Lane Community College

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

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)**

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.

Course Outcomes and Proficiencies

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?

Assessments Planned

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
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

Course Developer:
Stephen Clarke
Date: Jan 28 2013
Catalog year to take effect:
2013-14

Type of Proposal
- ☒ New course
- ☐ Currently 199 or 299
- ☐ Experimental Course
- ☐ 199 Special Studies
- ☐ 299 Trends
- ☐ Revised course (If increasing credits, use credit change form)
- ☐ Reactivated course with no change
- ☐ Reactivated course with changes

Type of Course:
- ☐ Lower Division Collegiate (transfer)
- ☒ Professional/Technical (required or elective)
- ☐ Developmental, numbered below 100

Rationale:
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).

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)

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.

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.

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			

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.

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 _____

Administrative Assistant/Coordinator _____ 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.