

**Section 1. Proposed Course Outline** (A general statement of course content that informs class syllabus construction. Once approved, all sections of a given course must include this content, no matter which instructor teaches the course, or the mode of delivery. Divisions must include this new course outline in the Divisional Course Outline binder as required by COPPs.)

Course Number: **WATR 150**  Full Course Title for print catalog: **Water Resource Economics**

Abbreviated Course Title for Banner: **Water Resource Economics** (30 character limit)

Prerequisites: MATH 095

Co-requisites:

Grade Option:  Graded (with P/NP option)   Pass/No Pass only

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| **Number/Type Credits** | **Term Minimum Contact** | **Term Maximum Contact** | **11-Week Term Contact** |
| 2 Lecture | 20 hours (lecture credits x 10) | 24 hours (lecture credits x 12) | 22 hours (lecture credits x 11) |
| 2\_ Lec/Lab | 40 hours (lec-lab credits x 20) | 48 hours (lec-lab credits x 24) | 44 hours (lec-lab credits x 22) |
| Lab | hours (lab credits x 30) | hours (lab credits x 36) | hours (lab credits x 33) |
| 4\_ **Total credits (sum)** | 60 **Total hours (sum)** | 72 **Total hours (sum)** | 66 **Total hours (sum)** |

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| **Course Description (300 character limit):**  Applies economic and financial fundamentals to water issues such as, efficient allocation; utility rate structures; benefit-cost analysis; water pricing; supply and demand; policy relationships; and scarcity links to pricing. This is an introduction to performing analysis of water projects. | | | |
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| **Course Outcomes and Proficiencies** | | | **Assessments Planned** |
| What will the student ***know*** or ***be able to do*** at the end of the course?  What ***attitudes*** related to the subject will the student hold? | | What evidence will demonstrate that students have achieved course outcomes? (assessment tools may include departmental tests, written products, portfolios, juried performances, quizzes and exams, or alternative assessments such as qualitative studies, capstone projects, external reviewers, etc.) | |
| **Upon successful completion of this course, the student will:** | **How each outcome will be assessed:** | | |
| Select an appropriate analysis tool given a water conservation scenario provided; economic perspective, costs, benefits, and time frame for analysis | Weekly homework, class activities, final project | | |
| Generate a basic financial analysis of the following types; simple payback, discounted payback, net present worth, benefit-cost including life-cycle costing | Class activities, Homework, Final Project | | |
| Contrast orthodox economic analysis with alternative methods in water projects | Class activities, quizzes, and/or exams | | |
| Critique institutional and policy effects on effective water pricing using standard economic terminology | Class activities, quizzes, and/or exams | | |

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| Identify financial analysis issues that require additional assistance including; taxation, capital depreciation, lease – purchase decisions, where they occur in conservation scenarios | Homework, Final Project |
| Identify and quantify basic costs and benefits for an economic analysis of a water conservation measure | Homework, Final Project |
| Present the results of an economic analysis in a technical report and an oral presentation | Homework, Class Activities, Final Project |

**Course Content by Major Topics**What topics will be presented? What are the main activities of the course? What are the central themes?

(See sample at <http://www.lanecc.edu/cops/format3.htm>.)

**Topics:**

**Analysis will focus on the use of published national standards for public water projects including Circular A-94, NIST Handbook 135 & Principals and Guidance for Water Supply Projects**

Economic versus Financial Analysis Process

Standard Economic and Financial Terminology in Water

Time Value of Money as used in public projects

Consumer Decisions and Tapwater Pricing

Discounted Payback Methods as used in public project analysis

Wastewater and Consumer Consumption Decisions

Accounting for Financial Flows public sector approaches

Privatization and Water Ownership

Life Cycle Costs as described in NSIT Handbook 135

Food and Agricultural Institutions

Benefit-Cost Analysis as defined in Circular A-94, and Principals and Guidance for federal water projects

Water and Energy Conservation

Marginal Analysis and Cost Effectiveness Analysis of Water Projects

Government Institutions & Politics

Ecosystem Services and Valuation of Water Related Externalities

Embedded Water Infrastructure and Institutions

Footprinting and Alternative Indicies

**Section 2. Proposal Information**

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| --- | --- | --- |
| **Course Developer:** | **Type of Proposal** | **Type of Course:** |
| Stephen Clarke | New course | Lower Division Collegiate (transfer) |
| Date: Jan 28 2013 | Currently 199 or 299 | Professional/Technical (required or elective) |
| Catalog year to take effect: | Experimental Course | Developmental, numbered below 100 |
| 2013-14 | 199 Special Studies |  |
|  | 299 Trends |  |
|  | Revised course (If increasing credits, use credit change form) | |
|  | Reactivated course with no change | |
|  | Reactivated course with changes | |

**Rationale:**

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| **How does this proposal further the goals of the program or department?**  The Water Conservation Technician AAS degree prepares graduates for careers in the water field as water efficiency technicians, coordinators, and specialists, or as water management specialists and technicians. The program prepares students to design, implement and evaluate water conservation programs. |

This course specifically supports most of the programs learning objects including the development of basic knowledge of water resource economics and how economics relates to supply and demand (objective #6) and enables financially realistic recommendations (#2); conservation programs (#3); regulatory context (#5) and systems analysis (#9).

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| **What assessment evidence supports this proposal?** |
| This course was approved by the Water Conservation Technician program Advisory Committee as a part of the overall Water Conservation Technician Program development process. Until this year participants took ECON 260 Introduction to Environmental and Natural-Resource Economics. This course is no longer being offered. |
| **How do you know there is a demand for this course?** |
| This is a required course for a cohort training program. Enrollment will consist of all participants in the program. |

**Section 3. Curriculum Equity (**[**http://www.lanecc.edu/cops/curric.htm**](http://www.lanecc.edu/cops/curric.htm)**)**

**To promote an environment where all learners are encouraged to develop their full potential, this course will support Lane’s Curriculum Equity policy in the following way(s):**

A special effort will be made to provide role models of gender and diversity respect. This course will include content by ethnically diverse people in teaching methodology and evaluation practices whenever feasible, portray women and men from diverse cultural and ethnic backgrounds in scientific roles, and use gendered examples equally when illustrating methods and concepts.

**Section 4. For revised courses only: PREVIOUS Catalog/Course Information:**Course Number: Course Title in Banner: (30 characters maximum)

Full Course Title in print catalog:

Prerequisites:

Co-requisites:

Grade Option:  Graded (with P/NP option)  Pass/No Pass only

|  |  |  |  |
| --- | --- | --- | --- |
| **Number/Type Credits** | **Term Minimum Contact** | **Term Maximum Contact** | **11-Week Term Contact** |
| Lecture | hours (lecture credits x 10) | hours (lecture credits x 12) | hours (lecture credits x 11) |
| Lec/Lab | hours (lec-lab credits x 20) | hours (lec-lab credits x 24) | hours (lec-lab credits x 22) |
| Lab | hours (lab credits x 30) | hours (lab credits x 36) | hours (lab credits x 33) |
| **Total credits (sum)** | **Total hours (sum)** | **Total hours (sum)** | **Total hours (sum)** |

**Course Description:**

What will change? Course Number Title Course Description Credit hours Contact hours

**Section 5. Support Courses (New Professional/Technical course proposals must complete.)**

Professional/Technical courses are tracked within programs for purposes of Carl Perkins funding and budgetary planning. Indicate all degree or certificate programs for which this course will be required.

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| --- | --- |
| Program | Division |
| Water Conservation Technician AAS degree program | Sustainability |
|  |  |

**Section 6. Overlap Courses (New course proposals must complete.)**

While overlap of course materials is not necessarily a flaw, duplication of course materials may lead to inefficient use of college resources. If there is overlap, the faculty of overlapping courses must agree on the extent of overlap and attach a rationale explaining its necessity.

Indicate all departments/courses that this course may overlap. Division Dean of existing course enters one of two options at right. Note: N/A is not an option.

Options:

1. Approved: overlap is acceptable. Rationale attached.

2. Disapproved: reasons attached.

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| --- | --- | --- | --- | --- | --- |
| Division | Course Number / Title | % Overlap | Option | Division Dean of existing course (Signature required for all options) | Date |
| Social Science | ECON 260 /**Introduction to Environmental and Natural Resource Economics** | 15 |  |  |  |
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**Section 7. Qualification to fulfill degree requirements** (complete all relevant forms, available at <http://www.lanecc.edu/currsched/drrcforms.htm>, and send to Mary Brau for the Degree Requirements Review Committee):

Form(s) applying for the following degree requirement status have been attached. (Only check this box when forms have been completed and attached.)

**AAOT, ASOT-Bus, OTM:**

Arts & Letters

Social Sciences

Science /Computer Science

Mathematics

**AAOT:**

Cultural Literacy Option

**AAS, 1-year and 2-year certificates:**

Human Relations

**Section 8. Library Impact Statement**

Under accreditation standards, Library consultation is essential for new programs, new courses and for substantively revised courses when the revisions entail any change in library use.

**What assignments will require the use of library and information resources?**

     No Library or information services will be required.

Each academic area has a Liaison Librarian (<http://www.lanecc.edu/library/services/liaison.htm>). Contact the designated librarian to discuss the library needs of your course. Please allow the librarian at least one week to assess library resources.

**To be completed by Liaison Librarian:**

Library resources are adequate to support this proposal.

Additional resources are needed but can be obtained from current funds.

Significant additional Library funds/resources are required to support this proposal.

Liaison Librarian Date

**Section 9. Divisional Approval** (To be completed by Division Chair and Administrative Assistant)

**Human, Physical, and Financial Resources:**

Additional instructional costs (staff, materials, services or facilities) will be incurred to offer this course. Source of funding:

No additional instructional resources (staff, materials, services or facilities) are needed to offer this course.  
Explain: will be taught by current water program

adjunt.

**Required Certifications:**

We have developed minimum course certification standards according to the COPPs procedure “Instructor Qualifications: Credit,” to be filed with ASA upon course approval.

We have completed faculty certification form(s) for faculty qualified to teach this course, to be filed with ASA and Human Resources upon course approval.

Administrative Assistant/Coordinator Date

**Fees:**

We have completed fee rationale and fee request forms to be submitted to ASA upon course approval, in compliance with the COPPs procedure, “Fees: Special”

No special fees will be required for this course.

**Divisional Recommendation:**

The Division Chair and Administrative Assistant have reviewed this course proposal and kept a copy for divisional files.

Faculty review of this course was completed within the division on 11/12(date).

Pass  Do Not Pass

Division Dean Date

**Section 10. College Approval**

     

Curriculum Committee Chair Date Executive Dean Date

Curriculum Approval

Committee hearing:

Date Vice President, Academic Affairs & Chief Academic Officer Date

**Justification for Overlap**

**ECON 260 /Introduction to Environmental and Natural Resource Economics**

The proposed course deals exclusively with the analysis of projects and programs in water conservation, efficiency and management. Students are involved in the use of industry standard published guidance for analysis. Sections of documents like the following are utilized for specific water systems and programs.

**National Guidance:**

NIST Handbook 135 – Life-Cycle Costing Manual

Circular A-94: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs

AWWA Manuals of Water Supply Practices

**State Guidance:**

State of California Economic Analysis Guidebook

These published guides integrate water systems analysis with financial, and some economic analysis. Students are provided the skills to do appropriate analysis for specific projects they will encounter in their second year of study. They require focused analysis of specific water infrastructure at the local to regional scale. Overlap with ECON 260 will occur in the explanation of economic terminology and concepts embedded in the guidance. Economic analysis concepts like benefit-cost, life cycle costs, and valuation where they are dealt with they are covered at the financial analysis level. Alternative valuation, impact analysis and footprinting methods are dealt with as analysis tools for specific conditions.