their undergraduate advisor in the three letters that they provide, plus the fourth letter from the future faculty advisor.

## 8.4 COMBINED BACHELOR'S - MASTER OF SCIENCE PROGRAM (ENR7)

### 8.4.1 Admission Criteria

The purpose of the Combined B.S.–M.S. Program is to provide outstanding, mature students an opportunity to pursue the B.S. and M.S. simultaneously, and thereby reduce the time required to complete the two degrees.

Applicants for the ENR7 Program are evaluated by the Graduate Studies Committee by the same standards and criteria used when evaluating applicants for regular admission. Further, applicants to the ENR7 Program must submit documentation that they have satisfactorily fulfilled the following requirements:

- a. have an overall grade point average at the time of application of at least 3.5 and be a participant in the Environment and Natural Resources Honors Program or be eligible for admission to that program, and
- b. have completed at least 135 undergraduate credits, including all General Education Curriculum requirements.

### 8.4.2 Application Procedures

Admission to the ENR7 program requires approval of the School of Environment and Natural Resources, the Graduate Studies Committee and the Graduate School. Applicants must complete and submit the application for admission on the [Graduate Admissions Office's website](#) and the Combined Undergraduate/Graduate and Professional/Graduate Program Form on the [Graduate School's website](#). Upon approval, the Graduate School posts the admission to the combined program and issues an admission letter. Admission to the ENR7 program cannot be as Conditional status.

The combined program materials are completed in consultation with the student's undergraduate faculty advisor including the preparation of a Program of Study listing all intended course work. Courses for which graduate credit is proposed are to be marked with an asterisk. Graduate credit must total a minimum of 45 credits. The completed combined program application is then submitted to the Secretary of the School of Environment and Natural Resources who will refer it to the School's Honors Committee for approval of the undergraduate aspects of the proposed Program of Study. Once the Honors Committee has approved the Program of Study, the application is forwarded to the Graduate Studies Committee where it is added to the

graduate application for admission and reviewed for admission by the Graduate Studies Committee.

Once accepted to the M.S. program the ENR7 student must satisfy all requirements, deadlines, and standards of that program (see Section 2).

### 8.5 ADMISSION DATES

Admission to the Environment and Natural Resources Graduate Program is normally restricted to Autumn Quarter. Students will be admitted at other times of the year only under unusual circumstances and then only with the express approval of the Graduate Studies Committee upon recommendation by the applicant's potential advisor. Students admitted for Autumn may begin in the preceding Summer Quarter if request for such admission is supported by the student's advisor.

Students may also petition the Graduate Studies Committee to delay their admission for up to four quarters by the student's assigned advisor submitting a letter of support. Such petitions will be approved only under compelling circumstances, because students entering late are out of phase with required course work and this may extend the time required to finish their degrees. Accepted students who cannot begin their studies in the quarter of admission and who wish to advance their admission date more than four quarters must reapply for admission through the Graduate Admissions Office and may need to resubmit application materials to the School of Environment and Natural Resources.

### 8.6 APPLICATION DEADLINES

Applications for the M.S. and Ph.D. programs are reviewed between January and March of each year for admission the following Autumn quarter. All international students seeking University Fellowships must have a completed application on file in the Graduate Admissions Office not later than the last business day of November. All other international students and U.S. students seeking financial support (fellowships, and research and teaching associateships) must have a completed application in the Graduate Admissions Office by January 15. Applicants not seeking financial support must have a completed application in the Graduate Admissions Office by March 1. Applications received after March 1 will be reviewed only at the request of a member of the graduate faculty who is interested in advising the applicant.

Members of the graduate faculty may request that particular applicants be reviewed for admission in the

Winter, Spring, or Summer Quarters. Upon receipt of such a request, the Graduate Studies Committee will perform such a review and send approved requests to the Graduate Admissions Office.

Applications for the MENR program are accepted year-round, but students are highly encouraged to begin Autumn quarter due to course sequencing. Applications must be complete by the following deadlines: Autumn – August 15, Winter – November 15, Spring – February 15, Summer – May 15. University and School of Environment & Natural Resources funds are typically not available for MENR students. Other funding sources, such as employer reimbursement, may be available.

### 8.7 ADMISSION PROCEDURES

Official applications for admission must be submitted online to the Graduate Admissions Office. Applicants must also send sealed, official transcripts from each higher education institution previously attended, official GRE and TOEFL scores, and the online application fee directly to the Graduate Admissions office. Applicants must send the statement of goals, curriculum vitae/ resume, three online letters of recommendation, and sealed, official transcripts from each higher education institution previously attended directly to the graduate program office in the School of Environment and Natural Resources.

Once an applicant's file is complete, and a graduate faculty member has indicated a willingness to serve as advisor, it is reviewed by the Graduate Studies Committee which will take one of three actions:

- a. determine that the applicant meets all requirements and is admissible Regular,
- b. determine that the applicant has minor deficiencies but is admissible Conditional, stipulate the exact conditions to be met and send the application to the Graduate School for review, or
- c. determine that the applicant is not admissible.

The Graduate Studies Committee will inform graduate faculty of complete or incomplete applicant files that are available for review. Faculty members may review the completed applications for admission and indicate their interest in advising a potential student. No student is admitted to the program unless a faculty member has been identified to serve as that student's advisor. It is

understood, however, that admitted students may change advisors after they arrive on campus with the approval of the Graduate Studies Committee (see Sections 2.4 and 3.5).

Once a faculty member has indicated a willingness to serve as advisor for an admissible applicant, the Graduate Studies Committee chair signs the referral form indicating the admission decision of the Graduate Studies Committee and the conditions, if applicable. Regular admits are posted and sent a letter of offer by the graduate program office in the School of Environment and Natural Resources and the Graduate Admissions Office sends the official letter of admission. Conditional admits must be approved and posted by the Graduate School.

In unusual cases where a rapid decision on admission is required, the Graduate Studies Committee chair is empowered to make this decision and report it for concurrence at the next meeting of the Graduate Studies Committee.

### 8.8 REGULAR ADMISSION

Students who meet all of the admissions requirements are admitted Regular.

### 8.9 CONDITIONAL ADMISSION

Because the Environment and Natural Resources Graduate Program is broadly interdisciplinary, otherwise well qualified applicants may have deficiencies in their academic background or GRE or TOEFL scores. The specific conditions, including course or credit requirements and time limits are included in the official letter of acceptance sent by the Graduate Admissions Office. Further, non-traditional students occasionally have grade records that are not clear enough to enable the Graduate Studies Committee to make a judgement about likely success in the Environment and Natural Resources Graduate Program. In such cases, applicants may also be admitted conditionally with the stipulation that they must earn B or higher grades in their first 15 credits of regular, graded graduate course work.

Students on Conditional status may petition the Graduate Studies Committee to amend or remove some or all conditions. This must be done in writing to the Graduate Studies Committee chair and the reasons for the request must be clearly elaborated. A support letter from the student's advisor is recommended but not required. The Graduate Studies Committee will act on such petitions within one month of the date they are received.

All conditions must be satisfied no later than the end of the third quarter of the student's enrollment in the program. Failure to do so can result in a recommendation to the Graduate School for dismissal based on failure to maintain "reasonable progress." The Graduate Studies Committee will review the progress of all students on Conditional status each quarter. When a student satisfies all conditions, the Graduate Studies Committee chair will inform the Graduate School and request that the student be removed from Conditional status. When a student has failed to satisfy all conditions by the end of the third quarter in residence, further registration in the program may be denied until the conditions are satisfied.

Students admitted Conditionally must be transferred to Regular status before they may make Application to Graduate, e.g. the Graduate Studies Committee chair may not sign an Application to Graduate form for a student still on Conditional status.

In the case of part-time students, the three quarter limit may be extended with the permission of the Graduate Studies Committee. Any quarter in which a student is enrolled for 10 or more credits (9 for Graduate Associates), that student is considered to be a full-time student.

It is the student's responsibility to understand and satisfy the conditions of admission within the allotted time. Students wishing clarification should consult with the Graduate Studies Committee chair. Students should also be aware that faculty advisors and Advisory/Examination Committees can neither amend nor waive conditional requirements, including the three-quarter time limit.

### 8.10 INQUIRIES FROM POTENTIAL STUDENTS

The Graduate Studies Committee chair and the graduate program office of the School of Environment and Natural Resources will be responsible for responding to inquiries and conducting much of the correspondence with potential applicants. It is understood, however, that faculty members are the most effective agents in graduate student recruitment. Graduate faculty members are encouraged to correspond directly with potential students and are asked to copy all correspondence to the Graduate Studies Committee chair and the graduate program office of the School of Environment and Natural Resources for inclusion in the student's file. It is especially important that outstanding candidates be identified early so they can be considered for fellowship nominations and other funding opportunities.

When potential applicants contact the School, they should be sent information on the Graduate School, the School of Environment and Natural Resources, and other pertinent literature or directed to online information available from the graduate program office. These materials should be sent with a letter or email message from the Graduate Studies Committee chair welcoming their interest in the Environment and Natural Resources Graduate Program.

## 9. GRADUATE ASSOCIATES

A Graduate Associate (GA) is a currently enrolled, full-time M.S. or Ph.D. seeking graduate student who holds an appointment to perform services such as classroom or laboratory instruction, supervision of students, grading papers and examinations, research, developing curricular materials, administrative duties, etc. Graduate Associates may be Teaching Associates (GTA), Research Associates (GRA) or Administrative Associates (GAA) according to the duties assigned. Graduate Associate duties are determined by the employer.

Students admitted to the ENR7 Program (Section 8.4) may be appointed as Graduate Associates but may not be assigned to teaching positions.

Normally, Graduate Associates are on 50 percent appointments with a service expectation of 20 hours per week. Under certain circumstances, appointments ranging between 25 percent (10 hours per week) and 75 percent (30 hours per week) are possible. Graduate Associates on appointment at the 50 percent level or higher who are considering additional employment outside the university must consult their graduate advisor. A careful evaluation of the impact of the additional commitments on the student's academic progress, and on his or her GA responsibilities should be made. If an appointment other than 50 percent is required or concurrent outside employment is planned, permission must be requested in writing from the Graduate Studies Committee (Graduate School Handbook, IX).

### 9.1 GRADUATE ASSOCIATE NEEDS

Faculty members should make known their needs for Graduate Teaching, Administrative, or Research Associates not later than February 1 preceding the academic year in which the demand will occur. They are also encouraged to assume advocacy positions with the Graduate Studies Committee and the School of Environment and Natural Resources administration in

promoting the appointment of their advisees and other deserving students.

Priority for assignment of Teaching Associates will be:

1. Large classes central to the Environment and Natural Resources core curriculum for which heavy grading/recitation responsibilities exist.
2. Courses with heavy laboratory and/or computer laboratory requirements exist.
3. Courses with particular safety requirements.

## 9.2 PROCEDURES FOR SELECTING GRADUATE ASSOCIATES

Each year, before March 15, the Graduate Studies Committee will review the credentials of all applicants desiring Graduate Associate appointments and provide the administration of the School of Environment and Natural Resources with a recommendation in the form of a ranked list of Graduate Associate candidates. Criteria used in making this recommendation will be grade point average, GRE scores, the student's statement of purpose and letters of recommendation. The ranked list will include each student's GPA, GRE scores, area of specialization, likely advisor, and ranking score. Under normal conditions, the administration will make appointments according to the rank recommendations of the Graduate Studies Committee, selecting the top student from the list who has the knowledge and skills needed in a particular position.

While March 15 is the date by which the ranked list must be delivered to the administration, the Graduate Studies Committee should provide the Associate Director with the names and credentials of outstanding graduate students it wants to recruit at the earliest possible date, so the Associate Director can decide whether to make an early associateship offer.

## 9.3 TERM OF APPOINTMENT

Normally, Graduate Associates are appointed for three quarters (Autumn, Winter, and Spring) with the expectation that this appointment will be renewed for a second year for M.S. students and up to a third year for Regular doctoral students and a fourth year for Direct-Admit doctoral students as long as the student remains in good standing, is making reasonable progress toward his or her degree, and as long as funds are available. Students who have received two years of Graduate

Associate support while in the M.S. program may be eligible for an additional three years of support if admitted to the Ph.D. Program. Master of Science and Regular Ph.D. Graduate Associates are paid on the appropriate stipend level according to their degree program. Continuation as a Graduate Associate when a M.S. student enters the doctoral program is not automatic. Such students must reapply for a Graduate Associateship in writing to the Graduate Studies Committee chair not later than February 15 preceding the September that the appointment would take place. Direct-Admit Ph.D. Graduate Associates are paid at the M.S. stipend level for the first two years and at the Ph.D. stipend level for the final two years.

Summer support may be available, but summer appointments are made on a case-by-case basis. Graduate Administrative and Research Associates may be appointed to four-quarter appointments each year. All Graduate Associates paid from School of Environment and Natural Resources operating or research funds will be treated as receiving a "fee for services."

While appointment as a Graduate Associate by the School is normally limited to six or nine quarters of support, it is recognized that some students who are making reasonable progress may require extra time to complete their degrees. In such cases, the student's advisor must inform the Graduate Studies Committee chair in writing that an extension of the Graduate Associate appointment beyond two or three years will be needed. This must be done not later than February 15 of the last year of the current appointment. If the Graduate Studies Committee concurs that the student is making reasonable progress, the Graduate Studies Committee chair will appeal to the Director of the School of Environment and Natural Resources for an extension. The final decision rests with the Director.

Students may be appointed to additional quarters of support on faculty grants and contracts. Such appointments are at the discretion of the Principal Investigators on those grants and contracts.

## 9.4 DEADLINES

The Director of the School of Environment and Natural Resources will make offers of Graduate Associate positions in writing as early as possible. A student receiving an offer must respond in writing to the Director of the School before April 15 or within two weeks after receiving the offer if that offer is made after April 1, indicating his or her decision to accept or decline the

offer. If no response is received from the student within this period, it will be assumed that the student has declined the offer.

### 9.5 APPOINTMENTS AND REAPPOINTMENTS

Once offers have been made and accepted, a Graduate Associate Appointment Document will be provided each quarter describing the terms of employment in greater detail. Subsequent reappointments will be based on satisfactory performance of assigned duties, good standing and reasonable progress, and availability of funds, and will be in conformity with the rules of the Graduate School.

Students may not be appointed or reappointed to Graduate Associateships if they are on academic probation at the time the appointment becomes effective. A student holding a letter of appointment promising support for more than one quarter may continue to hold the Graduate Associateship during the appointment period even if he or she is on probation after the initial appointment quarter only upon approval by the Graduate Studies Committee and the Graduate School (V.3, XII). Waiver of minimum eligibility requirements may be petitioned in writing and requires the approval of the Graduate Studies Committee and the Graduate School.

The Director of the School of Environment and Natural Resources will notify the graduate student as soon as possible if a reappointment is not to be made and will indicate the reasons for the non-reappointment. In such cases, the student has two weeks to appeal the decision to the Director.

### 9.6 STIPENDS

Stipends offered to Graduate Associates will be consistent with policies adopted by the Graduate School and the School of Environment and Natural Resources. General practice has been to effect any raises on October 1 or when funds are available. An effort will be made to equalize Teaching, Research, and Administrative Associate stipend levels. Graduate faculty who are supporting graduate students on Research Associateships are urged to follow the pay scales used by the School to minimize stipend differentials between School-supported and grant- or contract-supported Graduate Associates.

It is the policy of the School of Environment and Natural Resources that Graduate Associates are evaluated at the end of each quarter of employment and that these

evaluations are used by the administration as a basis for making annual merit raise decisions. Each Graduate Associate is assigned an immediate supervisor who is required to provide a written evaluation at the end of each quarter of service. Changes in stipend level attributable to merit will be made only with reasonable documentation and will ultimately be made by the Director of the School of Environment and Natural Resources.

### 9.7 FEE WAIVERS

Graduate Associates on 50 percent or greater appointments have the option of using a fourth quarter fee waiver after the Graduate Associate completes three consecutive quarters of employment (Graduate School Handbook, IX.5). To receive a fourth quarter fee waiver, the Graduate Associate must inform the School of Environment and Natural Resources Human Resources representative in writing or by email that he or she intends to use the fourth quarter fee waiver and will adhere to the registration requirement associated with receiving that waiver. Students may not hold a Graduate Associate position during the quarter they receive the fourth quarter fee waiver. By using the fourth quarter fee waiver, tuition and general fees will be paid by the last employing unit, e.g. the School of Environment and Natural Resources. The student will be responsible to pay the remaining fees and student health insurance.

### 9.8 ADDITIONAL EMPLOYMENT BENEFITS

Graduate Associates will be provided with a desk and file space when available, are eligible for staff parking privileges, faculty library privileges, and credit in the Public Employees Retirement System (Graduate School Handbook, IX.5).

### 9.9 WORKING DAYS

Graduate Associates appointed for the academic year are expected to be available for duty 20 hours per week beginning one week before classes begin in September and until the end of the day Spring Quarter grades are due. Graduate Associates appointed on a quarterly basis will be available for duty one week before the beginning of the quarter of appointment and until the end of the day grades are due that quarter.

Graduate Associates will receive all legal holidays as identified in the university calendar. Other arrangements can be made for special religious days not recognized by the calendar by consulting with the immediate supervisor and the Director of the School of Environment and

Natural Resources. Additional rescheduling of work load may be accomplished by consulting in a timely manner with the immediate supervisor and the Director of the School.

### 9.10 TERMINATION OF APPOINTMENT

The appointment of a Graduate Associate may be terminated if:

- a. he or she is no longer enrolled as a graduate student or is carrying fewer than the required minimum number of credits,
- b. he or she completes the graduate program before his or her appointment expires,
- c. his or her performance is determined to be unsatisfactory, or
- d. there are insufficient funds to fund the position (Graduate School Handbook, IX.2).

### 9.11 RIGHTS AND PRIVILEGES

The constitutional rights of each graduate student, including Graduate Associates, are protected by due process. The Grievance Process has been established to protect those rights. Students should consult IX.4 and Appendix C of the Graduate School Handbook for a description of the Grievance Process. Grievances should be resolved at the lowest administrative level. The Graduate Studies Committee chair is the initial point of contact for academic grievances and should be consulted for assistance with such problems. Each student also has the right to consult with the Director or Associate Director of the School of Environment and Natural Resources and the Graduate School.

### 9.12 FINANCIAL ASSISTANCE

Financial aid to graduate students are of three general types:

- a. Fellowships and traineeships, national and local, administered through the Graduate School;
- b. Endowed fellowships assigned to the School of Environment and Natural Resources or to an individual faculty member; and
- c. Graduate Administrative, Research and Teaching Associateships administered by the School of Environment and Natural Resources or other departments or units on campus.

Each student who applies for admission to the Graduate School may simultaneously apply for a Graduate Associateship and a Fellowship by checking the appropriate box on the application to indicate that financial assistance is requested. Students are also encouraged to write directly to faculty members for advice and information on the availability of research funds and other assistance.

#### 9.12.1 Fellowships

Fellowships are mostly reserved for entering graduate students and the selection process is highly competitive. Successful candidates usually have overall grade point averages above 3.5 on a 4.0 scale and high scores on the Graduate Record Examination. Fellows pursue a full-time schedule of courses or research (15 graduate credits per quarter) and are not required to teach or provide other services. Further, they must maintain scholastic standards required to be in "good standing" and may not work on or off campus during the period of the fellowship. More than one fellowship may not be held simultaneously. Students on University Fellowships may not hold any other appointment, such as a GA, or outside employment during the term of appointment as a Graduate School fellow unless specifically petitioned and approved by the Graduate School (Graduate School Handbook, X.1).

#### 9.12.2 International Student Finances

The U.S. Immigration and Naturalization Service (INS) requires the Graduate Admissions Office to certify the following for every international student:

- a. student costs for educational expenses and year-round maintenance; and
- b. funds available to the student through bank accounts (statements are required), affidavits of support or financial awards made by the university.

When financial awards are to be made to international students, either as fellowships, traineeships, or associateships, such information is to be communicated to the SEVIS Liason and Financial Review, International Graduate Admissions, 1320 Lincoln Tower, 1800 Cannon Drive, Columbus, OH 43210; phone 614.292.9444; fax 614.688.3593.

The letter of award should clearly state the terms and duration of the award and whether or not it is renewable. Until the international student applicant can



provide documentation of sufficient funds either from personal resources or from the university, the Graduate Admissions Office cannot send the official letter of admission. The Graduate Studies Committee may send the applicant a letter of offer for admission and/or funding awards, but the official letter of admission will not be sent until the financial review is approved.

### 9.12.3 Other Financial Assistance

The Student Financial Aid Office administers student employment, the work–study program, and loans. The Student Financial Aid Office serves only registered students. Students in need of financial assistance should contact a counselor at the Office of Student Financial Aid, 340 Lincoln Tower, 1800 Cannon Drive, Columbus, OH 43210; email [sfa-finaid@osu.edu](mailto:sfa-finaid@osu.edu); phone 614.292.0300; fax 614.292.9264. Specific programs include:

- a. The College Work–Study Program under the Economic Opportunity Act of 1964 provides financial aid through employment to college students who, without such assistance, would not be able to attain a higher education. Detailed information and applications are available in 340 Lincoln Tower, 1800 Cannon Drive, Columbus, OH 43210 and online at <http://sfa.osu.edu/jobs>.
- b. Veteran’s Administration Educational Benefits are available to veterans. Interested students should write to the regional office of the Veterans Administration, A.J. Celebrezze Federal Building, 1240 East 9th St., Cleveland, OH 44199 or online at <http://www.gibill.va.gov/>. Veterans should proceed with registration in the university in the same manner as prescribed for all students. Further information may be obtained from the Office of Veterans Affairs, Ohio State University, 1590 N. High St., Suite 300, Columbus, OH 43201-2190 or online at <http://hr.osu.edu/vet>. Veterans who desire assistance with other programs or who need further information are encouraged to contact the Office of Veterans Affairs.

## 10. POLICY AND ADMINISTRATION

### 10.1. RELATIONSHIP BETWEEN THE GRADUATE COUNCIL AND THE ENVIRONMENT AND NATURAL RESOURCES GRADUATE PROGRAM

The Graduate Council is the legislative body of the Graduate School of The Ohio State University. Among

its functions, the Graduate Council establishes rules governing all graduate programs and may revise such rules from time to time. These rules are published in The Ohio State University Graduate School Handbook. The Environment and Natural Resources Graduate Studies Committee administers the Environment and Natural Resources Graduate Program according to these rules.

### 10.2 STRUCTURE OF THE GRADUATE PROGRAM

The Environment and Natural Resources Graduate Program comprises six faculty tracks: Ecological Restoration, Ecosystem Science, Environmental Social Sciences, Fisheries and Wildlife Science, Forest Science, and Soil Science. All faculty members in the program belong to one or more tracks. Admission of new faculty to the SENR graduate faculty is contingent upon acceptance of the new member into at least one of the tracks. Faculty members in each track must approve, by majority vote, new members wishing to join the track.

Each track offers an Area of Specialization for training M.S. and Ph.D. students. Areas of Specialization and associated graduate faculty are provided in Appendix A of this Handbook.

### 10.3 THE GRADUATE STUDIES COMMITTEE AND THE GRADUATE FACULTY

The conduct and administration of the Environment and Natural Resources Graduate Program is the responsibility of the Graduate Studies Committee. Actions taken by the Graduate Studies Committee are subject to approval, modification, or reversal by the graduate faculty of the Environment and Natural Resources Graduate Program. The graduate faculty in Environment and Natural Resources is an interdisciplinary body of research scientists and scholars in the School of Environment and Natural Resources and other academic units throughout the university.

The Graduate Studies Committee comprises six faculty members who serve staggered, three-year terms and two graduate students who serve one-year terms. The Committee members represent and are elected by the faculty in the specialization tracks of the Environment and Natural Resources Graduate Program; Ecological Restoration and Ecosystem Science are represented by a single faculty member; Environmental Social Sciences, “Rural Sociology” (“Rural Sociology” will serve as a place-holder until the Rural Sociology faculty determine the name of the ENRGP “sociology” specialization),

Fisheries and Wildlife Science, Forest Science, and Soil Science are each represented by a single faculty member. The sixth faculty position is an at-large member elected by the full graduate faculty. Student members include one master's and one doctoral student elected by the Environment and Natural Resources Graduate Program graduate students. Both serve as voting members of the Graduate Studies Committee. Graduate students will also elect one master's and one doctoral student who are non-voting alternates. Alternates are eligible to vote when replacing voting members who are absent. Both voting and alternate members are urged to attend all meetings to ensure continuity in the deliberations of the Graduate Studies Committee.

Faculty members are elected for three-year terms with two new members elected each year. Terms begin on July 1. The chair is elected by the Graduate Studies Committee from among its faculty members, serves for one year and may be re-elected.

Elections to replace faculty members whose terms have expired are to be held during the Spring Quarter of each year. Early in the quarter the Graduate Studies Committee chair will inform the appropriate track faculties that their representatives' terms are ending and they must elect a member by the end of the Spring quarter to serve on the Graduate Studies Committee. When the at-large position opens, the Graduate Studies Committee chair will seek nominations from the graduate faculty starting early in the Spring Quarter. A nomination must be accompanied by a statement from the nominee that he or she is willing to serve. Voting will be by email ballot sent to all members of the graduate faculty who will have a minimum of one week to return their ballots by replying to email ballot. The nominee receiving the largest number of votes will be elected. In the case of a tie, a runoff will be conducted.

Openings on the Graduate Studies Committee at other times for track faculties are to be filled by an election by the appropriate track faculty. The new track faculty representative will complete the term of the vacated position. Openings at other times for the at-large member are to be filled by appointment by the Graduate Studies Committee chair. The appointee will complete the term of the vacated position, which will then be filled by the regular election.

Student members and alternates are elected each June by the graduate students. The nomination process may be by direct vote of the graduate student body or by election carried out by a graduate student organization

recognized by the Graduate Studies Committee to be the representative body for the graduate students. Graduate student members serve one year terms beginning July 1 and may not be re-elected. Alternates, however, may be elected to be voting members.

To be eligible for election to the Graduate Studies Committee, graduate students must be seeking either the master's or doctoral degree in the Environment and Natural Resources Graduate Program. Elected students must be able to complete their terms before they graduate.

A quorum exists when at least four voting members of the Graduate Studies Committee are present, at least three of whom must be faculty members. The Graduate Studies Committee chair is a voting member but votes only to break ties.

The Graduate Studies Committee Chair and faculty members reserve the right to meet in executive session for the purpose of addressing issues deemed to be worthy of such a session, e.g., cases of personal, professional, or academic misconduct; and other cases where sensitive information may need to be kept within the "family of the ENRGP graduate faculty." Such executive sessions are presumed to be rarely convened and shall not be substituted for regular meetings of the Graduate Studies Committee nor will votes for action be taken.

#### **10.4 DUTIES OF THE GRADUATE STUDIES COMMITTEE**

The Graduate Studies Committee will carry out all duties and responsibilities designated in the Graduate School Handbook, XIV, including:

- a.** establishing admission and program policy, standards, and procedures;
- b.** screening applications for admission to the master's and doctoral programs, and make final determinations on admission;
- c.** nominating candidates for fellowships, and rank students for appointment to graduate teaching, research, and administrative associateships (GTA, GRA, and GAA) in the School of Environment and Natural Resources;
- d.** overseeing the maintenance of all graduate files and records;

- e. establishing rules and guidelines for master's and doctoral students' Advisory/Examination Committees, Programs of Study, and theses and dissertation proposals;
- f. reviewing and approving master's and doctoral students' Advisory/Examination Committee members and theses and dissertation proposals;
- g. monitoring student progress toward their degrees, consulting with students and advisors where problems are identified, and making recommendations to the Graduate School for dismissal for failure to meet conditions or when "reasonable progress" is not being made;
- h. receiving and acting on petitions from graduate students for changes in their Program of Study, Advisory/Examining Committee members, and theses or dissertation topics;
- i. hearing and responding to graduate student grievances;
- j. developing standards for graduate faculty membership categories and nominating qualified faculty members to the Graduate School; and
- k. reviewing, commenting on, approving, or disapproving all School of Environment and Natural Resources courses that would carry graduate (G) credit, including the times ENR graduate courses are offered so as not to conflict with the ENR 880 Seminar requirement (see 2.6.1 and 3.8.2). No proposal for a course that would carry graduate credit will be forwarded to the Graduate Council without prior approval of both the Graduate Studies Committee and the School's Academic Affairs Committee.

### 10.5 COUNCIL OF GRADUATE STUDENTS REPRESENTATIVES

Representatives from the Environment and Natural Resources Graduate Program to the Council of Graduate Students (CGS) are nominated each September by the student organization, Grad Roots, and appointed by the Graduate Studies Committee. To be eligible for appointment, graduate students must be seeking either the master's or doctoral degree in Environment and Natural Resources Graduate Program. CGS representatives are encouraged to attend Graduate

Studies Committee meetings and to report on CGS activities.

### 10.6 ENVIRONMENT AND NATURAL RESOURCES GRADUATE PROGRAM HANDBOOK

It is the responsibility of the Graduate Studies Committee to compile and maintain an Environment and Natural Resources Graduate Program Handbook. This Handbook lists rules and procedures by which the Environment and Natural Resources Graduate Program is to be managed.

The Graduate Studies Committee will update the Environment and Natural Resources Graduate Program Handbook to incorporate changes in the rules and procedures of the Environment and Natural Resources Graduate Program, the Graduate School Handbook, or other university policies, and can make additions and emendations for the purpose of clarification at any time. A current copy will be kept on file in the graduate program office in the School of Environment and Natural Resources and on the [School website](#).

### 10.7 APPEALS FOR RECONSIDERATION OF GRADUATE STUDIES COMMITTEE DECISIONS

Any member of the graduate faculty in the Environment and Natural Resources Graduate Program may request a reconsideration of any decision made by the Graduate Studies Committee.

### 10.8 PETITIONS AND GRIEVANCE PROCEDURES AND GUIDELINES

#### 10.8.1 Petitions

A student may petition for modification to any rules by submitting a written petition to the Graduate Studies Committee. Such a petition should contain the signature of the advisor; a letter of support from the advisor would strengthen the petition. If the Graduate Studies Committee does not approve the petition, the student may make use of the petition procedures of the Graduate School (Graduate School Handbook, XII).

#### 10.8.2 Grievance Procedures

Should any graduate student, advisor or supervisor of a Graduate Associate have a complaint, a thorough attempt should be made to resolve the problem through informal discussions. Thereafter, the following grievance procedure should be implemented (see also Graduate School Handbook, Appendix C):

- a. If a problem remains after exhausting the informal process between the parties involved, the person having the unresolved complaint may file a grievance with the Graduate Studies Committee by submitting a statement to the Graduate Studies Committee chair describing the grievance. The Graduate Studies Committee will then serve as the Graduate Studies Grievance Committee. The Graduate Studies Committee chair will be the Graduate Studies Grievance Committee chair unless personally involved, in which case the chair will be excluded from all deliberations on the matter and the Graduate Studies Grievance Committee will select a chair from among its remaining faculty members. Similarly, members of the Graduate Studies Committee directly involved in the case will be disqualified from sitting on the panel for that specific case. In such circumstances, the Director of the School of Environment and Natural Resources will designate an alternate, when possible from the same area of expertise as the disqualified member. Student members will continue to serve as voting members of any grievance hearing and vote as prescribed for members of the Graduate Studies Committee.

The Graduate Studies Grievance Committee chair will set a hearing date not later than two weeks after the grievance statement is received. All parties involved will be notified in writing of both the nature of the grievance and the date of the hearing.

- b. At least 72 hours prior to a hearing, the Graduate Studies Grievance Committee chair will provide the following to all parties involved:
- i. a written statement of the particular grievance,
  - ii. a written notification of the time and place of the hearing, and
  - iii. a copy of documents relevant to the grievance hearing.
- c. Each party will appear in person to present his or her case. Each party is entitled to active representation by counsel and may call witnesses in his or her behalf.
- d. All parties will be entitled to an expeditious hearing. In emergency situations, as agreed upon after case review by the Graduate Studies Committee, hearings will be as immediate as possible.

### 10.8.3 Graduate Studies Grievance Committee Decisions and Actions

The final decision of the Grievance Committee will be reported in writing to the parties involved and the Director of the School of Environment and Natural Resources not later than two weeks after the hearing. This report will detail the grievance and the subsequent findings, including a finding of either:

- a. **No Probable Cause:** There having been established no probable cause to credit the grievance, or
- b. **Probable Cause:** There having been established probable cause to credit the grievance.

The Director of the School of Environment and Natural Resources will direct the implementation of the resolution stipulated by the Graduate Studies Grievance Committee.

### 10.8.4 Appeals of Decisions

Any appeal statement should be filed with the Director of the School of Environment and Natural Resources, the Graduate Studies Grievance Committee chair and the Graduate School not later than two weeks following the issuance of the decision of the Graduate Studies Grievance Committee. The appeal hearing will then be conducted in accordance with the rules and procedures of the Graduate School.

### 10.8.5 Scholarly and Academic Misconduct

a. **Scholarly Misconduct:** Falsification of research, deliberate misuse of facilities and data, plagiarism, and abuse of confidentiality within the context of research are examples of scholarly misconduct. The context is understood to include but not be limited to: dissertation research, thesis research, and research pursued as part of a fellowship while employed as a Graduate Associate or while funded on any grant or contract.

Rules covering scholarly misconduct by graduate students have been developed by the University Research Committee ([www.senate.osu.edu](http://www.senate.osu.edu), Senate Committees) in coordination with the Graduate Council and Graduate Studies. Students working as Graduate Research Associates on projects using state or federal resources should be extremely attentive to the ideals and ethical principles of their disciplines and never put themselves into compromising positions which later might call into question their ethics and potentially result in the ruination of their careers.

Accusations of “scholarly misconduct” by graduate students will be resolved according to the Guidelines for Review of Scholarly Misconduct by Graduate Students.

**b. Academic Misconduct:** Includes but is not limited to cheating in a course(s) and on examinations, plagiarism in course work, violation of course rules, and the altering of course grades within the context of classroom and course work activities. Academic misconduct may occur in the following contexts: taking classes as a student, employment as a Graduate Teaching Associate (including teaching classes and grading tests/papers, etc.), and while completing the written section of Final Master’s and Candidacy Examinations.

Graduate Associates are obliged to report formally all incidents of academic misconduct in accordance with established university procedures. It is against the Rules of the University Faculty for anyone to issue failing grades for academic misconduct or to impose any other sanction before the full review process as required by Faculty Rules has been followed to completion. Accusations of academic misconduct by graduate students will be resolved according to the rules of the Committee on Academic Misconduct (University Faculty Rules 3335-5-48.7).

There is some overlap between these two areas of misconduct. The student is advised to consult the Guidelines for Review of Scholarly Misconduct by Graduate Students and/or the Rules of the University Faculty (Graduate School Handbook, Appendix B; and Resources & Policies, Code of Student Conduct, <http://www.studentaffairs.osu.edu/resources/>). In cases not fitting the definitions of the two areas and their contexts or where there is a question of jurisdiction, the Graduate School and the chair of the Committee on Academic Misconduct will consult to determine the appropriate body to hear the case.

### 10.9 STUDENT RECORDS

The School of Environment and Natural Resources, acting on behalf of the Graduate Studies Committee, will maintain application files for all applicants to the Environment and Natural Resources Graduate Program and the official academic files of all students in the program. Student files may not be removed from the program office, but materials from application files may be scanned and emailed as a pdf document to assist in the review process. While measures are taken to keep applicant information secure, faculty and Graduate

Studies Committee members are reminded to treat all applicant materials as confidential.

Access to application files is open to all members of the graduate faculty. Academic files for admitted students, however, are closed and access is restricted to members of the Graduate Studies Committee, the student’s advisor, and others with permission of the Graduate Studies Committee chair. Students may examine any item in their files except letters of recommendation for which they have signed waivers of access.

The School will maintain the academic files of students admitted to the program and who officially register for six years. However, the file of any admitted student who does not begin attending classes in the designated quarter of acceptance may be destroyed one year after the beginning of that quarter. The Graduate Studies Committee chair is responsible for all aspects of student file maintenance.

### 10.10 OFFICE FOR DISABILITY SERVICES

Students with any disabilities who may require special assistance are encouraged to contact the Office for Disability Services, 150 Pomerene Hall, 1760 Neil Avenue, Columbus, OH 43210; phone 614.292.3307, or online at <http://www.ods.osu.edu>. This office coordinates physical and academic support services and accommodations for individuals who have special needs as a result of a permanent or temporary disability. Individuals eligible for this service include but are not limited to those with mobility, hearing, visual, speech, or learning disabilities.

### 10.11 NONDISCRIMINATION POLICY

The policy of The Ohio State University, both traditionally and currently, is that discrimination against any individual for reasons of race, color, creed, religion, sex, sexual orientation, national origin, age, handicap, or Vietnam-era veteran status is specifically prohibited.

This Handbook is a compilation of the policies, procedures, and requirements of the Environment and Natural Resources Graduate Program as determined by the graduate faculty through its Graduate Studies Committee. Nothing in this Handbook will be interpreted as replacing or superseding regulations set forth by the Graduate Council and Graduate Studies as published in the Graduate School Handbook.

## 11. GRADUATE FACULTY

A list of current graduate faculty members is maintained in the graduate program office in the School of Environment and Natural Resources and in the Graduate School.

### 11.1 FUNCTIONS

The graduate faculty in environment and natural resources are appointed and serve according to the rules stipulated in the Graduate School Handbook, XV, and are responsible for educating graduate students according to the rules and procedures set forth in this Handbook of the Environment and Natural Resources Graduate Program.

### 11.2 ELIGIBILITY FOR MEMBERSHIP

Only Regular members of The Ohio State University faculty are eligible to be members of the graduate faculty in any of the University's graduate programs. Current graduate faculty members who are not Regular Faculty may have been grandfathered in and may continue to serve, but no new appointments of individuals who are not Regular Faculty may be made.

To be appointed to the Environment and Natural Resources graduate faculty, Regular Faculty members in the School of Environment and Natural Resources or in other units at The Ohio State University must qualify for Category P status according to the rules published in the Graduate School Handbook, XV. All new appointments to the Environment and Natural Resources graduate program shall be at the Category P level. Graduate faculty members are reviewed every five years for continuation according to criteria and procedures in Section 11.4 below.

### 11.3 NOMINATION TO GRADUATE FACULTY

Regular faculty members in the School of Environment and Natural Resources or Regular faculty members in other academic units wishing to be appointed to the Environment and Natural Resources graduate faculty must submit a letter and a current curriculum vitae to the Graduate Studies Committee chair indicating the Area(s) of Specialization in which they desire to become a member. Once these materials are received, the Graduate Studies Committee track representative will email the request to the appropriate track(s) for faculty review, acceptance or rejection. If the track faculty deem the candidate acceptable, his or her credentials are forwarded to the Graduate Studies Committee for a final decision. If the Graduate Studies Committee approves the appointment, the graduate program office

will prepare the Nomination to a Graduate Faculty Appointment form for the chair's signature and submit all materials to the Graduate School for final approval. The Graduate Studies Committee will act on all membership applications within two months of receipt. All new faculty members will be awarded Category P membership and will be expected to train doctoral students.

### 11.4 QUALIFICATIONS AND EXPECTATIONS FOR CATEGORY P AND M FACULTY

Category P: The training of doctoral students is a critical objective of the Environment and Natural Resources Graduate Program. All regular faculty admitted to membership in the graduate faculty in Environment and Natural Resources should be qualified to hold Category P appointments. The minimum Category P qualifications are that the faculty member:

1. holds appointment as a regular, tenure-track faculty member,
2. holds an earned Ph.D. or equivalent,
3. is engaged in an active program of research or scholarship or demonstrates significant promise of establishing such a program.

Faculty holding Category P appointments are expected to:

1. maintain an active research program leading to regular publication in refereed journals,
2. act as the advisor for master's and doctoral students,
3. co-author research papers and studies with their students,
4. participate in the governance of graduate education at all levels within the University,
5. serve on doctoral advisory and examining committees including serving as the Program Representative on doctoral committees within the Environment and Natural Resources Graduate Program.
6. serve as Graduate Faculty Representative on Final Oral Examinations.
7. contribute to the graduate program by teaching courses at the 700, 800, and 900 levels.

Category M: This category is reserved for members of the Environment and Natural Resources graduate faculty who, for any reason, do not qualify for Category P membership. The minimum qualifications for Category M status are that the faculty member:

1. holds a regular, tenure-track appointment,
2. holds an earned Ph.D. or equivalent degree

Faculty holding Category M appointments are expected to:

1. maintain an active research program leading to regular publication in refereed journals,
2. act as the advisor for master's students,
3. serve on master's advisory and examining committees and on doctoral advisory and examining committees at the discretion of the Graduate Studies Committee,
4. co-author research papers and studies with their students,
5. participate in the governance of graduate education at all levels within the University,
6. contribute to the graduate program by teaching courses at the 700 level.

Category M faculty are encouraged to work toward attaining Category P status by building an active master's education program, serving on doctoral committees throughout the university, and coauthoring research papers and studies with their students.

#### **11.5 EMERITUS AND ADJUNCT FACULTY**

Emeritus faculty who held Category M or P appointments at the time of their retirement may continue to advise their students in progress and serve on the Advisory/ Examination Committees of graduate students in progress at the time of retirement. All such cases must be approved by the Graduate Studies Committee and the Graduate School. Emeriti faculty may not engage in teaching or advising activities for students not in progress at the time of retirement without the approval of the Graduate Studies Committee and the Graduate School.

Adjunct faculty may not be appointed to the graduate faculty but may serve on master's and doctoral Advisory/ Examination Committees with the approval of the Graduate Studies Committee and the Graduate School (see 2.5 and 3.7, Graduate School Handbook, XV.1).

#### **11.6 REVIEW OF FACULTY MEMBERS**

The Graduate Studies Committee will review faculty members holding Category M or P status every five years to determine their qualification for continuation in their current status. Such review will be initiated by the Graduate Studies Committee chair during Winter Quarter of the fifth year of appointment and will be completed before the end of Spring Quarter. The faculty member is responsible for providing the Graduate Studies Committee with appropriate documentation of performance. As a result of the review, faculty members may be

continued in a Category for an additional five years. If, however, the Graduate Studies Committee determines that performance does not meet the standards for continuation in a Category, appropriate steps will be taken to reassign the faculty member to an appropriate Category. Reassignment from Category P to M requires the approval of the Graduate School.

Special reviews to address grievances or other matters may be initiated by a majority vote of the Graduate Studies Committee, by a request from five members of the graduate faculty or by the Graduate Studies Committee upon request from the Director of the School of Environment and Natural Resources or the Graduate School.

Faculty members may request a review of an adverse decision by the Graduate Studies Committee and may subsequently appeal to the graduate faculty and the Graduate School.

#### **11.7 GRADUATE FACULTY MEETINGS**

Meetings of the graduate faculty will be called from time to time to amend this document and to carry out such business as may need the faculty's attention. The Graduate Studies Committee chair will also chair meetings of the graduate faculty. Robert's Rules of Order will prevail. A quorum will be deemed present when at least twenty percent of the graduate faculty are present and voting. The graduate faculty may also conduct its business by email ballot.

September 2010

**APPENDIX A**  
**AREAS OF SPECIALIZATION**





## AREAS OF SPECIALIZATION

### ECOLOGICAL RESTORATION

Human domination of ecosystems worldwide has rendered vast areas of land and many water bodies degraded to the point that they cannot support any plant and animal growth. The new field of ecological restoration has as its goal the restoration, revitalization, and reuse of disturbed, disrupted and contaminated sites, based on ecological principles. The goal is not to duplicate exactly what was there before disturbance, but to restore the ecological processes that will enable the ecosystem to change and adapt as environmental conditions change. The focus is on function more than form.

#### Faculty

|                  |                     |   |
|------------------|---------------------|---|
| Nicholas Basta   | Professor           | P |
| Jerry Bigham*    | Professor           | P |
| Peter Curtis     | Professor           | P |
| Konrad Dabrowski | Professor           | P |
| Craig Davis      | Professor           | P |
| Charles Goebel   | Associate Professor | P |
| David Hix        | Professor           | P |
| Brian Lower      | Assistant Professor | P |
| William Mitsch   | Professor           | P |
| Richard Moore    | Professor           | P |
| Brian Slater     | Associate Professor | P |
| Mazeika Sullivan | Assistant Professor | P |
| Mohan Wali*      | Professor           | P |

\*Emeriti faculty members may serve on Advisory/Examination Committees but may not serve as advisors (Sections 2.3, 2.5, 3.5 and 3.7).

#### Courses

|          |   |
|----------|---|
| EEOB 671 | Plant Population Ecology, 5 credits   |
| EEOB 720 | Community Ecology and Ecosystems, 5 credits                                 |
| ENR 618  | Ecological Engineering and Science, 4 credits                               |
| ENR 631  | Arboriculture, 5 credits  |
| ENR 660  | Soil Chemical Processes and Environmental Quality, 5 credits                |
| ENR 675  | Environmental Fate and Impact of Contaminants in Soils and Water, 4 credits |
| ENR 710  | Methods in Ecosystem Science, 5 credits                                     |
| ENR 725  | Wetland Ecology and Management, 5 credits                                   |
| ENR 726  | Wetland and River Restoration, 3 credits                                    |
| ENR 731  | Principles and Applications of Forest Ecosystem Restoration, 3 credits      |
| ENR 756  | Rehabilitation/Restoration of Ecosystems, 3 credits                         |
| ENR 770  | Watershed Ecology and Restoration, 4 credits                                |
| ENR 760  | Ecosystem Modelling, 5 credits  |
| ENR 812  | Spatial Modelling in Natural Resources, 3 credits                           |
| ENR 822  | Quantitative Methods for Natural Resources, 4 credits                       |
| ENR 835  | Ecosystem Management Policy, 5 credits                                      |

**ECOSYSTEM SCIENCE**

Ecosystem science is the study of biotic and abiotic components and their interaction within an ecosystem. Ecosystem science is firmly grounded in ecological theory, and theory is a significant component of our research efforts. But, this program also has an applied focus that examines how ecosystem functions produce and maintain products and services of importance to human societies, e.g. water purification in wetlands. In this context, ecosystem science provides a powerful framework for identifying ecological mechanisms underlying environmental problems such as: problems of land degradation, water pollution, and loss of species and habitat.

**Faculty**

|                  |                     |   |
|------------------|---------------------|---|
| Peter Curtis     | Professor           | P |
| Konrad Dabrowski | Professor           | P |
| Craig Davis      | Professor           | P |
| Ronald Hendrick  | Professor           | P |
| Brian Lower      | Assistant Professor | P |
| William Mitsch   | Professor           | P |
| Richard Moore    | Professor           | P |
| Mazeika Sullivan | Assistant Professor | P |
| Mohan Wali*      | Professor           | P |

\*Emeriti faculty members may serve on Advisory/Examination Committees but may not serve as advisors (Sections 2.3, 2.5, 3.5 and 3.7).

**Courses**

|          |   |
|----------|---|
| EEOB 655 | Limnology, 5 credits                                |
| EEOB 671 | Physiological Ecology of Plants, 5 credits          |
| EEOB 674 | Plant physiological ecology, 5 credits              |
| EEOB 720 | Community Ecology and Ecosystems, 5 credits         |
| ENR 626  | Methods in Aquatic Ecology, 5 credits               |
| ENR 630  | Soils of Forest Ecosystems, 3 credits               |
| ENR 645  | Soils of the Tropics, 3 credits                     |
| ENR 656  | Ecosystems of the World, 3 credits                  |
| ENR 665  | Biology of Soil Ecosystems, 4 credits               |
| ENR 710  | Methods in Ecosystem Science, 5 credits             |
| ENR 725  | Wetland Ecology and Management, 5 credits           |
| ENR 733  | Successional Dynamics of Forests, 5 credits         |
| ENR 734  | Forest Ecosystem Management, 4 credits              |
| ENR 756  | Rehabilitation/Restoration of Ecosystems, 3 credits |
| ENR 770  | Watershed Ecology and Restoration, 4 credits        |
| ENR 812  | Spatial Methods in Natural Resources, 3 credits     |

## ENVIRONMENTAL SOCIAL SCIENCES

A productive society is marked by its harmony with a sustainable and healthy environment: changing climate, energy policies, global food and water distribution, economic and social development to conserve habitat and biodiversity. In this world of unprecedented environmental challenges the common core is inextricably linked to human values.

Within the Environmental Social Sciences (ESS) Graduate Specialization, students learn how to build scientific understanding of these issues, identify potential responses and evaluate their consequences, and, ultimately, decide how and when to take action. Students work with faculty who study how people value and use the environment and natural resources, make decisions about, and design policies to address environmental and natural resources issues.

### Faculty

|                    |                     |   |
|--------------------|---------------------|---|
| Jeremy Bruskotter  | Assistant Professor | P |
| Joseph Donnermeyer | Professor           | P |
| Earl Epstein       | Professor           | P |
| John Heywood       | Associate Professor | P |
| Joseph Heimlich    | Associate Professor | P |
| Tomas Koontz       | Associate Professor | P |
| Linda Lobao        | Professor           | P |
| Richard Moore      | Professor           | P |
| Catherine Rakowski | Associate Professor | P |
| Jeffrey Sharp      | Associate Professor | P |
| Eric Toman         | Assistant Professor | P |
| Robyn Wilson       | Assistant Professor | P |

### Courses

|          |  |
|----------|--|
| ENR 640  | Natural Resources Program Planning I, 5 credits                                    |
| ENR 649  | Wildlife Conservation and Policy, 4 credits  |
| ENR 651  | Water Resources Institutions and Policies, 4 credits                               |
| ENR 736  | Public Forest and Lands Policy, 4 credits  |
| ENR 738  | Climate and Society, 4 credits   |
| ENR 750  | Resolving Social Conflict, 4 credits   |
| ENR 752  | Environmental Science and Law, 4 credits   |
| ENR 815  | Advanced Environment, Risk and Decision Making, 4 credits                          |
| ENR 835  | Ecosystem Management Policy, 5 credits   |
| ENR 840* | Theoretical Foundations in the Human Dimensions of Ecosystem Management, 4 credits |
| ENR 851* | Human Dimensions Theory Building in Natural Resources, 4 credits                   |

\*Required core courses for MS and PhD programs of study

**FISHERIES AND WILDLIFE SCIENCE**

Fish and wildlife biology is a long-standing and well-recognized sub-discipline within the broader field of natural resources. Students specializing in Fisheries and Wildlife Science have opportunities to build expertise in such diverse fields as wildlife ecology, wildlife management, fisheries management, fisheries ecology, terrestrial wildlife management, ecology of neo-tropical birds, urban wildlife science and management, and aquaculture.

**Faculty**

|                   |                     |   |
|-------------------|---------------------|---|
| Jeremy Bruskotter | Assistant Professor | P |
| Konrad Dabrowski  | Professor           | P |
| Robert Gates      | Associate Professor | P |
| Stanley Gehrt     | Assistant Professor | P |
| David Johnson     | Professor           | P |
| Amanda Rodewald   | Associate Professor | P |
| Paul Rodewald     | Assistant Professor | P |
| Mazeika Sullivan  | Assistant Professor | P |

**Courses**

|             |   |
|-------------|---|
| EEOB 617    | Theoretical Ecology I, 5 credits                                      |
| EEOB 694    | Demographic Methods for Plant and Animal Populations, 2-5 credits     |
| EEOB 714.01 | Theoretical Ecology II Lecture, 4 credits                             |
| EEOB 714.02 | Theoretical Ecology II Laboratory, 2 credits                          |
| EEOB 720    | Community Ecology and Ecosystems, 5 credits                           |
| ENR 620     | Principles of Fisheries Ecology and Management, 5 credits             |
| ENR 622     | Stream Ecology, 5 credits   |
| ENR 623     | Principles of Wildlife Ecology and Management, 5 credits              |
| ENR 624     | Wildlife Identification and Management, 5 credits                     |
| ENR 625     | Management of Wildlife Habitat, 3 credits                             |
| ENR 626     | Methods in Aquatic Ecology, 5 credits                                 |
| ENR 627     | Ecology and Management of Aquatic Invertebrates, 5 credits            |
| ENR 628     | Aquaculture, 5 credits  |
| ENR 629     | Ecology and Management of Wetland Birds, 3 credits                    |
| ENR 662     | Wildlife Ecology Methods, 5 credits                                   |
| ENR 812     | Spatial Methods in Natural Resources, 3 credits                       |
| ENR 822     | Quantitative Methods in Natural Resources, 5 credits                  |
| ENR 899.01  | Special Topics in Fish & Wildlife Ecology and Management, 2-5 credits |
| STAT 528    | Data Analysis I, 3 credits  |
| STAT 529    | Data Analysis II, 3 credits   |
| STAT 530    | Data Analysis III, 4 credits  |

## FOREST SCIENCE

Forest science is a well-recognized and long-standing academic discipline dating to the first forestry schools that were established in the U.S. over a century ago. The forest science graduate area of specialization in the School of Environment and Natural Resources at The Ohio State University is the only graduate program in forest science in the state of Ohio. Our program brings together foresters, ecologists, hydrologists, and social scientists to conduct fundamental research on forest ecosystems, social systems, and their interactions. We endeavor to educate the next generation of scientists, managers, and users of forest resources who seek to develop innovative and integrative approaches to sustainably manage and protect forest ecosystems and the important ecosystem services they provide.

### Faculty

|                 |                     |   |
|-----------------|---------------------|---|
| Peter Curtis    | Professor           | P |
| Charles Goebel  | Associate Professor | P |
| Ronald Hendrick | Professor           | P |
| David Hix       | Associate Professor | P |
| Davis Sydnor    | Professor           | P |
| Eric Toman      | Assistant Professor | P |
| Roger Williams  | Associate Professor | P |
| Mohan Wali*     | Professor           | P |

\*Emeriti faculty members may serve on Advisory/Examination Committees but may not serve as advisors (Sections 2.3, 2.5, 3.5 and 3.7).

### Courses

|              |   |
|--------------|---|
| EEOB 661     | Conservation Biology, 5 credits   |
| EEOB 671     | Plant Population Ecology, 5 credits   |
| EEOB 672     | Taxonomy of Vascular Plants, 5 credits  |
| EEOB 674     | Physiological Ecology of Plants, 5 credits  |
| EEOB 720     | Community and Ecosystem Ecology, 5 credits  |
| ENR 630      | Soils in Forest Ecosystems, 3 credits   |
| ENR 631      | Arboriculture, 5 credits  |
| ENR 635      | Forest Management, 4 credits  |
| ENR 656      | Ecosystems of the World, 3 credits  |
| ENR 710      | Methods in Ecosystem Science, 5 credits   |
| ENR 725      | Wetland Ecology and Management, 5 credits   |
| ENR 726      | Wetland and River Restoration, 3 credits  |
| ENR 731      | Principles and Applications of Forest Ecosystem Restoration, 3 credits                    |
| ENR 733      | Successional Dynamics of Forests, 5 credits   |
| ENR 734      | Forest Ecosystem Management, 4 credits  |
| ENR 736      | Public Forest and Lands Policy, 4 credits   |
| ENR 756      | Rehabilitation/Restoration of Ecosystems, 3 credits                                       |
| ENR 770      | Watershed Ecology and Restoration, 4 credits  |
| ENR 815      | Advanced Environment, Risk, and Decision Making, 5 credits                                |
| ENR 822      | Quantitative Methods for Natural Resources, 5 credits                                     |
| ENR 835      | Ecosystem Management Policy, 5 credits  |
| ENR 893      | Advanced Individual Studies, 1-3 credits  |
| ENR 899.03   | Special Topics in Environmental Science – Foundations of Environmental Science, 3 credits |
| GEOL SCI 550 | Geomorphology, 5 credits  |

**RURAL SOCIOLOGY**

Rural Sociology issues span the globe both internationally and domestically. Rural Sociologists engage in basic and applied sociological research related to the core discipline as well as meaningfully contribute to multidisciplinary research across a range of environmental, food, agricultural, community and development matters. Rural Sociology research focuses on environmental well-being, sustainable development of natural resources, social and community quality of life, and diffusion and impacts of technologies. Doctoral students can select from two tracks: Agriculture and the Environment, or Social Change and Development. Rural Sociology faculty maintain ties to Ohio State University Extension (OSUE) and the Ohio Agricultural Research and Development Center (OARDC), and form part of a larger cluster of social science faculty within SENR.

**Faculty**

|                    |                     |   |
|--------------------|---------------------|---|
| Joseph Donnermeyer | Professor           | P |
| Kristi Lekies      | Assistant Professor | P |
| Linda Lobao        | Professor           | P |
| Kenneth Martin     | Professor           | P |
| Richard Moore      | Professor           | P |
| Cathy Rakowski     | Associate Professor | P |
| Jeff Sharp         | Associate Professor | P |

**Courses**

|                |  |
|----------------|--|
| RURLSOC 622    | Amish Society, 5 credits                                       |
| RURLSOC 662    | Diffusion of Innovations, 5 credits                            |
| RURLSOC 666**  | Rural Poverty, 5 credits                                       |
| RURLSOC 678    | Women in Rural Society, 5 credits                              |
| RURLSOC 693    | Individual Studies, 2-5 credits                                |
| RURLSOC 694    | Group Studies, 2-5 credits                                     |
| RURLSOC 733**  | Sociology of Agriculture and Food Systems, 5 credits           |
| RURLSOC 742*   | Concepts and Theories in Rural Sociology, 5 credits            |
| RURLSOC 766**  | Environmental Sociology, 5 credits                             |
| RURLSOC 788*** | Sociological Theory Applied to Domestic Development, 5 credits |
| RURLSOC 789    | Survey Research Practicum, 5 credits                           |
| RURLSOC 888*** | Social Action in Community Development, 5 credits              |
| RURLSOC 892*** | Rural Sociology of Development and Social Change 5 credits     |

\* required course

\*\* required course within Agriculture and Environment focus

\*\*\* required course within Social Change and Development focus

## SOIL SCIENCE

Soil is a fundamental resource for ecosystems functioning and environmental health. It is a living filter that provides vital ecosystem services – including carbon sequestration, recycling of nutrients, and assimilation of waste products. Soil is a key component of natural, agricultural, and wildland ecosystems that sustains all global processes.

Soil science is highly interdisciplinary; soil scientists apply biology and microbial ecology, chemistry, earth sciences, ecology, hydrology, mineralogy, mathematics, nutrition, toxicology, and physics to understand, sustain, and improve the environment. A diverse range of research tools are used, such as geospatial analysis, computer modeling, microscopy, spectroscopy, bioassays, molecular biology, and other advanced field and lab technology for soil investigation.

### Faculty

|                    |                             |   |
|--------------------|-----------------------------|---|
| Nicholas Basta     | Professor                   | P |
| Jerry Bigham*      | Professor                   | P |
| Frank Calhoun*     | Professor                   | P |
| Richard Dick       | Professor                   | P |
| Warren Dick        | Professor                   | P |
| Don Eckert*        | Professor                   | P |
| Norman Fausey*     | Adjunct Professor           | P |
| Ronald Hendrick    | Professor                   | P |
| Rafiq Islam*       | Adjunct Assistant Professor | M |
| Karrie-Ann Kubatko | Assistant Professor         | P |
| Rattan Lal         | Professor                   | P |
| Brian Lower        | Assistant Professor         | P |
| Steven Lower       | Assistant Professor         | P |
| Ed McCoy           | Associate Professor         | P |
| Robert Mullen      | Assistant Professor         | P |
| Martin Shipitalo*  | Adjunct Assistant Professor | M |
| Brian Slater       | Associate Professor         | P |
| Olli Tuovinen      | Professor                   | P |

\*Adjunct and emeriti faculty members may serve on Advisory/Examination Committees but may not serve as advisors (Sections 2.3, 2.5, 3.5 and 3.7)

### Courses

|           |  |
|-----------|--|
| ENR 630   | Soils of Forest Ecosystems, 3 credits  |
| ENR 645   | Soils of the Tropics, 3 credits  |
| ENR 650*  | Soil Landscapes: Morphology, Genesis & Classification, 5 credits                 |
| ENR 655*  | The Soil Physical Environment, 4 credits   |
| ENR 660*  | Soil Chemical Processes and Environmental Quality, 5 credits                     |
| ENR 665*  | Biology of Soil Ecosystems, 4 credits  |
| ENR 671*  | Environmental Soil Physics, 5 credits  |
| ENR 675   | Environmental Fate and Impact of Contaminants in Soil and Water, 4 credits       |
| ENR 720** | Characterization of Soil in the Field and Laboratory, 3 credits                  |
| ENR 730** | Computer Simulation of Soil Hydrological and Biogeochemical Processes, 3 credits |



|            |  |
|------------|--|
| ENR 740**  | Field Soil Investigation: Soil Chemistry, Fertility and Biology, 3 credits |
| ENR 753    | Soil and Environmental Mineralogy, 5 credits                               |
| ENR 761    | Soil Biochemistry, 4 credits   |
| ENR 871    | Soils and Climate Change, 3 credits  |
| ENR 872    | Surface and Colloid Chemistry of Soils, 3 credits                          |
| ENR 899.04 | Soil Science Seminar, 2-5 credits  |
| ENR 993.01 | Soil Science Instruction, 3-5 credits                                      |
| STAT 528*  | Data Analysis I, 3 credits   |
| STAT 529*  | Data Analysis II, 3 credits  |

\* required core courses for M.S. and Ph.D. programs of study; ENR 671 may substitute for ENR 655.

\*\* required core courses for Ph.D. programs of study

**APPENDIX B**  
**STANDARD OPERATING PROCEDURES**



## STANDARD OPERATING PROCEDURES

### 1. Teaching Responsibilities for ENR 800 and ENR 897

The Graduate Studies Committee has traditionally been responsible for ENR 800 and ENR 897 as part of its role in monitoring student progress and the quality of the Environment and Natural Resources Graduate Program. Syllabi and teaching goals for these courses must be approved annually by the Graduate Studies Committee. Instructors may be asked to submit SEIs to the Graduate Studies Committee for review.

### 2. Purpose and Operation of the Required SENR Seminar Series (ENR 880)

The SENR Seminar Series provides a forum for scholarly interaction among faculty, students and speakers in the highest tradition of academic life. It is also a course (ENR 880) that is required for all graduate students in this program. Therefore, it is the responsibility of the graduate faculty and the Environment and Natural Resources Graduate Studies Committee to insure that the Seminar Series meets minimal standards of academic quality and educational effectiveness expected in a required advanced graduate course. In pursuit of that objective, the graduate faculty establishes the following standards and procedures for the Seminar Series.

- a. The Seminar Series shall be organized and operated by a Seminar Committee appointed by the Director of the School. Each quarter the Seminar Committee will schedule eight or nine seminars depending on the number of Thursdays in the quarter, excluding the first Thursday of the quarter and the Thursday of finals week. Speaker slots will be allocated in the following manner each quarter:
  - two slots shall be reserved for doctoral students who are required to present research seminars in this Seminar Series,
  - five slots shall be reserved for speakers nominated by the Areas of Specialization within the ENRGP,
  - one slot shall be reserved for a speaker nominated by GradRoots, and
  - the remaining slot will be held by the Seminar Committee to use at their discretion as shall any slots not used by the doctoral students, the Areas of Specialization, or GradRoots.

Presenters may be from the School, elsewhere in the University, or from outside of the University. The critical factor in selecting a speaker is that the speaker is suitable for this seminar format. A suitable speaker is one who can deliver a scholarly presentation that will be of interest to a broad spectrum of SENR faculty and graduate students. Narrow topics of interest to only one sector of the faculty and student body will not be acceptable, nor will presentations of a non-scholarly nature, such as program descriptions, travelogues, and descriptions or promotions of other institutions or research opportunities. Further, the expectation that the seminar topic should be of broad interest should not be interpreted as requiring that the presentation be overly simplified. The Seminar Committee members desire speakers who can present significant scholarly topics that will attract and maintain the interest of a broad spectrum of SENR faculty and graduate students.

- b. The procedures for reserving slots shall be:

- Doctoral students may reserve dates to present their research seminars by contacting the appropriate quarter chair of the Seminar Committee not later than the beginning of the quarter preceding the quarter in which the seminar slot is required.
- Each ENRGP Area of Specialization shall nominate one suitable presenter for each quarter. The nomination must be provided to the chair of the Seminar Committee not later than the beginning of the quarter before the quarter in which the presenter would speak.
- The ENR graduate students, through GradRoots, shall have the opportunity to nominate one suitable speaker for each quarter. The nomination must be provided to the chair of the Seminar Committee not later than the beginning of the quarter before the quarter in which the speaker would speak.

- c. Seminar presentations shall not exceed 40 minutes in length, and all speakers are to be apprised of this restriction well in advance so they can plan appropriately. This restriction will allow time for questions and discussion that will foster active participation of both faculty and students.
- d. Student attendance shall be taken each week. Requests for waivers of the ENR 880 attendance requirement for any quarter must be submitted by the student to the Graduate Studies Committee chair prior to the beginning of the quarter to be waived.

### **3. Procedures for Handling Thesis or Dissertation Proposals That Do Not Meet Standards of Scholarship or Disciplinary Guidelines**

Occasionally, Thesis or Dissertation Proposals may be challenged by the Graduate Studies Committee as being deficient in meeting one or both of two fundamental requirements. (1) Thesis and dissertation research shall fall within the generally recognized bounds of the fields of environment and natural resources, and (2) thesis and dissertation research shall adhere to the standards of scholarship set forth by the graduate faculty and listed in the front of this Handbook.

If the proposed research is deemed deficient in either of these areas, the Graduate Studies Committee may delay accepting the proposal until appropriate modifications are made. In such cases, the student and his or her advisor shall be asked to provide a revised proposal that directly addresses concerns in these two areas. A reasonable amount of time for completing and submitting that revisions shall be set by the Graduate Studies Committee. If the advisor believes that the judgment of deficiency is in error, he or she may appeal directly to the Graduate Studies Committee.

Once the revised proposal is returned to the Graduate Studies Committee, the chair shall send it to all members of the Graduate Studies Committee for review. If, after this second review, the Graduate Studies Committee is satisfied that the two fundamental requirements fit within the fields of environment and natural resources and quality of scholarship have been satisfied, the Graduate Studies Committee chair will sign the proposal title page and the proposal form and place the approved proposal in the student's file. If, however, after the second review, the Graduate Studies Committee does not deem the proposal acceptable on the basis of one or both of the fundamental requirements, the student's advisor shall be asked to meet with the Graduate Studies Committee to seek a satisfactory resolution to the problem.

If a satisfactory resolution is negotiated between the advisor and the Graduate Studies Committee, the student will be expected to comply within a time period set by the Graduate Studies Committee. If a satisfactory solution is not found during this meeting, the Graduate Studies Committee will set the conditions and time deadline that the student must meet to reestablish reasonable progress. This will be reported to the advisor and the student. If the student does not satisfy these conditions on time, the Graduate Studies Committee will report a finding of not making reasonable progress to the Graduate School. This could lead to the student being denied further enrollment in the Graduate School.

### **4. MENR Admission Procedures**

All interested applicants will submit a current resume and brief statement of goals to the Environment and Natural Resources Graduate Program Coordinator for the MENR Director to review work experience, eligibility for admission, and to assist the Director in choosing an appropriate graduate faculty advisor. After the Director communicates with the applicant regarding their admissibility, the applicant will submit the online application and supporting materials. Once an application is complete and a faculty advisor has been assigned, the Director will submit the application, along with a recommendation for admission, to the Graduate Studies Committee.

**Metrics to guide admission decisions regarding applicants with undergraduate GPA's below 3.0.** A decision on admission of an applicant whose undergraduate GPA falls below 3.0 includes three factors: undergraduate GPA, GRE scores, and years of professional experience. Applicants with an undergraduate GPA above 3.0 do not need to take the

GRE. Applicants with an undergraduate GPA below 3.0 on a 4-point scale must take the GRE General Test and report the results to the Graduate Studies Committee. (Graduate School Handbook II.2)

The following tables are designed to guide admissions decisions when the applicant's undergraduate GPA falls below 3.0. If the undergraduate GPA is close to 3.0, the compensating factors of GRE scores and years of professional experience are low. If the undergraduate GPA is further below 3.0, higher GRE scores and/or more years of experience are necessary to compensate. It is recognized that decisions on the admission of low undergraduate GPA students are often more art than science, and professional judgment rightfully plays a major role.

**Applicants with five or more years of professional experience.**

| GPA | Minimum GRE* | Years of Experience | Supporting Information  |
|-----|--------------|---------------------|---|
| 3.0 | –            | –                   | Three letters of recommendation, including a letter from a supervisor or administrator in the agency, company, or NGO of the applicant's most recent employment concerning career advancement to date and promotion potential, and the relevance of the MENR to the applicant's career potential within the agency, company, NGO or profession. |
| 2.9 | 1050         | 5                   |   |
| 2.8 | 1075         | 6                   |   |
| 2.7 | 1100         | 7                   |   |
| 2.6 | 1125         | 8                   |   |
| 2.5 | 1150         | 9                   |   |
| 2.4 | 1175         | 10                  |   |
| 2.3 | 1200         | 11                  |   |
| 2.2 | 1225         | 12                  |   |
| 2.2 | 1250         | 13                  |   |
| 2.0 | 1275         | 14                  |   |

**Applicants with fewer than five years of professional experience.**

| GPA  | Minimum GRE* | Years of Experience | Supporting Information  |
|------|--------------|---------------------|---|
| 3.00 | –            | 0                   | Three letters of recommendation. Two from faculty in the undergraduate major, one of whom must be the major advisor. If the applicant is professionally employed, one letter must be from the supervisor or an administrator (see above). |
| 2.95 | 1050         | 1                   |   |
| 2.90 | 1100         | 2                   |   |
| 2.85 | 1150         | 3                   |   |
| 2.80 | 1200         | 4                   |   |

**4.1 Procedures for Requesting Transfer to the MENR Degree Program from the MS or PhD Degree Programs**

Students admitted to a Master of Science (MS) or Doctor of Philosophy (PhD) degree program cannot transfer directly from either of those programs to the Master of Environment and Natural Resources (MENR) program after completing two quarters of study. During the first two quarters in a MS or PhD degree program, students wishing to transfer to the MENR may request a transfer pending review and approval by the Graduate Studies Committee. Master of Science and PhD students who transfer to the MENR must meet all of the course and credit hour requirements for the MENR degree. No more than 10 graduate credit hours from the previous MS or PhD studies at OSU or other institutions can be applied to the MENR degree, if taken within the past five years (see ENRGP Handbook 7.4). Students requesting a transfer must complete the Request for Transfer of Graduate Program form (on the Graduate School website) and submit an updated statement of purpose and resume as well as an updated committee and program of study form (on the SENR website).

## 4.2 Procedures for Requesting Transfer to the MS or PhD Degree Programs from the MENR Degree Program

Students admitted to the Master of Environment and Natural Resources (MENR) degree program may request a transfer to the Master of Science or Doctor of Philosophy degree programs if all admission requirements are met (see ENRGP Handbook 8) and with the written support of the faculty advisory and Advisory/Examination Committee. Master of Environment and Natural Resources students who transfer to the MS or PhD must meet all of the course and credit hour requirements for the requested degree. Credit hours from the previous MENR study at OSU or other institutions may be applied to the MS or PhD degree, if taken within the past five years (see ENRGP Handbook 7.4) and with the review and approval of the Advisory/Examination Committee and the Graduate Studies Committee. Students requesting a transfer must complete the Request for Transfer of Graduate Program form (on the Graduate School website) and submit an updated statement of purpose and resume as well as updated topic/committee and program of study forms (on the SENR website).

## 5. Criteria for Category P Status in the Environment and Natural Resources Graduate Program

Faculty holding Category P status in the Environment and Natural Resources Graduate Program shall have an established record of scholarly research in one or more of the disciplines in the fields of environment and natural resources, experience in advising master's and Ph.D. students to completion of degrees, experience serving as members of Advisory/Examination Committees for students pursuing master's degrees in environment and natural resources, experience serving on Advisory/Examination Committees for Ph.D. students in environment and natural resources, experience in teaching graduate courses at the 700 or higher level, and a record of continuous participation in the graduate program.

Category P status is awarded by the Graduate School after nominations are received from the Graduate Studies Committee. Faculty holding Category M status in the Environment and Natural Resources Graduate Program may apply for Category P status by submitting a letter requesting consideration for Category P to the Graduate Studies Committee chair. Along with that letter, the faculty member must provide a packet of information demonstrating that all criteria for Category P membership have been met.

These criteria provide minimum standards for nomination of faculty in the Environment and Natural Resources Graduate Program for Category P status in the Graduate School. All of the criteria will be considered, and meeting the minimum standards in any component does not guarantee a successful application.

The application packet must include current information in the following areas:

### Scholarly focus

#### Minimum Criteria

Faculty members holding Category P status shall have and maintain a focused and well developed scholarly research program within the areas of environment and natural resources in which they train Ph.D. students.

Describe the area(s) of scholarly research within the fields of environment and natural resources in which you believe that you are qualified to advise graduate students at the Ph.D. level.

### Graduate Student Advising Experience

#### Minimum Criteria

- M.S. advised to completion (minimum 1)
- M.S. committee member (minimum 1)
- Ph.D. committee member (minimum 10)

Provide a complete citation for the thesis or dissertation and a statement for each student listing further accomplishments, eg., publications from the thesis, papers presented, etc.

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For any doctoral students that you have advised to completion elsewhere, provide a complete citation for the dissertation and a statement for each student listing further accomplishments, eg., publication from the dissertation, papers presented, etc.

**Graduate Teaching****Minimum Criteria**

One graded 700-level or higher graduate course taught at Ohio State University or another institution within the past 5 years.

Provide a list of graduate courses taught. Include the name and number of the course, the year(s) taught, and your level of responsibility (%).

**Participation in the Environment and Natural Resources Graduate Program****Minimum Criteria**

Faculty in the Environment and Natural Resources Graduate Program are expected to participate regularly in program activities such as seminars and committees.

Provide evidence of participation in the Environment and Natural Resources Graduate Program, including seminars presented (date, topic, location/occasion) and service on graduate committees.





**APPENDIX C**

**MASTER OF SCIENCE THESIS AND DOCTORAL DISSERTATION PROPOSAL GUIDELINES**

## MASTER OF SCIENCE THESIS & DOCTORAL DISSERTATION PROPOSAL GUIDELINES

Theses and dissertations are scholarly efforts that consist of the three components of scholarship set forth in this Handbook. Proposals should be grounded in one of the disciplines in environment and natural resources, should creatively address an applied or conceptual/theoretical problem for that discipline, describe how the study will be conducted, and what the expected results might be. The development of a thesis or dissertation proposal involves two different but complementary activities – 1) the intellectual development of insights and ideas about a problem, and 2) the organization and presentation of a formal proposal for approval by the student's Advisory/Examination Committee and the Environment and Natural Resources Graduate Studies Committee.

The goal is to expand the body of knowledge in a given field. Scholarly work, therefore, consists of the a) acquisition of significant and extensive knowledge in an area or areas of study, b) synthesis and description of the diverse aspects of knowledge, and c) creative proposition and investigation of a novel aspect or new idea which purports to expand, alter, or clarify the status of knowledge.

Pursuit of scholarly research demands timeliness and focus. It is essential that students select their research topics as soon as possible and begin the scholarly process. Selection of Advisory/Examination Committee members and of the program of study coursework should be guided by the demands of that research topic. The requirements and guidelines provided here are designed to set forth the scholarly expectations of the Environment and Natural Resources Graduate Program and provide the student with a format for demonstrating that they are prepared to pursue their research topic.

**Master's Thesis:** All M.S. students must prepare a thesis proposal during their nine months in the program. This should be a collaborative effort between the student, the advisor, and the Advisory/Examination Committee. It is not expected that the student will be fully conversant in all aspects of the research topic before completing the thesis proposal. The thesis proposal will guide the selection of coursework needed in order to be able to complete the proposed research. A draft of the thesis proposal, approved by the advisor and Advisory/Examination Committee, must be submitted to the Graduate Studies Committee by the third quarter in the master's program.

**Doctoral Dissertation:** All Regular Ph.D. students must prepare a dissertation proposal during the first year in the Ph.D. program; all Direct-Admit Ph.D. students must prepare their proposal during the second year. This should be a collaborative effort between the student, the advisor, and the Advisory/Examination Committee. A draft of the dissertation proposal, approved by the advisor and Advisory/Examination Committee, must be submitted to the Graduate Studies Committee by the first quarter of the second year in the Regular Ph.D. program and by the third year in the Direct-Admit Ph.D. program.

### I. Intellectual Development of Insights and Ideas

#### A. Scholarly development of problems and questions

1. The best resource for starting your intellectual quest is your advisor. This should involve reading and reviewing the important literature in your discipline or field of study and discussing this with your advisor. The purpose of intellectual development is to identify important gaps in our understanding of phenomena or concepts/theories, and problems with approaches or methodologies, or some combination of both of these.
2. Conducting literature reviews is an important component in the development of insights and ideas. You will need to be able to identify the literature (i.e., scientific journals, books, proceedings, manuscripts, etc.), and the individual scientists who have contributed to a body of knowledge in your discipline.

#### B. Designing a study

1. What will you observe and/or measure?
2. How will you do this?
  - a. Will you conduct an experiment with a control and treatments, a quasi-experiment with treatments but no control?

- b. Will you observe and measure phenomena (characteristics of plants, animals, natural systems, human behaviors) and/or concepts (social surveys, case studies)?
3. What are the hypothesized relationships between the observations/measurements, or what are the objectives for observing/measuring the specified phenomena?
4. What do you expect to find from the study?
5. Realistically, what can you expect to accomplish in 2 years (master's thesis) or in 3 to 4 years (doctoral dissertation)?

## II. The Proposal

- A. Format - not all proposals look the same. Your advisor, together with your Advisory/Examination Committee, will determine the appropriate form for your thesis or dissertation proposal.
  1. Traditional Format: The traditional format includes three sections (introduction, literature review, and methods).
  2. Thematic or Chapter Format: Some disciplines might produce a series of manuscripts or chapters on separate but interrelated experiments, or a narrative about a case study.
- B. Important components
  1. Regardless of the format the proposal should address the following questions:
    - a. What is the intellectual/disciplinary context of the study, e.g. a theory, a conceptual model, or an applied disciplinary problem? (Introduction)
    - b. Why is this an issue that needs to be addressed? (Introduction)
    - c. What are your long-term goals, specific short-term objectives, the question(s) you are asking, and/or the hypotheses guiding your study? (Introduction)
    - d. What is known and what is not known about the theory, conceptual model, applied disciplinary problem? (Literature Review) Your challenge is not simply to summarize what is known/unknown, but synthesize the state of knowledge into a narrative that supports the issue you are addressing and why its important.
    - e. How will you conduct your study? (Methodology) This may also include variable transformations and statistical analyses.
    - f. What do you expect to find, and how will this add to the body of knowledge or help close gaps in our understanding of phenomena or concepts/theories, and applied problems? (Introduction or Literature Review)
    - g. What schedule or timeline will you follow to complete your study within 2 years for master's thesis or 3 to 4 years for Doctoral dissertation? (Appendix)
    - h. A list of references cited in your proposal. Your advisor can give you the correct format for citations, in the body of your proposal, and the reference list that is used in your discipline.

## SENR Q2S Transition Plans

SENR's transition plans, including the OSU Pledge to Students, are posted on the SENR website at:

<http://senr.osu.edu/Current Students/SENR Quarter to Semester Conversion.htm#>

The links listed there are printed below.

Additional transition resources will be posted at this link shortly, including sample four-year plans for students who will graduate with three years in quarters and one year in semesters (3-1), two years in each (2-2), and one year in quarters and three in semesters (1-3). Sample 2-1, 2-2, and 1-3 plans will be posted for each SENR undergraduate major.

# School Of Environmental & Natural Resources

<http://senr.osu.edu/secondaryprint.asp?id=65c=2145&info=&pageid=2336>



## SENR and the Quarter-to-Semester Conversion

### Why is this happening?

The conversion is the result of a directive from the Ohio Board of Regents and affects twenty 2 and 4 year Ohio colleges and universities that are currently on the quarter system, including: Ohio University, University of Cincinnati, Wright State University, Columbus State Community College, Sinclair Community College, Otterbein College, Clark State Community College, and others. The reasons are many but the main benefits to students are:

- The chance to be more competitive for internships and permanent positions because of an earlier end to the academic year.
- Greater ease of transfer between institutions and academic exchange programs, with an academic calendar consistent with the majority of colleges and universities in Ohio, the United States, and around the world.

### When will the semester system be implemented?

The new semester system will become effective Summer 2012. All of OSU will convert at the same time.

### [SENR Curriculum being prepared for Semester Conversion](#)

### [Semester Planning: What can current students do now?](#)

### [How will Earned Course Credits be Handled?](#)

### [Q2S Course Numbering](#)

### [OSU Pledge to Undergraduate Students](#)

### [Semester Calendars for Academic Years 2012-2013 through 2016-2017](#)

**Check back here often for updates on the School of Environment and Natural Resources Q2S.**

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<http://senr.osu.edu/secondaryprint.asp?>

[id=1c=SENR\\_Quarter\\_to\\_Semester\\_Conversion&info=&pageid=SENR\\_Q2S\\_Curriculum\\_Conversion](http://senr.osu.edu/secondaryprint.asp?id=1c=SENR_Quarter_to_Semester_Conversion&info=&pageid=SENR_Q2S_Curriculum_Conversion)



## [SEN](#) Quarter to Semester Conversion

### Preparing the SENR Curriculum for the Semester Conversion

Over the past year, SENR faculty and staff in consultation with students, alumni, and stakeholders have been developing courses and majors that will be implemented at the time of the conversion. The SENR semester majors and courses have been proposed and are now starting the review and approval process. This starts with review and approval by the SENR Academic Affairs Committee and the SENR Faculty. The College of Food, Agricultural and Environmental Sciences will conduct an administrative and fiscal review as well. Eventually, the University's Council on Academic Affairs (CAA) will review the curriculum and courses being established or revised by the School of Environment and Natural Resources. Ultimately, the OSU Board of Trustees will review and give its approval.

The SENR majors being proposed under the new Semester system are:

1. Environmental Science (ES)
2. Environmental Policy and Decision Making (EPDM)
3. Forestry, Fisheries and Wildlife (FFW)
4. Parks, Recreation and Resource Management (PRRM)

All SENR majors will take a common core of major courses which will be slightly expanded under the new semester curriculum. Most of the SENR majors will remain relatively intact with a variety of enhancements to program options and courses being offered by the School.

### How will the SENR Courses be Converted?

All current SENR courses will "disappear" from the course catalog and master schedule starting Summer 2012. In their place will be the semester courses. Several courses it will be a "straight" conversion with just a change in course number and credits and possibly title. These courses will appear as direct transfer in the degree audit.

In other cases, courses have been changed significantly because of being combined with other courses. How these courses transition into filling major requirements will vary, depending on what a student has taken. Some semester courses will be completely new. In most cases these

won't fill an old requirement but, under special circumstances, may be used to satisfy a particular curriculum requirement where a requirement gap may exist. This will be determined by the student's faculty advisor, the SENR Secretary, and the SENR Academic Affairs Committee.



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[http://senr.osu.edu/secondaryprint.asp?id=1c=SENR\\_Quarter\\_to\\_Semester\\_Conversion&info=&pageid=Q2S\\_Semester\\_Planning](http://senr.osu.edu/secondaryprint.asp?id=1c=SENR_Quarter_to_Semester_Conversion&info=&pageid=Q2S_Semester_Planning)



## SENR Quarter to Semester Conversion

### Semester Planning: What Can Current Students Do Now?

If you are going to be here for the quarter to semester switch (Summer 2012) you are a transition student, here's what you should be doing now:

1. Get those science and math GEC's done before the conversion if you've been putting them off. The courses will be longer with more material covered under semesters. That goes for any other course you've been dreading.
2. You can start preparing yourself mentally for taking FIVE 3 hour courses a semester instead of THREE 5 hour classes. A common mistake for students moving from quarters to semesters is to not take enough classes. You'll need a minimum of 121 hours to graduate under semesters, so if all courses were done under semesters that's  $121 \div 8 = 15.1$  hrs/semester.
3. You will most likely have classes all 5 days a week. It will be harder to schedule those Mondays and Fridays off.
4. About half of your courses will meet only on M, W, F and the other half of your courses only on Tu and Th so if you miss a M and/or W, you'll miss 1/3 to 2/3 of those M,W, F courses.

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[http://senr.osu.edu/secondaryprint.asp?id=1c=SENR\\_Quarter\\_to\\_Semester\\_Conversion&info=&pageid=Q2S\\_and\\_Earned\\_Credits](http://senr.osu.edu/secondaryprint.asp?id=1c=SENR_Quarter_to_Semester_Conversion&info=&pageid=Q2S_and_Earned_Credits)



### **SENR Quarter to Semester Conversion**

#### **How will earned course credits be handled?**

For transition students (those who start under quarters and finish under semesters), the credit hours for quarter courses will be converted to semester credits at the conversion rate of 0.6667.

For example, a 5 hr quarter course will be converted to  $5 \times 0.6667 = 3.3$ , 4 qtr. credits will convert to 2.6, and 3 credits become 2 under semesters.

#### **Required Hours for Graduation:**

For most majors, a minimum of 121 semester hours (to fill the required categories) will be required for graduation. (For most current SENR majors the minimum amount is 181 quarter hours to fill the required categories). Transition students will graduate when they have the required number of semester hours and those hours fill required categories.

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[http://senr.osu.edu/secondaryprint.asp?id=1c=SENR\\_Quarter\\_to\\_Semester\\_Conversion&info=&pageid=Q2S\\_Course\\_Numbering](http://senr.osu.edu/secondaryprint.asp?id=1c=SENR_Quarter_to_Semester_Conversion&info=&pageid=Q2S_Course_Numbering)



## SENR Quarter to Semester Conversion

### Q2S Course Numbering

**All semester courses will be 4 digits, to distinguish them from quarter courses.**

- 1000- UG (undergrad) – Non Credit Courses for orientation, remedial, or other non-college
- 1099 level experiences (like math 040 and 075 currently).
  
- 1100- UG – Basic courses providing undergraduate credit, but not to be counted toward a
- 1199 major or field of specialization in any department. Courses at this level are beginning courses, required or elective courses that may be prerequisite to other courses.
  
- 2000- UG – Intermediate courses providing undergraduate credit and may be counted
- 2099 toward major or field of specialization.
  
- 3000- UG – Upper level courses providing undergraduate credit that may be counted
- 3099 toward major or field of specialization.
  
- 4000- UG – Advanced courses providing undergraduate credit that may be counted
- 4099 toward major or field of specialization. Graduate students may receive graduate credit outside their own graduate program.
  
- 5000- UG and Graduate (G) courses providing undergraduate credit that may be counted
- 5099 toward major or field of specialization and foundation graduate credit.
  
- 6000- G – Foundational level graduate courses and research
- 6099
  
- 7000- G – Foundational level graduate courses and research
- 7099
  
- 8000- G – Advanced level graduate courses and research
- 8099



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<http://senr.osu.edu/secondaryprint.asp?>

[id=1c=SENR\\_Quarter\\_to\\_Semester\\_Conversion&info=&pageid=OSU\\_Pledge\\_to\\_Undergraduate\\_Students](http://senr.osu.edu/secondaryprint.asp?id=1c=SENR_Quarter_to_Semester_Conversion&info=&pageid=OSU_Pledge_to_Undergraduate_Students)



Quarter-to-Semester Update

## [SENR Quarter to Semester Conversion](#)

### **OSU Pledge to Undergraduate Students**

In planning and implementing its conversion from quarters to semesters for summer 2012, The Ohio State University is committed to protecting the academic progress of students. Students should find that the shift from quarters to semesters does not disrupt progress toward their degrees if they:

1. decide on their major and degree within a time compatible with four-year graduation;
2. meet the standards for progress defined by their academic unit and continue to complete appropriate course loads successfully; and
3. actively develop and follow academic plans in consultation with their academic advisors.

Students completing a quarter-plus-semester degree program will receive approximately the same amount of instruction, and the changes to the calendar and to courses should only improve the quality of programs. Full-time tuition (general and instructional fees) for an academic year under semesters will not cost more than what tuition would have cost for that same year under quarters, and the change should not adversely affect students' financial aid.

To ensure that the conversion will not harm students' progress, academic units will continue to provide intentional, purposeful advising. Academic advisors will understand how the changes in courses and curricula may affect students' degree programs, will know where and how programs can be flexible, and will be prepared to assist students in planning their remaining semesters to graduation. Good planning around a student's major will be particularly important, and the university will provide that support to students who begin their academic career under quarters and complete it under semesters.

Students will vary considerably in their academic progress, and each student's plan for completing degree requirements will need to be determined individually. Every student will be responsible for getting and using the advice essential to assure progress toward his or her degree. Advising is a joint endeavor, and we are confident that students and their advisors, working together, can develop effective plans leading to timely graduation as the university converts to semesters.

[The Ohio State University \(http://www.osu.edu/\)](http://www.osu.edu/) [University Registrar \(http://www.osu.edu/registrar/index.html\)](http://www.osu.edu/registrar/index.html)

# Academic Calendar

Ohio State's **conversion to semesters** will begin in [Summer 2012 \(bigcal.html\)](#). See the [Quarter to Semester Calendar Conversion website \(http://oaa.osu.edu/semesterconversion.html\)](#) for more details.

- [Quarter Calendars for Academic Years 2012-2013 through 2016-2017 \(html\) \(bigcal.html\)](#)
- [Printer-friendly Quarter Calendars for Academic Years 2009-2010 through 2011-2012 \(pdf\) \(bigcal\\_pdf.pdf\)](#)
- [Printer-friendly Semester Calendars for Academic Years 2012-2013 through 2016-2017\(pdf\) \(bigcalsem.pdf\)](#)
- [OSU Events Calendar \(http://www.osu.edu/events/indexWeek.php\)](http://www.osu.edu/events/indexWeek.php)
- [Get Adobe Acrobat Reader to read pdfs \(new window\) \(http://www.adobe.com/products/acrobat/readstep.html\)](http://www.adobe.com/products/acrobat/readstep.html)

The calendar was last updated on May 27, 2010 and is subject to change. For questions, contact the [Office of the University Registrar \(mailto:registrar@osu.edu\)](#).

| ACADEMIC YEAR (SEMESTERS)                           | 2012-2013       | 2013-2014       | 2014-2015       | 2015-2016       | 2016-2017       |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| AUTUMN SEMESTER                                     | Autumn 2012     | Autumn 2013     | Autumn 2014     | Autumn 2015     | Autumn 2016     |
| Classes begin                                       | Aug 22 (W)      | Aug 21 (W)      | Aug 27 (W)      | Aug 26 (W)      | Aug 24 (W)      |
| Labor Day - no classes, offices closed              | Sept 3 (M)      | Sept 2 (M)      | Sept 1 (M)      | Sept 7 (M)      | Sept 5 (M)      |
| Veterans' Day observed - no classes, offices closed | Nov 12 (M)      | Nov 11 (M)      | Nov 11 (T)      | Nov 11 (W)      | Nov 11 (F)      |
| Thanksgiving - no classes, offices closed           | Nov 21-23 (W-F) | Nov 27-29 (W-F) | Nov 26-28 (W-F) | Nov 25-27 (W-F) | Nov 23-25 (W-F) |
| Last day of regularly scheduled classes             | Dec 4 (T)       | Dec 3 (T)       | Dec 9 (T)       | Dec 8 (T)       | Dec 6 (T)       |
|   |                 |                 | Dec 11-17 (R-)  | Dec 10-16 (R-)  |                 |

|   |                    |                    |                      |                      |                      |
|---|--------------------|--------------------|----------------------|----------------------|----------------------|
| Final examinations                                  | Dec 6-12 (R-W)     | Dec 5-11 (R-W)     | Dec 11-17 (R-W)      | Dec 10-16 (R-W)      | Dec 8-14 (R-W)       |
| Fall commencement                                   | Dec 16 (Sun)       | Dec 15 (Sun)       | Dec 21 (Sun)         | Dec 20 (Sun)         | Dec 18 (Sun)         |
| <b>SPRING SEMESTER</b>                              | <b>Spring 2013</b> | <b>Spring 2014</b> | <b>Spring 2015</b>   | <b>Spring 2016</b>   | <b>Spring 2017</b>   |
| Classes begin                                       | Jan 7 (M)          | Jan 6 (M)          | Jan 12 (M)           | Jan 11 (M)           | Jan 9 (M)            |
| Martin Luther King Day - no classes, offices closed | Jan 21 (M)         | Jan 20 (M)         | Jan 19 (M)           | Jan 18 (M)           | Jan 16 (M)           |
| Spring Break  | March 11-15 (M-F)  | March 10-14 (M-F)  | March 16-20 (M-F)    | March 14-18 (M-F)    | March 13-17 (M-F)    |
| Last day of regularly scheduled classes             | April 22 (M)       | April 21 (M)       | April 27 (M)         | April 25 (M)         | April 24 (M)         |
| Final examinations                                  | April 24-30 (W-T)  | April 23-29 (W-T)  | April 29-May 5 (W-T) | April 27-May 3 (W-T) | April 26-May 2 (W-T) |
| Spring commencement                                 | May 5 (Sun)        | May 4 (Sun)        | May 10 (Sun)         | May 8 (Sun)          | May 7 (Sun)          |
| <b>SUMMER SEMESTER</b>                              | <b>Summer 2013</b> | <b>Summer 2014</b> | <b>Summer 2015</b>   | <b>Summer 2016</b>   | <b>Summer 2017</b>   |
| May Session Begins                                  | May 6 (M)          | May 5 (M)          | May 11 (M)           | May 9 (M)            | May 8 (M)            |
| Memorial Day - no classes, offices closed           | May 27 (M)         | May 26 (M)         | May 25 (M)           | May 30 (M)           | May 29 (M)           |
| May Session Ends                                    | May 31 (F)         | May 30 (F)         | June 5 (F)           | June 3 (F)           | June 2 (F)           |
| Summer Session Begins                               | June 10 (M)        | June 16 (M)        | June 15 (M)          | June 13 (M)          | June 12 (M)          |
| Independence Day - no classes, offices closed       | July 4 (R)         | July 4 (F)         | July 3 (F)           | July 4 (M)           | July 4 (T)           |
| Last day of regularly scheduled classes             | July 26 (F)        | Aug 1 (F)          | July 31 (F)          | July 29 (F)          | July 28 (F)          |
| Final examinations                                  | July 29-31 (M-W)   | Aug 4-6 (M-W)      | Aug 3-5 (M-W)        | Aug 1-3 (M-W)        | July 31-Aug 2 (M-W)  |
| Summer commencement                                 | Aug 4 (Sun)        | Aug 10 (Sun)       | Aug 9 (Sun)          | Aug 7 (Sun)          | Aug 6 (Sun)          |

The Ohio State University

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## SENR Semester Programs: Assessment Plans

SENR programs do not have assessment plans already on file with the University. The following selections below have been indicated in the online program proposal system to describe the preliminary assessment plans for SENR programs. Full plans for undergraduate and graduate programs will be completed for submission to the University in the spring of 2011, in collaboration with Dr. Warren Flood and his work to finalize assessment plans in the College of Food, Agricultural and Environmental Sciences. An important basis for assessment is the set of program learning goals detailed in the different curriculum maps for each SENR undergraduate major and several SENR graduate programs. Details have been added below to specify the measures currently used to assess SENR programs. Different assessment methods are used across the range of SENR degree programs, as indicated below,

### Direct Methods of Assessment:

*Undergraduate:*

#### **Standardized tests:**

-Certification or licensure examinations for FFW students: *The Wildlife Society, American Fisheries Society, and Society of American Foresters certifications are available to students completing various specializations in the FFW major.*

#### **Classroom Assignments:**

-Other classroom assignment methods: *Current SENR students must complete ENR 567 (3<sup>rd</sup> writing course), which evaluates written and oral communication skills. Portions of what is currently assessed in ENR 567 will be shifted in semesters to ENR 2367 (a 2<sup>nd</sup> writing course), ENR 4900.01/4900.02 (the ENR capstone courses, with integrative projects and assignments, written and oral, to assess students' mastery of a range of ENR knowledge and skills), and to an additional writing assessment component that will be added to an upper level required course in each major that includes a significant writing component (e.g., 4900.01, 662/5362, 642/5642). In this latter case, writing assignments in these upper level courses will be graded both by the content instructor and by a qualified writing instructor designated by the School, to assure that students achieve a satisfactory level of writing mastery.*

#### **Evaluation of a body of work produced by the student:**

-Capstone course reports, papers, or presentations : *ENR 606.01/4900.01 and 606.02/4900.02 are the SENR capstone courses, which require students to demonstrate an integrative knowledge and proficiency following on their environment and natural resource education and training in SENR.*



Graduate:

**Direct assessment methods specifically applicable to graduate programs:**

- Candidacy exams: *PhD students must complete a written and oral candidacy exam prior to proceeding with their dissertation research.*
- Research proposals written: *PhD students must complete a research proposal approved by their committee to proceed with dissertation research; MS students enroll in a research course (800/8998) and a research proposal symposium (897/8897) to develop and present their thesis research proposal; MENR students must gain approval of their project topic by their advisory committee and the director of graduate studies, and their independent project and program of study must also be approved by their committee.*
- Thesis/dissertation oral defense and/or other oral presentation: *MS and PhD students must pass an oral defense, and also give a public thesis presentation (PhD students present their research in the SENR seminar series); MENR students complete an oral Final Master's Examination.*
- Thesis/dissertation (written): *MS and PhD students complete written theses and dissertations; MENR students complete a written Final Master's Examination.*

**Indirect Methods of Assessment:**

Undergraduate:

**Surveys and Interviews:**

- Student survey : *SENR social science faculty have created a pre- and post-test survey instrument for SENR students, which students complete upon entering SENR and then again in their final semester. The survey evaluates environmental learning, attitudes, career interests, and other measures of student progress and experiences linked to SENR program objectives, and these results inform program vision and revision.*
- Alumni survey : *SENR social science faculty periodically complete phone interviews with SENR alumni to examine their long-term learning, job success, and retrospective views of SENR programs; these results inform program vision and revision.*
- Student Evaluation of Instruction : *SENR instructors use SEI's to evaluate their own teaching; SENR administration uses SEI's in part to gauge instructor success.*
- Student interviews or focus groups : *SENR director and other administrators conduct exit interviews with a sample of graduating SENR students to evaluate their success and satisfaction with SENR programs. These interviews inform shaping and direction of current and future programs.*

Graduate:

**Additional types of indirect evidence:**

- Job or post-baccalaureate education placement: *SENR administrators keep track of job placement of graduates as a measure of program success.*

**How the program uses or will use the evaluation data to make evidence-based improvements to the program periodically (select all that apply):**

- Meet with students directly to discuss their performance : *Meetings with students occur throughout the SENR curriculum, particularly in relation to term projects, capstone projects, and graduate theses and projects.*
- Analyze and discuss trends with unit's faculty : *results of surveys and exit interviews are shared in faculty meetings, and have been used extensively in preparing the SENR semester curriculum; ongoing review of the semester curriculum, particularly during 2012-2014, with continue this process.*
- Analyze and report to college/school : *survey results have been reported to the College and across the university.*
- Make improvements in curricular requirements : *survey and interview results were used extensively to shape the semester curriculum, and will be similarly employed to shape revisions to the semester curriculum in coming years.*
- Make improvements in course content : *information from meetings with students, SEI's, surveys and interviews are all used to improve course content; course revisions and improvements were a particular focus of the curriculum planning process for the Q2S conversion, and will remain a focus particularly during 2012-2014 as the semester curriculum is refined and optimized.*
- Periodically confirm that current curriculum and courses are facilitating student attainment of program goals: *survey results are particularly useful as evidence of success in this area.*