From:	Smith, Randy
To:	Fineran, Stacey; Osborne, Jeanne
Cc:	Leite, Fabio; Reed, Katie; Smith, Randy; Miriti, Maria; Stromberger, Mary; Duffy, Lisa; Hunt, Ryan; Haab, Timothy; Christy, Ann
Subject:	Proposal to add an Ecosystem Health option to the Master of Environmental and Natural Resources
Date:	Friday, June 21, 2024 8:16:32 PM
Attachments:	image001.png

Jeanne and Stacey:

The proposal from the School of Environment and Natural Resources to add an Ecosystem Health option to the Master of Environmental and Natural Resources was approved by the Council on Academic Affairs at its meeting on June 14, 2024. Thank you for attending the meeting to respond to questions/comments.

No additional level of internal review/approval is necessary. This action will be included in the Council's next Annual Activities Report to the University Senate (July 2024).

The Office of the University Registrar will work you with any implementation issues.

Please keep a copy of this message for your file on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions please contact the Chair of the Council, Professor Fábio Leite (.11), or me.

Randy

THE OHIO STATE UNIVERSITY

W. Randy Smith, Ph.D.
Vice Provost for Academic Programs
Office of Academic Affairs
University Square South, 15 E. 15th Avenue, Columbus, OH 43201
614-292-5881 Office
smith.70@osu.edu
Assisted by:
Katie Reed
Executive Assistant
(614) 292-5672
reed.901@osu.edu

TO: Randy Smith, Vice Provost for Academic Programs

FROM: Graduate School Curriculum Services

DATE: **4/12/2024**

RE: Proposal to **Revise the Master of Environmental and Natural Resources Program: Ecosystems Health Track Addition** in **College of Food, Agricultural and Environmental Studies.**

The **School of Environment and Natural Resources** in the **College of Food, Agricultural and Environmental Sciences** is proposing a **Revision of the Master of Environmental and Natural Resources to add an Ecosystems Health Track**.

The proposal was received by the Graduate School on **2/13/2024**. The combined GS/CAA subcommittee first reviewed the proposal on **2/28/2024** and requested revisions. Final revisions were received on **4/10/2024**. It is recommended for review at CAA.

THE OHIO STATE UNIVERSITY

College of Food, Agricultural, and Environmental Sciences

Academic Programs
100 Agricultural Administration
2120 Fyffe Road
Columbus, OH 43210

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cfaes.osu.edu

February 5, 2024

Vice Provost W. Randy Smith
Office of Academic Affairs
203 Bricker Hall
190 North Oval Mall

Dear Vice Provost Smith,

The College of Food, Agricultural, and Environmental Sciences is requesting Council on Academic Affairs approval for revision to the Master of Environment and Natural Resources, including the addition of an option in Ecosystem Health as outlined in the attached documents.

The proposal to revise the MENR core consists of the addition of two required courses, both of which provide knowledge in key areas important to the career areas served by this non-thesis graduate program. The addition of the Ecosystem Health option provides additional preparation for students, including professional students in the College of Veterinary Medicine, to enhance their career options.

This proposal has been approved by the School of Environment and Natural Resources and by the College of Food, Agricultural, and Environmental Sciences Committee on Academic Affairs. Please let me know if any additional information is needed in support of this request.

Sincerely,

Jeanne Osborne
Assistant Dean for Academic Affairs
College of Food, Agricultural, and Environmental Sciences
Osborne.2@osu.edu
Tel: 614-292-2389

Cc: Dr. David Barker, Dr. Ellen Klinger, Dr. Ann Christy

Kowalsky, Lisa

From: Osborne, Jeanne
Sent: Wednesday, April 10, 2024 4:04 PM
To: Kowalsky, Lisa
Cc: Miriti, Maria; Jones, Susan; Haab, Timothy; Fineran, Stacey; Berardo, Ramiro
Subject: FW: MENR-Tag proposal follow up
Attachments: MENR-EH_proposal_combined_April4.pdf; Proposal_MENR_NewCore_combined_April4.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Lisa,

Attached please find the further revised proposals to revise the MENR and the proposal for the new MENR – EH option per the additional feedback from the GS/CAA.

Please let me know if further information is needed.

Take care,

Jeanne

THE OHIO STATE UNIVERSITY

Jeanne M. Osborne | *Pronouns: She, Her, Hers*
Assistant Dean for Academic Affairs
College of Food, Agricultural, and Environmental Sciences
100E Agricultural Administration, 2120 Fyffe Rd.
Columbus, OH 43210
Tel: 614-292-1734
Fax: 614-292-1218
e-mail: Osborne.2@osu.edu

'Unexpected kindness is the most powerful, least costly, and most underrated agent of human change' (Bob Kerrey)

From: Kowalsky, Lisa <kowalsky.10@osu.edu>
Sent: Tuesday, April 2, 2024 9:40 AM
To: Osborne, Jeanne <osborne.2@osu.edu>
Cc: Miriti, Maria <miriti.1@osu.edu>
Subject: MENR-Tag proposal follow up

Hi Jeanne,

I hope you are doing well!

College of Food, Agricultural, and Environmental Sciences

School of Environment and Natural Resources

210 Kottman Hall
2021 Coffey Rd.
Columbus, OH 43210-1085

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THE OHIO STATE UNIVERSITY

April 4, 2024

Vice Provost W. Randy Smith
Office of Academic Affairs
203 Bricker Hall
190 North Oval Mall
Columbus, OH 43210

RE: Response to feedback received from the February 28, 2024 review of the MENR-EH Option proposal package by the combined Graduate School – Council on Academic Affairs (GS/CAA) committee.

Dear Vice Provost Smith,

Enclosed please find materials to support a proposed specialization in Ecosystem Health for the Master of Environment and Natural Resources (MENR), which is a tagged, professional (non-thesis), course-based master's degree program in the School of Environment and Natural Resources (SENR), College of Food, Agricultural and Environmental Sciences (CFAES).

The proposed Ecosystem Health specialization will serve students in both the Department of Preventive Medicine (VPM) and the School of Environment and Natural Resources (SENR) who seek a professional master's program to prepare them for careers in ecosystem health. Dr. Risa Pesapane (Assistant Professor in Ecosystem and Wildlife Health), who holds a shared appointment between VPM and SENR, is the faculty lead for the development of this specialization. The intention of the MENR-EH specialization is to provide environmental professionals with training on healthy ecosystems, including the impact infectious disease, and provide veterinary professionals with training on the management of free-ranging wildlife in the context of population health. This specialization fulfills a unique niche that is not currently addressed at The Ohio State University.

After careful consideration and discussion by the SENR Graduate Studies Committee and broader faculty, it was determined by a favorable faculty vote to add a specialization called Ecosystem Health to be offered under the MENR program. Also, because this is offered in collaboration with the College of Veterinary Medicine, Department of Preventive Veterinary Medicine, we are including in the is package a letter of support from the VPM Department Chair, Dr. Thomas Wittum, who originally proposed the idea for this specialization to SENR and which was enthusiastically received by our faculty and SENR leadership.

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Per the GSCAA guidelines for proposing new specializations, we are submitting the following:

- The MENR-EH specialization proposal, which includes:
  - A narrative of the rationale and motivation for this revision
  - A transition plan
  - The academic program learning outcomes assessment plan
  - A revised MENR curriculum plan
- Letter of support from VPM Department Chair

Based on comments received from the February 28th, 2024 review by the combined Graduate School – Council on Academic Affairs (GS/CAA) committee, we have revised the new MENR-Ecosystem Health (MENR-EH) proposal package by:

1) indicating a 16.7% credit hour modification of the program curriculum by moving two three-credit-hour courses (ENR 5210 and ENR 6100) from possible "electives" to "required" core courses because of the concurrent proposed revision to the MENR Core. This response to the subcommittee's comment can be found on page five of the MENR-EH option proposal document under Section 5, titled, "Statement of the percentage change to the existing program," and

2) listing the modalities (in person, hybrid, or online) for each of the MENR-EH program courses. This response to the subcommittee's comment can be found on pages three and four of the MENR-EH option proposal document under Section 4, titled, "MENR-EH graduate courses taught by faculty and taken by students in this Area."

3) An additional paragraph has been added to the MENR-EH proposal document under Section 3, "Program Administration and Degree Requirements" describing the current advising practices and monitoring/support of the student experience to make clear that whether students are taking courses as in person, online, or hybrid, they have the same level of support throughout their program.

Again, thank you for your review of this request. We look forward to receiving any additional feedback so that we may improve our MENR program to best support student success and fulfill SENR's and VPM's commitment to helping prepare career professionals in environmental management.

Yours sincerely,

Prof. Ramiro Berardo
Interim Chair, Environment and Natural Resources Graduate Studies Committee
Professor of Environmental and Natural Resources Policy

THE OHIO STATE UNIVERSITY

THE OHIO STATE UNIVERSITY

College of Veterinary Medicine

Department of Veterinary Preventive Medicine

1920 Coffey Road
Columbus, OH 43210

614-292-1206 Phone
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June 1, 2023

Dr. Eric Toman
Interim Director and Professor
School of Environment and Natural Resources
College of Food Agricultural and Environmental Sciences
The Ohio State University
316C Kottman Hall, 2021 Coffey Rd.
Columbus, OH 43210

RE: Proposed Ecosystem Health Focus Area within MENR degree program

Dr. Toman,

I am writing as Department Chair to represent the faculty of Veterinary Preventive Medicine in offering our support of the proposed new focus area in Ecosystem Health withing the Master of Environment and Natural Resources degree program in the School of Environment and Natural Resources. We expect to collaborate and partner with SENR faculty to identify, train, and mentor students in this program, with shared responsibilities for administering the focus area requirements and teaching appropriate core and elective courses within our areas of expertise. Contributions of VPM faculty to this program will be coordinated by Dr. Risa Pesapane who has a joint faculty appointment in our Departments.

We are happy to support this additional focus area within the MENR program and believe it will benefit a variety of students including our professional DVM students wishing to obtain valuable skills to complement their animal health training that are documented by meaningful credentials. We are committed to this further collaboration between our units and to the success of this program. Please do not hesitate to contact me if you require any additional information or documentation.

Sincerely,

Thomas E. Wittum, PhD
Professor and Chair

Master of Environment and Natural Resources (MENR)

Graduate Option in

Ecosystem Health (EH)

The Ohio State University

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1. Statement of justification explaining why this program rises to the level of a legitimate Graduate Option warranting recognition within the professional Master of Environment and Natural Resources Program as a transcript designation.

While a singular definition of what makes an ecosystem healthy remains elusive, as a field of study ecosystem health "integrates environmental conditions with the impacts of anthropogenic activities in order to give information for a sustainable use and management of natural resources." [1] The concept of ecosystem health "is closely linked to the idea of sustainability, which is seen to be a comprehensive, multiscale, dynamic measure of system resilience, organization, and vigor." [2] Given the increasing pace of biodiversity loss and emergence of infectious diseases along with the myriad impacts of land use changes and climate change the need for effective wildlife health investigations is widely recognized [3]. Yet the methods, values, and policies under which the health of natural resources are managed differ substantially from that of human and domestic animal health. Recognizing this growing need for professionals trained in ecosystem health, the School of Environment and Natural Resources (SENR) in the College of Food, Agricultural and Environmental Sciences (CFAES) and the Department of Veterinary Preventive Medicine (VPM) in College of Veterinary Medicine (CVM) launched a joint venture to design an option specifically for Ecosystem Health (EH) under the Master of Environmental and Natural Resources (MENR) program in SENR.

In general, the MENR program is a non-thesis, professional practice degree program designed for those wishing to enter, or advance within, the field of environment and natural resources in an applied or management-related way.

The intention of the MENR-EH option is to provide environmental professionals with training on healthy ecosystems, including the impact infectious disease, and provide veterinary professionals with training on the management of free-ranging wildlife in the context of population health. This option fulfills a unique niche that is not currently addressed at The Ohio State University. Currently, within the School of Environment and Natural Resources there is no organized curricula pertaining to the topic of health, yet disease ecology, ecotoxicology, and ecosystem health are well-recognized sub-disciplines within the overarching field of Environment and Natural Resources. Similarly, within the College of Veterinary Medicine students have limited exposure to ecology and the guiding principles, challenges, and impacts of managing the health of free-ranging wildlife populations, yet many aspire to be wildlife veterinarians. Among both groups, training on how to engage in collaborative, multi-sectoral and multi-disciplinary teams is lacking despite the inherent need for this skillset for working effectively on complex, interdependent challenges within ecosystem and wildlife health. The proposed MENR-EH curriculum integrates principles of fundamental ecology, natural resource management, sub-

[1] Burkhard, B., F. Müller, and A. Lill. "Ecosystem health indicators." (2008): 1132-1138.

[2] Norton, Robert Costanza Bryan G., Malte Faber, and David Rapport. Ecosystem health: new goals for environmental management. Island Press, 1992.

[3] Ryser-Degiorgis, Marie-Pierre. "Wildlife health investigations: needs, challenges and recommendations." BMC veterinary research 9.1 (2013): 1-17.

fields of eco-health, and collaborative interdisciplinary teams to simultaneously train the next generation of professionals working at the nexus of ecosystem and wildlife health.

The Ecosystem Health option is intended for those oriented towards professional practice in ecosystem and/or wildlife health, *not* for those interested in careers in public health. Students interested in how animal or environmental health may impact human health should consider the Veterinary Public Health or Environmental Health specializations within the Master of Public Health program within the College of Public Health. This EH option would serve as the flagship degree program of the Ecosystem Health Unit within the College of Veterinary Medicine and would complement its existing Zoo and Wildlife Conservation and Ecosystem Health Residency program in the same way that the Veterinary Public Health MPH program complements the Veterinary Public Health Residency program.

2. Faculty members with research programs that include Ecosystem Health (a non-exhaustive list)

Name	Rank	Appointment	Department
Risa Pesapane	Assistant Professor	P	Vet Prev Med & SENR
Bill Peterman	Associate Professor	P	SENR
Stanley Gehrt	Professor	P	SENR
Lauren Pintor	Associate Professor	P	SENR
Matt Davies	Associate Professor	P	SENR
Jay Flint	Assistant Professor	(TBD)	Vet Prev Med
Mark Flint	Associate Professor	(TBD)	Vet Prev Med
Andy Bowman	Associate Professor	(TBD)	Vet Prev Med
Pam Dennis	Associate Professor	(TBD)	Vet Prev Med
Vanessa Hale	Assistant Professor	(TBD)	Vet Prev Med

Note: Faculty listed from the College of Veterinary Medicine who may serve as advisors under this program will need to seek M status from the College of Food, Agricultural, and Environmental Sciences.

3. Program Administration and Degree Requirements

The Master of Environment and Natural Resources (MENR) program is a flexible, multidisciplinary program that is proposing to offer this option in Ecosystem Health. All students in the Ecosystem Health (EH) option of the MENR program must satisfy all requirements of the MENR plus additional requirements of the EH Option. Once a student completes all the degree requirements, including the minimum number of option courses, the student's advisor and the Chair of the Graduate Studies Committee will certify to the Graduate School that the student should be awarded the appropriate Graduate Option transcript designation. EH Option courses are listed in part 4 below.

The MENR tagged program, including the proposed MENR-EH option, is not specifically designed, nor currently seeking approval, to be delivered as a fully online program. However, under the MENR tagged and MENR-EH Option curricula, MENR students do take in-person, online asynchronous, and hybrid courses. Regardless of the course modalities chosen, all MENR

students have the support of a dedicated MENR Director (faculty advisor) and dedicated Program Manager (academic program specialist/staff advisor) both of whom interact with students from initial interview and recruiting to in-program advising for program of study course selection, internship advising, placement, and evaluation, career counseling, and job placement support. Advising meetings are available both in person/on campus and online/virtually throughout the program experience. Online scheduling for advising meetings with the Program Manager is also available. In addition, a new Carmen program management forum has been developed and is being used by students for online access to program documents and resources, instructions, and form submissions. Additional SENR career counseling support services are delivered both in person/on campus and online/virtually.

A MENR degree requires a minimum of 36 credit hours. For MENR-EH, the major component categories are as follows:

Programmatic core courses taken by all MENR students	12 credits
Professional Development courses taken by all MENR students	5 credits
EH Option required courses	10 credits
MENR elective courses	9 credits

4. MENR-EH graduate courses taught by faculty and taken by students in this Area.

MENR Core courses required of all MENR students:

Course #	Title	Credit hours	Terms offered	Core competency group
ENR 7520	Environmental Science and Law (online, asynchronous)	3	AU/SP	1, 2, 3, 4
ENR 6100	Advanced Principles of Environmental Sciences (online, asynchronous)	3	SP	1, 2, 3, 4
ENR 5210	US Environmental Impact Assessment (online, asynchronous)	3	AU	2, 4
*ENR/RURL SOC	Social Science course	3		4

*MENR students are required to gain holistic training in key natural and social science themes, theories and concepts relevant to understanding and managing coupled human-natural systems. Students will select in consultation with their graduate advisor a social science course reflective of their particular professional goals. Social science courses commonly used to fulfill this requirement include ENR 7400: Communication Environmental Risk (in person), ENR 7380: Climate and Society (in person), RURLSOC 5580: Social Impact Assessment (online, asynchronous). Other courses may be selected with permission of the MENR Director.

Professional practice courses required of all MENR students:

Course #	Title	Credit hours	Terms offered	Core competency group
ENR 7981	MENR Seminar (in person)	1	AU/SP	2
ENR 7981	MENR Seminar (in person)	1	AU/SP	2
ENR 7191	MENR Internship (in person)	3	AU/SP/SU	1, 2, 3, 4

Option courses required for all MENR-EH students:

Course #	Title	Credit hours	Terms offered	Core competency group
ENR 5335	Ecology of Infectious Disease (in person)	3	SP	1, 2, 3, 4
EEOB 5510	Interdisciplinary Team Science (in person)	3	AU	1
VETPREV 7710	Ecosystem Health and Conservation Medicine (hybrid)	3	AU	1, 2, 3, 4
VETPREV 7895	Critical Evaluation of the Scientific Literature (online)	1	AU	3

Choice of elective courses should be guided by the student's advisor. A list of pre-approved courses that have already been reviewed by the MENR-EH committee will be maintained. Students can petition to include additional elective courses which will be approved or denied by the MENR-EH faculty advisor based on their alignment with the core competencies of the program and the student's intended career path. Core competencies are listed in part 8.

Pre-approved electives (non-exhaustive list):

Elective courses for EH Option students (minimum 9 credit hours)

Title	Credit hours	Terms offered
ENR 5325: Forest and Public Lands Policy (in person)	3	SP, odd years
ENR 5360: Principles of Wildlife Ecology and Management (in person)	3	AU
ENR 5370: Management of Wildlife Habitat (in person)	3	SP
ENR 5374: Landscape Ecology for Natural Resource Management (in person)	3	SP
ENR 5480: International Conservation and Local Peoples (in person)	3	SP, even years
ENR 5560: Dynamics of Ecosystem Restoration (in person)	3	SP
ENR 7400: Communicating Environmental Risk (in person)	3	SP, even years
ENR 5649: Wildlife Conservation Policy (in person)	3	SP
ENR 5273: Environmental Fate and Impact of Pollutants in Soil and Water (in person)	3	SP
ENTMLGY 5605: Vector Biology and Vector-borne Disease (in person)	3	AU
RURLSOC 7560: Environmental Sociology (in person)	3	AU
VETPREV 7724: Environmental Health at the Human-Animal Interface (online)	1	SP
VETPREV 7700: Introduction to Aquatic Animal Medicine and Health (hybrid)	2	SP
GEOG 5210: Fundamentals of Geographic Information Systems (hybrid or online)	3	AU/SP/SU

PLNTPTH 5110: Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments (in person, hybrid or online)	3	SP, odd years
ENR 5263: Biology of Soil Ecosystems (in person)	3	SP

Semester Plan

Year One

Autumn	
ENR 7520	3
VETPREV 7710	3
EEOB 5510	3
VETPREV 7895	1
Total credit hours:	**10**

Spring	
ENR 6100	3
ENR 7981	1
Social Science course (ENR/RURLSOC)	3
Total credit hours:	**7**

ummer	
ENR 7191	3
Total credit hours:	**3**

Year Two

Autumn	
ENR 5210	3
ENR 7981	1
Option Elective	3
Total credit hours:	**7**

Spring	
ENR 5335	3
Option Elective	3
Option Elective	3
Total credit hours:	**9**
Total MENR-EH credit hours	**36**

5. Statement of the percentage change to the existing program

There will be an 16.7% credit hour change to the MENR-EH program due to moving two courses, ENR 5210 (3 credit hours) and ENR 6100 (3 credit hours) from being possible MENR "electives" to "required" courses in the MENR Core. The minimum total number of

hours to complete the MENR will remain 36 overall. This is less than a 50% change to the current MENR degree program. The proposed change to the MENR core requirement is being submitted concurrently with this proposal for a new EH option under the MENR.

6. Does this proposed transcript designation involve core subject matter from other disciplines?

No

7. Does this proposed transcript designation require review from other colleges or departments?

Yes, this program has been reviewed by the Department of Veterinary Preventive Medicine in the College of Veterinary Medicine since it is a joint program.

8. Transition Plan

Once a student is admitted to the MENR program with an option in Ecosystem Health, they will be required to follow the program and option requirements. Current students wishing to add the option need to be reviewed by the ENR Graduate Studies Committee for approval to add the option.

9. The core competencies of a graduate in the field of Ecosystem Health, as defined by the joint SENR-VPM subcommittee for the development of the MENR-EH program, are as follows:

Competencies in Ecosystem Health			
Skills in Collaborative Science	Ecosystem Health Knowledge	Skills in Scientific Methodology	Social Science Knowledge
Objective 1 To demonstrate the ability to effectively work in collaborative teams that integrate the strengths of team members and consider the roles, interests, and perspectives of diverse stakeholder groups and audiences.	*Objective 2* To demonstrate knowledge of ecosystems and ecological processes, their interdependence, and their relevance to sustainability, public health, animal health, environmental sciences, natural resource management, and modern agriculture.	*Objective 3* To demonstrate ability to critically evaluate research, including the interpretation of statistics, study design, and methods sufficient to apply research outcomes in a management setting.	*Objective 4* To demonstrate an understanding of historical, cultural, and political aspects that influence complex and emerging ecosystem health challenges.

• Build and maintain effective collaborations • Explain the benefits and challenges of team science to advancing knowledge in complex, dynamic systems • Examine the roles and interactions of team members • Recognize strengths and gaps in collaborative teams • Leverage team diversity to tackle complex, dynamic challenges • Develop rapport, trust, and a sense of community in teams with diverse backgrounds • Recognize and engage diverse stakeholders • Adapt communication style and mode of delivery for diverse audiences • Consider moral, ethical, and professional expectations in collaborative teams • Develop collaboration plans • Solicit, respect, and integrate contributions from others • Exhibits inclusivity and cultural competence	• Explain how temporal and spatial scales relate to ecological processes and how they influence the patterns observed in studies • Recognize that complex systems can be hierarchical and that levels operate at different spatiotemporal scales with different strengths of interaction • Describe how landscape composition and configuration shape the distribution and flow of organisms on the landscape • Recognize human dependence on the environment • Identify human accelerated environmental change • Assess how humans shape and manage resources as well as the effects of these actions • Explain the concept of interdependent human, animal, and environmental health • Characterize the role of climate, landscape heterogeneity, and disease ecology in persistence and spread of infectious disease • Describe the impact of infectious disease in ecological systems	• Understand the critical role of study design and analysis in drawing defensible conclusions to advance knowledge • Describe methods for curating data and code for scientific integrity and reproducibility • Explain the value of ethical best practices to maintain confidence in scientific institutions • Critically evaluate literature to identify strengths or limitations that can affect interpretations or conclusions • Perform basic applications of GIS technology to visualize spatial patterns or processes • Understand analytical approaches that are appropriate for different studies • Demonstrate ability to translate theory into practice	• Critically examine the values underlying how society views and addresses ecosystem challenges • Explain the historical, cultural, and political aspects of environmental policies and decision-making • Evaluate the role of economics in decision-making • Describe social-ecological systems and how they influence the achievement of sustainability goals across scales • Identify how backgrounds shape stakeholder values, interests, worldviews, and moral and ethical lenses • Recognize that one's own values, interests, worldviews, and moral and ethical lenses are not "normal" or "natural" • Appreciate diversity in knowledge, beliefs, and practices • Translate findings into options for actions by policy makers, business leaders, and the public • Consider issues of justice, beneficence, and autonomy

Environment and Natural Resources – Master of Environment and Natural Resources {ENVNATR-MENR}

Academic Program Learning Outcomes Assessment Plan

Program Learning **Goals** *Broad descriptive statements of what students are to be able to do, know, and care about upon the completion of the program*	Supporting/Contributing **Outcomes** *Detailed descriptions of what a student must be able to do to reach a goal under the specific conditions*	**Measures** – Means/Methods *the method or means by which the quality of student learning for each goal and associated outcome will be measured and assessed*				**Criteria** *The standards the program will use to evaluate the quality of student learning for each goal and associated outcome*
			Course or program requirement	*Embedded course assignment, exam, exercise, or activity to serve as authentic assessment method*	*Relevant topic or reference to program element*	
1.0 Demonstrate mastery of foundational knowledge in Environment and Natural Resources (ENR) through MENR core courses: • ENR legal framework • ENR social science • ENR ecology/natural science • ENR interdisciplinary studies/environmental impact course	1.1 Develop understanding of legal framework that defines the responsibilities of ENR agencies and organizations	1.1.1	Appraisal of progress toward completion of degree program	Direct --completion of core legal course *Academic performance in core course on ENR legal framework.*	Course grade indicating B or better in course (ENR 7520)	A
	1.2 Develop fundamental understanding of the social science foundations of ENR issues and potential responses	1.2.1	Appraisal of progress toward completion of degree program	Direct --completion of a core social science course *Academic performance in core ENR Social science course.*	Course grade indicating B or better in course (ENR/RURLSOC XXXX)	A
	1.3 Develop fundamental understanding of the ecology/natural	1.3.1	Appraisal of progress toward	Direct --completion of core ecology/natural science course	Course grade indicating B or better in	A

	science of ENR problems and issues		completion of degree program	*Academic performance in core ENR Ecology/natural science course.*	course (ENR 6100)	
	1.4 Develop fundamental understanding of interdisciplinary studies/environmental impact	1.4.1	Appraisal of progress toward completion of degree program	Direct --completion of core interdisciplinary studies/environmental impact course *Academic performance in core ENR interdisciplinary studies course.*	Course grade indicating B or better in course (ENR 5210)	A

2.0	Demonstrate professional skills applicable to ENR field of professional practice	2.1	Develop professional skills related to ENR field of professional practice	2.1.1	Appraisal of progress toward completion of degree program	Direct --completion of skills courses *Academic performance in skills courses*	Course grades indicating B or better in skills courses	A

3.0	Demonstrate mastery of knowledge in ENR field of study	3.1	Develop depth of knowledge in ENR field of study	3.1.1	Appraisal of progress toward completion of degree program	Direct --completion of MENR elective courses *Academic performance MENR elective courses.*	Course grades indicating B or better in MENR elective courses	A

4.0	Demonstrate professional development in	4.1	Interact with ENR professionals	4.1.1	Appraisal of progress toward	Indirect -- completion of ENR 7981 MENR Seminar	Overall course grade of Satisfactory	B

ENR through MENR professional development courses: • MENR Seminars • MENR Internship			completion of degree program	*Attendance at ENR and related events*		
	4.2 Obtain experience working directly with ENR agency or organization through: • In-career internship, • Paid internship, or • Volunteer experience	4.2.1	Appraisal of progress toward completion of degree program	Direct -- completion of ENR 7191 MENR Internship	Overall course grade of satisfactory	B, C

Criteria

Indicate the standards the program will use to evaluate the quality of student learning for each goal and associated outcome. Programs are to indicate both the minimum criteria required to assert a learning outcome (and thus collectively with other outcomes the associated goal) was achieved, and criteria of excellence the program is striving toward.

A	Minimal acceptable criterion for this identified supporting learning outcome is 75% of the enrolled MENR students earn a ***grade of B (3.0) or above*** for the course. When 90% of the enrolled MENR students obtain ***grades of B (3.0) or above*** for the course, the aspirational performance standard constituting programmatic excellence for this learning outcome will be attained.
B	Minimal acceptable criterion for this identified supporting learning outcome is 75% of all MENR students earn a ***grade of Satisfactory*** for the course. When 90% of all MENR students obtain ***grades of Satisfactory*** for the course, the aspirational performance standard constituting programmatic excellence for this learning outcome will be attained.
C	Minimal acceptable criterion for this identified supporting learning outcome is 75% of all MENR students participating in an internship will receive a ***positive evaluation*** from their supervisor. When 90% of all MENR students participating in an internship receive a ***positive evaluation*** from their supervisor, the aspirational performance standard constituting programmatic excellent for this learning outcome measure will be attained.