
CATALOG DESCRIPTION: GREEN ECONOMIC, POLICIES AND LAW

(3 CREDITS)

The course offers mainly an introduction to green economics with an overview of policies and law related to green economy. The course explains the axioms of green economics including financial analysis of green alternatives related to the built environment including economics and cost concepts, the time value of money, worth of green investments and economic evaluation of green alternative choices. Analysis of green public sector projects as well as risk and uncertainty in economic evaluation. The course covers generating quantitative analysis and developing economic models that assess the impact of green investments; and their impact.

REFERENCES: A list of readings will be provided

COURSE OBJECTIVES

The course aims at the following objectives

- Provide an introduction to the emerging field of 'green economics' for students, economists, environmentalists and policy makers.
- Study examples of effective green policies that are already being implemented across the world are presented, as well as policy prescriptions for issues including economic measurement, localization, citizens' income, taxation and trade.
- Provide examples and case studies from around the world including the UK, USA, Sweden and Canada.
- Derive and use the different engineering economy factors affecting green technologies
- Evaluate investment opportunities in green technologies and compare between alternatives using single and combined engineering economy factors.
- Perform breakeven analysis and sensitivity analysis
- Utilize spreadsheet functions to perform economic calculations.

COMPUTER USAGE

Students will be introduced to Microsoft Excel and will utilize it in assignments. Some assignments and term papers will require the use of spreadsheet economic models

LEARNING OUTCOMES

- Students that successfully complete this course will be able to:
- Describe the basic concepts and theories of green economy
- Identify the enabling conditions and policy options for making a shift towards a green economy from different examples around the world
- Generate quantitative analysis and developing macroeconomic models that assess the impact of green investments; and
- Apply the basic concepts of engineering economy as part of a decision making process for green technologies
- Evaluate investment opportunities in green technologies and compare between alternatives using single and combined engineering economy factors.
- Perform breakeven analysis and sensitivity analysis for green technologies
- Utilize spreadsheet functions to perform economic calculations.

COURSE OUTLINE (TOPICS):

1. Introduction to the history and development of green economy
2. Green Economy and Renewable energies
3. Green Economy and Buildings
4. Time Value of Money
5. Present worth and capitalized cost evaluation
6. Rate of return computation
7. Benefit/Cost ratio evaluation
8. Equivalent uniform annual worth evaluation
9. Break-even analysis and payback period
10. Sensitivity analysis and expected value decisions

RESOURCES FOR THE COURSE

UNEP United Nations Environment Programme Green Economy Website

ASSESSMENT

- Assignments 60%
- Quizzes 40%