University of Wisconsin-Whitewater

Curriculum Proposal Form #3

## New Course

**Effective Term:**

**Subject Area - Course Number:** **ECON 752 Cross-listing:**

(See Note #1 below)

**Course Title:** (Limited to 65 characters) Resource Economics

**25-Character Abbreviation:** Resource Economics

**Sponsor(s):** Matthew WINDEN

**Department(s):** Economics

**College(s):**

# **Consultation took place**: [x]  NA [ ]  Yes (list departments and attach consultation sheet)

Departments:

**Programs Affected:** **None**

**Is paperwork complete for those programs?** (Use "Form 2" for Catalog & Academic Report updates)

[x]  NA [ ]  Yes [ ]  will be at future meeting

**Prerequisites:** Econ 738 and Econ 731 OR Econ 703, Econ 704 and Econ 737 OR Equivalent

**Grade Basis:** [x]  Conventional Letter [ ]  S/NC or Pass/Fail

**Course will be offered:** [x]  Part of Load [ ]  Above Load

 [ ]  On Campus [ ]  Off Campus - Location

**College:**  **Dept/Area(s):** ECON

**Instructor:** Matthew WINDEN

 *Note: If the course is dual-listed, instructor must be a member of Grad Faculty.*

**Check if the Course is to Meet Any of the Following:**

[ ]  Technological Literacy Requirement [ ]  Writing Requirement

[ ]  Diversity [ ]  General Education Option:

Note: For the Gen Ed option, the proposal should address how this course relates to specific core courses, meets the goals of General Education in providing breadth, and incorporates scholarship in the appropriate field relating to women and gender.

**Credit/Contact Hours:** (per semester)

Total lab hours: 0 Total lecture hours: 48

Number of credits: 3 Total contact hours: 48

**Can course be taken more than once for credit? (Repeatability)**

[x]  No [ ]  Yes If "Yes", answer the following questions:

No of times in major:       No of credits in major:

No of times in degree:       No of credits in degree:

Proposal Information: ([***Procedures for form #3***](http://acadaff.uww.edu/UCC/Curriculum_Handbook_09/Procedures_form3.docx))

**Course justification:**

This proposed course will be one of the elective courses for students pursuing the MS in Economics, who choose to specialize in Environmental and Natural Resource Economic analysis. It will expose the students to the techniques and models used in modern microeconomics research and analysis as specifically applied to issues related to the environment and natural resources as well as public policy analysis.

**Relationship to program assessment objectives:**

**Proficiency I: Analytical and Critical Thinking**

When faced with a particular (unknown) problem, students should be able to formally address the problem using modern tools of economic analysis. They should be able to formulate and structure the problem being examined using these economic tools and methods. As such, they should be able to identify, examine, implement and recommend:

* Identify: Students should be able to identify the problem being studied, identify the relevant dimensions along which the problem may be restricted and structured for economic analysis
* Students should be able to examine the implications of assumptions being made, examine the impact of various factors on the variables of interest, and examine the possible outcomes and consequences
* Students should be able to develop a framework for making choices and making recommendations amongst the various alternatives.

**Addressed:** Through the formulation of an economic problem dealing with environment and natural resources, subsequent literature review assessing the state of the literature on the problem, and complete write-up in paper form of the problem, the factors and influences surrounding it, and their ultimate recommendation as an analyst of potential solutions to the problem and or future directions of research needed to successfully address it.

**Proficiency III: Economic Literacy**

Economic Literacy pertains to content and knowledge that is specific to the economics discipline.

* Advanced Knowledge: Students should have a good understanding of some of the more advanced economic concepts, but a greater understanding of the topics and areas within the field of their choice.
* Comprehension: Students should be able to read journal articles form the discipline and have an understanding of the key concepts and ideas being presented and summarize the thesis of any article in a succinct manner

**Addressed:** Advanced knowledge is addressed through the formal education on advanced topics in the field of environmental and natural resource economics in class and through readings. Comprehension is addressed through assigned peer-reviewed journal articles to be read for class on the advanced topics and the requirement of class participation in which they will need to distill the arguments in those articles for class. It is further addressed and formally evaluated through the article review they are required to complete for class. This incorporates both the reading of a peer-reviewed journal article, summary of the thesis and key ideas, as well as shortcomings in a formal write-up.

**Proficiency IV: Communication**

Communication is an essential skill that we wish to emphasize.

* Students should be able to write a nontechnical paper that outlines and summarizes topics in economics, using valid economic analyses, as well as cite and reference work appropriately and be familiar with some of the common citation styles
* Students should be able to present and summarize the concepts of academic papers to their peers as well as communicate economic concepts and analyses in a non-technical fashion to people outside of the field.

**Addressed:** Within the category of written communication (nontechnical writing and citations) is addressed through both the paper write-up, as well as the article review. Within the category of oral communication (informal and non-technical) is addressed through both the paper write-up, as well as the article review, as the results and analysis pertained in the write-up must also be distilled into a short oral and visual presentation for class.

**Budgetary impact:**

* **Staffing**:- the course will be staffed by an Economics Department faculty that is Academically Qualified (AQ) and has Grad Faculty status.
* **Academic unit library and service & supply budget:** - no budgetary impact.
* **Campus instructional resource units**:- no budgetary impact.
* **Laboratory/studio facilities:**- No budgetary impact
* **Classroom space:**- A classroom is anticipated to be required in Hyland Hall to teach the class. The class will meet for a 1 hour 15 minute session, twice per week.
* **Evaluation of adequacy of current library holdings, recommendations for acquisitions, and impact of the course on the academic unit library allocation budget:** - No impact. The course will be taught using graduate textbooks which students will be required to obtain as well as peer-reviewed articles already available online through the library’s current offerings.
* **Explanation if the course is simply replacing another course, either entirely or in the cycle:**- This is a new course for the MS Economics degree, and does not replace any other courses.

**Course description:** (50 word limit)

Resource Economics provides an in-depth examination into the field of environmental and natural resource economics. It is designed to provide insight into economic aspects of a wide range of environmental issues such as optimal fishery and forestry management, energy provision, population dynamics, air and water pollution, climate change, and sustainability.

**If dual listed, list graduate level requirements for the following:**

1. **Content** (e.g., What are additional presentation/project requirements?)

2. **Intensity** (e.g., How are the processes and standards of evaluation different for graduates and undergraduates? )

3. **Self-Directed** (e.g., How are research expectations differ for graduates and undergraduates?)

**Course Objectives and tentative course syllabus** with [mandatory information](http://www.uww.edu/acadaff/UCC/Mandatory_Info_Course_Syllabi.docx)(paste syllabus below):

**Econ 752: Resource Economics**

University of Wisconsin-Whitewater

College of Business and Economics

Department of Economics

**Spring 2015**

**MW 12:30-1:45pm**

**Hyland Hall 1300**

**Instructor:** Matthew Winden

**Email:** windenm@uww.edu

**Phone:** 262-472-5579

**Office:** Hyland 4405

**Office Hours:** MWTR 8:45-10:45 or by appointment

**Required Text:** Bergstrom, John C. and Alan Randall, 2010, “Resource Economics: An Economic Approach to Natural Resource and Environmental Policy” Third Edition, Edward Elgar Publishing.

**Technology:**  1.) You will need to have access to a copy of Microsoft Excel.

 2.) All course announcements, administrative information (i.e. exam dates, syllabus, schedule), assigned article readings, notes, group postings, chats and discussions will be facilitated through the use of D2L.

**Prerequisite:** Econ 413 Mathematics for Economists

Econ 707 Microeconomics I

**Class Description:** Resource Economics provides an in-depth examination into the field of environmental and natural resource economics. The course is designed to provide insight into the economic aspects of a wide range of environmental issues such as optimal fishery and forestry management, energy provision, population dynamics, air and water pollution, climate change, and sustainability. The course is broken down into two sections. The first section will focus on the economics of the environment. It will look at the optimal design of environmental policies, the pros and cons of implementing the optimal designs, and methods for valuing environmental benefits and costs. The second section will deal with the economics of natural resources. It will introduce the classic models of exhaustible and renewable resource extraction with a focus on energy, water, forestry and fisheries. The course concludes by taking a look at the current state of thinking on market models of common property resources, as well as issues of sustainability.

**Course Objectives:** Overarching objectives of the course will include the development of critical thinking skills, informed decision making, technical writing abilities and oral communication skills. These skills will be developed through written and oral presentations, data analysis and interpretation, and problem solving activities.

**Work Policies:** To do well in this class, several tools are at your disposal to help you master the material. 1.) The textbook and journal articles are an excellent resource. They should be read thoroughly, not just used as a reference. You should read the chapters at least once prior to class, and reread the chapters prior to each exam. The assigned articles should be read before class 2.) The PowerPoint slideshows used in class will be posted on D2L. These should not be considered a substitute for being in class or for reading the textbook and articles. Rather, they complement what you learn in class. 3.) You can come to my office and I can also help to clarify material for you under the condition that you have first read the assigned material. 4.) If coming to my office during scheduled hours is inconvenient, you may e-mail me your question or concern, as well as schedule an appointment at an alternative time.

Your responsibility as a student is to attend class regularly. Some of the material included on your exams is presented in lecture, but not contained in the readings. It is also possible I will ask questions on the exams covered in the book, but not in lecture. You will find that other people's notes are a poor substitute for your own. Even viewing the slide shows is an imperfect substitute for actually being in class. Attendance is not required, but highly recommended. If you do have to miss class, get the notes from a classmate, read the materials and look at the slideshow for that class. If you still have questions, please come and see me and I will clarify any questions you might have.

**Grading Policy:** The grading for this course consists of five components: A midterm (25%), a final (30%), a paper (25%), an article review (10%), and class participation (10%).

**Components:** EXAMS (55%)

 **I do not give make-up exams.** Absence from an exam will only be excused for the following reasons:

*a. Participation in an authorized University activity.*

*b. Confinement due to illness, under a doctor’s care.*

*c. Death in the immediate family.*

*d. Participation in legal proceedings requiring your presence.*

Each and every one of the above situations requires an official letter (e.g., from a university official, doctor, lawyer, or funeral director along with supporting evidence of immediate family relationship). *A letter, e-mail or voice mail from a family member or friend is not an acceptable substitute.* I also require a phone number for verification.

If you must miss an exam, arrangements must be made with me **prior** to the exam for reasons “*a”* and *“d”*. I need to receive notice that you missed the midterm exam **no later than three days** after the exam date for reasons *“b”* and “c”. If a valid reason is present, I will weigh the other exams to make up for the missed exam; if no arrangements are made, you will receive a zero for the exam. This policy will be strictly enforced - no exceptions. Anyone who does not have one of the above valid reasons for missing an exam will receive a zero on the exam.

PAPER (25%)

The paper should be 15 pages in length and should be type-written in 12pt times-new-roman font, double-spaced with standard margins. The paper should be well organized with a clear statement of purpose, a logical presentation of appropriate evidence and arguments, and a conclusion. This is an analytical paper and the emphasis is on evaluation of evidence and arguments (such as those found in the peer-reviewed literature) rather than on a statement of personal beliefs. Your personal appraisal, as an analyst and researcher is important, but you must go beyond merely stating your opinions. Read and research the literature to support your views, as well as critique any shortcomings you believe exist in the current body of literature on your topic. You should pay special attention to how you present information or technical data, and must be sure to cite the sources you use correctly. If in doubt about what constitutes analytical writing, look at the course textbook and assigned articles read for class. Options on what to write about will be handed out the first week of class, many of which may be tailored to fit your particular interests. You are also free to propose other paper topics in lieu of those provided, as long as you okay it with me beforehand.

ARTICLE REVIEW (10%)

For the article review component, each student is required to identify a recent paper (last 5 years) in the peer-reviewed literature and provide a written critique of the paper. The critique is to be written as if the student is reviewing the article for a journal (that is, the student is acting as a referee for the paper). The article review should be type-written in 12pt times-new-roman font, double-spaced with standard margins. A draft of the article review will be due the 5th week of the semester so comments can be made. The final article review will be due the 10th week of the semester. Each student will provide an oral presentation to the class containing a short summary of their article, as well as their critique of the article.

CLASS PARTICIPATION (10%)

Class participation will be an important part of this class. Encouraging dialogue will provide a foundation for developing critical thinking skills regarding the difficult environmental, economic and social trade-offs often encountered throughout the material covered.

Exam 1 250 points

 Exam 2 300 points

 Paper 250 points

 Article Review 100 points

 Participation 100 points

 *Total Points Possible 1000 points*

**Distribution:** A 93-100% B 83-86.9% C 70-76.9%

AB 87-92.9% BC 77-82.9% D 60-69.9%

 F Below 60%

**UWW Statement:** The UW-Whitewater is dedicated to a safe, supportive and nondiscriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding Special Accommodations, Academic Misconduct, Religious Beliefs Accommodations, Discrimination and Absence for University Sponsored Events. For details please refer to the Undergraduate and Graduate timetables; the “Rights and Responsibilities” section of the Undergraduate Bulletin; the Academic Requirements and Policies and the Facilities and Services sections of the Graduate Bulletin; and the “Student Academic Disciplinary Procedures” (UWS Chapter 14); and the “Student Nonacademic Disciplinary Procedures” (UWS Chapter 17).

**Honor Code:** As members of the University of Wisconsin – Whitewater College of Business & Economics community, we commit ourselves to act honestly, responsibly, and above all, with honor and integrity in all areas of campus life. We are accountable for all that we say and write. We are responsible for the academic integrity of our work. We pledge that we will not misrepresent our work nor give or receive unauthorized aid. We commit ourselves to behave in a manner that demonstrates concern for the personal dignity, rights and freedoms of all members of the community. We are respectful of college property and the property of others. We will not tolerate a lack of respect for these values. \*Originated by Wheaton College: Honor Code and Statement on Plagiarism. <http://www.wheatoncollege.edu/StudentLife/honorCode/>

*So what is academic dishonesty?* While it is not possible to list every circumstance of this, academic dishonesty is thought of as *an attempt to deceive, to distort perceptions of reality, to gain a record of academic accomplishment greater than earned.* Furthermore, a*ll who are parties to the deceit are involved in academic dishonesty* and hence all parties are subject to disciplinary action.

Please know I will push for the harshest penalty possible should there be evidence of academic dishonesty in my class. If I did not do so, I would send you the wrong message that there are no consequences to your actions and I would also diminish the honest achievements of your classmates. Should you ever get caught cheating on an exam, you will receive an “F” for the respective test. Should you cheat repeatedly, you will receive an “F” for your final course grade.

**Tentative Schedule**

**Class Day Activity \_\_\_\_\_\_\_\_DUE\_\_**

1 -- Syllabus and Introduction to Environmental and Resource Economics

2 -- Externalities and Market Failure I

3 -- Externalities and Market Failure II

4 -- Pigouvian Taxes and Quotas **PAPER IDEA**

5 -- The Coase Thereom and Bargaining Solutions

6 -- Marketable Permit Systems: Theory

7 -- Marketable Permit Systems: Applications

8 -- Policy Success and Alternative Policies **PAPER SOURCE LIST**

9 -- Welfare Measurement

10 -- Benefit-Cost Analysis

11 -- Non-Market Valuation: Stated Preference Techniques I

12 -- Stated Preference Techniques II **ARTICLE DRAFT**

13 -- Non-Market Valuation: Revealed Preference Techniques I

14 -- Revealed Preference Techniques II

15 -- **EXAM 1**

16 -- Tragedy of the Commons

17 -- Optimal Management of Non-Renewable Resources

18 -- Energy Resources

19 -- Minerals

20 -- Article Review Presentations **ARTICLE REVIEW**

21 -- Optimal Management of Renewable Resources

22 -- Pollution

23 -- Fisheries & Forestry **PAPER DRAFT**

24 -- Water

25 -- Land Markets

26 -- Climate Change

27 -- Paper Presentations **PAPER**

28 -- Paper Presentations

29 -- Sustainability

30 -- Sustainability

**The Final Exam (EXAM 2) for this course is scheduled for the end of the semester.**

**Reading Schedule**

Background B&R: Chapters 1-7

**Week 1** (Classes 1 and 2) B&R: Chapter 8

Cropper, M. and W. Oates 1992, *Journal of Economic Literature* “Environmental Economics: A Survey,” 30, 675-740

**Week 2** (Classes 3 and 4) B&R: Chapter 9

Ayres, R.U. and A.V. Kneese, 1969, *American Economic Review* “Production, Consumption and Externalities,” 59, 282-297

**Week 3** (Classes 5 and 6) B&R: Chapter 10

Coase, R. 1960, *Journal of Law and Economics,* “The Problem of Social Cost,” 3, 1-44.

Baumol, W.J. 1972, *American Economic Review* “On Taxation and the Control of Externalities,” 62, 307-322

**Week 4** (Classes 7 and 8) B&R: Chapter 11

Weitzman, M. 1974, *Review of Economic Studies,* “Prices versus Quantities,”41, 477-491

Stavins R. 1998, *Journal of Economic Perspecitives,* “What Can We Learn from the Grand Policy Experiment? Lessons from SO2 Allowance Trading,” 12(3):69-88

**Week 5** (Classes 9 and 10) B&R: Chapter 12

Bockstael, N. and K. McConnell, 1983, *American Economic Review,* “Welfare Measurement in the Household Production Framework,” 73, 806-814

Randall, A. and J. Stoll, 1980, *American Economic Review,* “Consumer’s Surplus in Commodity Space,” 70, 449-455

**Week 6** (Classes 11 and 12) B&R: Chapter 13

Rosen, S. 1974, *Journal of Political Economy,* “Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition,” 87(1):34-55

**Week 7** (Classes 13 and 14)

**Week 8** (Classes 15 and 16)

Ostrom, E., 2000, *Journal of Economic Perspectives,* “Collective Action and the Evolution of Social Norms,” 14(3): 137-158

Gordon, H. 1954, *Journal of Political Economy,* “The Economic Theory of a Common Property Resource: The Fishery,” 62(2): 124-142

**Week 9** (Classes 17 and 18) B&R: Chapter 14

**Week 10** (Classes 19 and 20) Selected Readings from Current Events

**Week 11** (Classes 21 and 22) B&R: Chapters 15 & 16

**Week 12** (Classes 23 and 24) B&R: Chapters 17 and 18

**Week 13** (Classes 25 and 26) Selected Readings from Current Events

**Week 14** (Classes 27 and 28) B&R: Chapters 19 and 20

**Week 15** (Class 29 and 30) B&R: Chapter 21

**Bergstrom, John C. and Alan Randall, 2010, “Resource Economics: An Economic Approach to Natural Resource and Environmental Policy” Third Edition, Edward Elgar Publishing.**

**Contents:**

**PART I: NATURAL RESOURCE AND ENVIRONMENTAL POLICY AND NATURAL RESOURCE SUPPLY AND SCARCITY**
1. Economic Growth, Resource Scarcity, and Environmental Degradation: Where have we been and Where are we Going?
2. Ecosystem Goods and Services: How Does a Healthy Environment Support Economic Production, Consumption, and Quality of Life?
3. Resource Supply and Scarcity: How do we Define, Measure, and Monitor Natural Resource Supply and Scarcity?
4. Natural Resources, the Environment, and Policy: What is the Public Policy Context for Natural Resource and Environmental Economics?

**PART II: MICROECONOMIC THEORY FOUNDATIONS FOR PRODUCTION AND CONSUMPTION**
5. Economic Coordination and the Price System: How Does the Market System Work?
6. Economic Efficiency: How Does a Healthy Economy Allocate Natural Resources to Economic Production and Consumption?
7. Intertemporal Efficiency: How do we Efficiently Allocate Natural Resources Over Time?

**PART III: ECONOMIC THEORY AND INSTITUTIONS FOR PUBLIC POLICY**
8. Criteria for Economic Policy: How do we Tell a Good Natural Resource and Environmental Policy from a Bad One?
9. Rules of the Game: How do They Influence Efficiency and Equity and How can we Get Them Right?
10. Market Failure and Inefficiency: What Could Cause an Undesirable Market Allocation of Resources?
11. Institutional Framework: What is the Social and Legal Context for Natural Resource and Environmental Decisions and Policy?

**PART IV: MEASURING AND COMPARING BENEFITS AND COSTS OF NATURAL RESOURCE AND ENVIRONMENTAL POLICY AND PROJECTS**
12. Benefit–Cost Analysis: How do we Determine if the Benefits of a Resource Policy Outweigh the Costs?
13. Measuring Economic Values: How do we Account for all Relevant Benefits and Costs in Natural Resource and Environmental Decisions?

**PART V: OPTIMAL MANAGEMENT OF NON-RENEWABLE AND RENEWABLE RESOURCES**
14. Exhaustible, Non-renewable Resources: What is the Optimal Use and Management of Non-renewable Resources Over Time?
15. Renewable Resources: What is the Optimal Use and Management of Renewable Resources Over Time?

**PART VI: THE ECONOMICS OF AIR, LAND, AND WATER RESOURCE USE AND POLICY**
16. The Control of Polluting Emissions: How can we Protect the Environment and People from Air Pollution?
17. The Economics of Land: How do Land Markets Work and how do we Manage Land Use?
18. The Economics of Water: How is Water Valued and Allocated?

**PART VII: ENVIRONMENTAL ETHICS, RESOURCE CONSERVATION AND SUSTAINABILITY, AND THE FUTURE**
19. Understanding Sustainability: What can Economics Tell us About Using and Managing Resources in a Sustainable Manner?
20. Economics and Environmental Ethics: What are the Ethical Implications of the Economic Approach to Conservation and Preservation and what can we Learn from Other Ethical Approaches?
21. Economic Science, Economic Policy, and Doing the Best we Can: How do we Find Our Way Forward?

**Bibliography:** (Key or essential references only. Normally the bibliography should be no more than one or two pages in length.)

Ayres, R.U. and A.V. Kneese, 1969, *American Economic Review* “Production, Consumption and Externalities,” 59, 282-297

Baumol, W.J. 1972, *American Economic Review* “On Taxation and the Control of Externalities,” 62, 307-322

Bergstrom, John C. and Alan Randall, 2010, “Resource Economics: An Economic Approach to Natural Resource and Environmental Policy” Third Edition, Edward Elgar Publishing.

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