

CHANNEL ISLANDS  
COURSE MODIFICATION PROPOSAL

**Courses must be submitted by October 15, 2010, and finalized by the end of the fall semester to make the next catalog (2011-12) production**

DATE (CHANGE DATE EACH TIME REVISED): 10.7.10 REV 11.18.10; REV 12.15.10

PROGRAM AREA(S) : ECON

**Directions: All of sections of this form must be completed for course modifications. Use YELLOWED areas to enter data. All documents are stand alone sources of course information.**

**1. Course Information.**

[Follow accepted catalog format.] (Add additional prefixes if cross-listed)

**OLD**  
Prefix ECON Course# 464 Title **NATURAL RESOURCE ECONOMICS** Units (3)  
3 hours lecture per week  
[ ] hours blank per week

X Prerequisites: ECON 310 or 329  
[ ] Consent of Instructor Required for Enrollment  
Corequisites: [ ]

**Catalog Description** (Do not use any symbols):  
Microeconomics and capital theory applied to problems of conserving and managing natural resources. Analysis of public policies affecting renewable and nonrenewable resources including price controls, taxation and leasing. Representative topics include: forestry, fishery, energy, water and mineral economics.

General Education Categories [ ]  
[ ] Lab Fee Requested  
Course Level: [ ]  
X Undergraduate  
[ ] Post-bac/Credential Graduate

Graded [ ]  
CR/NC [ ]  
X A - F [ ]

[ ] Repeatable for up to [ ] units Total Completions [ ]  
[ ] Multiple Enrollment in same semester

**NEW**  
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[ ] hours blank per week

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Graded [ ]  
CR/NC [ ]  
X A - F [ ]

[ ] Repeatable for up to [ ] units Total Completions [ ]  
[ ] Multiple Enrollment in same semester

**2. Mode of Instruction (Hours per Unit are defaulted)**

Hegis Code(s) \_\_\_\_\_ (Provided by the Dean)

Existing

Proposed

	Units	Hours Per Unit	Benchmark Enrollment	Graded		Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	3	1	30	X	Lecture	3	1	25	X	[ ]
Seminar	[ ]	1	[ ]	[ ]	Seminar	[ ]	1	[ ]	[ ]	[ ]
Lab	[ ]	3	[ ]	[ ]	Lab	[ ]	3	[ ]	[ ]	[ ]
Activity	[ ]	2	[ ]	[ ]	Activity	[ ]	2	[ ]	[ ]	[ ]
Field Studies	[ ]	[ ]	[ ]	[ ]	Field Studies	[ ]	[ ]	[ ]	[ ]	[ ]
Indep Study	[ ]	[ ]	[ ]	[ ]	Indep Study	[ ]	[ ]	[ ]	[ ]	[ ]
Other blank	[ ]	[ ]	[ ]	[ ]	Other blank	[ ]	[ ]	[ ]	[ ]	[ ]

### 3. Course Attributes:

**General Education Categories:** All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/geapproval>. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

#### A (English Language, Communication, Critical Thinking)

- A-1 Oral Communication
- A-2 English Writing
- A-3 Critical Thinking

#### B (Mathematics, Sciences & Technology)

- B-1 Physical Sciences
- B-2 Life Sciences – Biology
- B-3 Mathematics – Mathematics and Applications
- B-4 Computers and Information Technology

#### C (Fine Arts, Literature, Languages & Cultures)

- C-1 Art
- C-2 Literature Courses
- C-3a Language
- C-3b Multicultural

#### D (Social Perspectives)

#### E (Human Psychological and Physiological Perspectives)

#### UDIGE/INTD Interdisciplinary

Meets University Writing Requirement

Meets University Language Requirement

**American Institutions, Title V Section 40404:** Government US Constitution US History  
Refer to website, Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>

**Service Learning Course** (Approval from the Center for Community Engagement must be received before you can request this course attribute).

### 4. Justification and Requirements for the Course. [Make a brief statement to justify the need for the course]

#### OLD

Natural Resource Economics is a survey course that examines the use of natural resources within our economic system. It examines both renewable (for example, water, renewable energy, forestry and fisheries) and non-renewable resources (coal, crude oil, natural gas and metals). It is an applied intermediate level microeconomics course. It is an elective course in both the Environmental Science and Resource Management major and the Economics minor.

- Requirement for the Major/Minor
- Elective for the Major/Minor
- X Free Elective

#### NEW

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- Elective for the Major/Minor
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**Submit Program Modification if this course changes your program.**

### 5. Student Learning Outcomes. (List in numerical order. You may wish to visit resource information at the following website: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

Upon completion of the course, the student will be able to:

#### OLD

2. Use the three components of an economic optimization problem to define economic optimization problems involving natural resources.
3. Solve economic optimization problems using the

Upon completion of the course, the student will be able to:\*

#### NEW

1. Apply optimization techniques to economic problems involving natural resources. (1)
2. Perform calculations using the mathematics of finance including compounding and discounting. (1,3)

- technique of marginalist decision-making.
- 4. Perform calculations using the mathematics of finance including compounding (compound interest and future value) and discounting (present value).
- 5. Use the tools from the mathematics of finance and economic optimization to determine the optimal usage of natural resources across time.
- 6. Use the model of markets (supply and demand) to predict natural resource pricing and usage.
- 7. Use the model of markets to predict the effects of government policy on natural resource pricing and usage.

- 3. Use the tools from the mathematics of finance and economic optimization to determine the optimal usage of natural resources across time. (1,2,3)
- 4. Predict natural resource pricing and usage using supply and demand. (1,2)
- 5. Predict the effects of government policy on natural resource pricing and usage. (1,2)

\*Program Learning Goals: 1) Apply economic analysis to evaluate everyday decisions and policy proposals. 2) Propose viable solutions to practical problems in economics. 3) Use empirical evidence to support an economic argument. 4) Conduct statistical analyses of data, and interpret statistical results. 5) Communicate effectively in written, spoken and graphical form about economic issues.

**6. Course Content in Outline Form.** (Be as brief as possible, but use as much space as necessary)

**OLD**

*Introduction to Economic Optimizaton*

- The three components of economic optimization problems
- Marginalist decision-making
- Applications involving the use of natural resources

*Introduction to the Mathematics of Finance*

- Compounding and discounting
- Applications involving the timing of natural resource usage

*The Model of Markets (Supply and Demand)*

- The nature of demand
- The nature of supply
- Price and output determination using supply and demand
- Analysis of government natural resource policy using supply and demand

*Analysis of Natural Resources (topics may vary, examples listed below)*

- Renewable resources
  - Water
  - Renewable energy- Solar power, wind power, tidal power and the like
  - Forestry
  - Fisheries
- Non renewable resources
  - Onshore and offshore oil and natural gas
  - Coal
  - Metals

**NEW**

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  - Forestry
  - Fisheries
- Non renewable resources
  - Onshore and offshore oil and natural gas
  - Coal
  - Metals

Does this course content overlap with a course offered in your academic program? Yes  No X

If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? Yes  No X

If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

**7. Cross-listed Courses (Please note each prefix in item No. 1)**

- A. List cross-listed courses (Signature of Academic Chair(s) of the other academic area(s) is required).
- B. List each cross-listed prefix for the course:
- C. Program responsible for staffing:

**8. References.** [Provide 3-5 references]

**OLD**

Clark, Colin. *Mathematical Bioeconomics*, 2<sup>nd</sup> edition. Wiley. 1990. (classic reference, advanced)  
 Howe, Charles. *Natural Resource Economics*. Wiley. 1979. (classic reference)  
 Muraoka, Dennis. "A Student's Guide to Economic Optimization." 2002.  
 Muraoka, Dennis. "A Student's Guide to Capital Theory and Intertemporal Choice." 2002.  
 Nicholson, Walter. *Intermediate Microeconomics and Its Application, 8th Edition*. Harcourt. 1999.  
 Thomas H. Tientenberg, *Environmental and Natural Resource Economics*, 6<sup>th</sup> edition, Addison- Wesley, 2002

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Clark, Colin. *Mathematical Bioeconomics*, 2<sup>nd</sup> edition. Wiley. 1990. (classic reference, advanced)  
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 Nicholson, Walter. *Intermediate Microeconomics and Its Application, 8th Edition*. Harcourt. 1999.  
 Thomas H. Tientenberg, *Environmental and Natural Resource Economics*, 6<sup>th</sup> edition, Addison- Wesley, 2002

**9. Tenure Track Faculty qualified to teach this course.**

**Dennis Muraoka**

**10. Requested Effective Date or First Semester offered:**

**11. New Resource Requested: Yes  No**

If YES, list the resources needed.

**A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)**

**B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)**

**C. Facility/Space/Transportation Needs:**

**D. Lab Fee Requested: Yes  No  ( Refer to the Dean's Office for additional processing)**

**E. Other.**

**12. Indicate Changes and Justification for Each.** [Check all that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

- |   |  |
|---|--|
| <input type="checkbox"/> Course title                           | <input type="checkbox"/> Course Content                      |
| <input type="checkbox"/> Prefix/suffix                          | <input checked="" type="checkbox"/> Course Learning Outcomes |
| <input type="checkbox"/> Course number                          | <input type="checkbox"/> References                          |
| <input type="checkbox"/> Units                                  | <input type="checkbox"/> GE                                  |
| <input type="checkbox"/> Staffing formula and enrollment limits | <input type="checkbox"/> Other <input type="text"/>          |
| <input type="checkbox"/> Prerequisites/Corequisites             | <input type="checkbox"/> Reactivate Course                   |
| <input type="checkbox"/> Catalog description                    |  |
| <input type="checkbox"/> Mode of Instruction                    |  |

**Justification:** Updated Student Learning Objectives (SLO) and aligns SLO with Program Learning Goals (PLG)

**13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes  No**

If, YES attach a program update or program modification form for all programs affected.

Priority deadline for New Minors and Programs: **October 4, 2010** of preceding year.

Priority deadline for Course Proposals and Modifications: **October 15, 2010.**

Last day to submit forms to be considered during the current academic year: **April 15<sup>th</sup>.**

William Cordeiro

Proposer(s) of Course Modification

Date

Type in name. Signatures will be collected after Curriculum approval.

### Approval Sheet

Course:

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

Program Chair		
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Signature

Date

Program Chair		
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Signature

Date

Program Chair		
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Signature

Date

General Education Chair		
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Signature

Date

Center for Intl Affairs Director		
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Signature

Date

Center for Integrative Studies Director		
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Signature

Date

Center for Multicultural Engagement Director		
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Signature

Date

Center for Civic Engagement and Service Learning Director		
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Signature

Date

Curriculum Chair		
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Signature

Date

Dean of Faculty		
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Signature

Date