

**Graduate Course Outline**  
**Department of Economics**  
**School of Business and Economics**

**ECON 6080-3**  
**Policy and Regulation for Sustainable Management (3,0,0)**

**1. COURSE OVERVIEW**

**Calendar Description**

Students explore the role of government policy in the regulation of the environment and sustainability. Topics include criteria for evaluating environmental policies; decentralized policies including liability laws and property rights; control and command policies; emission taxes and subsidies; transferable discharge permits; compliance costs, uncertainty, and information; environmental policy in Canada; air, land and water pollution control policies; policy on toxic and hazardous substances; local environmental issues; global environmental issues and policies.

**Educational Objectives/Graduate-Level Learning Outcomes**

After successfully completing the course, students will be able to:

1. Appraise the criteria for evaluating environmental policies.
2. Apply liability laws and property rights to sustainable management problems.
3. Assess the economics of command and control policies.
4. Evaluate the economics of emission taxes.
5. Explain the operation and problems of a permits market.
6. Compare and contrast the different approaches to environmental policy.
7. Evaluate compliance costs, uncertainty and informational issues in setting policy.
8. Critique different Canadian economic policy issues.
9. Analyze policy and regulatory issues relating to air, water pollution and toxic substances.
10. Appraise policy and regulatory issues relating to land use.
11. Assess local environmental issues.
12. Evaluate policy and regulatory issues relating to global environmental problems.

**Course Topics**

1. Criteria for Evaluating Environmental Policies
  - Review marginal abatement cost and marginal damage concepts
  - Efficiency and fairness
  - Incentives, enforcement and monitoring
  - Moral considerations
2. Decentralized Policies
  - Liability laws and property rights
  - Moral suasion approaches

- Market approach green goods
3. Control and Command Policies
    - Types of standards
    - The economics of standards
    - Standards and incentives
    - The economics of enforcement of standards
  4. Emission Taxes and Subsidies
    - Types of emission taxes
    - The economics of emission taxes
    - Emission taxes and incentives
    - Abatement subsidies
    - Is there a double dividend from a carbon tax?
  5. Transferable Discharge Permits
    - General principles
    - The economics of marketable discharge permits
    - Permits and incentive structure
    - Problems and issues with permits
    - Taxes or permits or both?
  6. Compliance Costs, Uncertainty, and Information
    - Private and social cost of compliance
    - Uncertainty and information in setting environmental policy
    - More than one policy to tackle environmental problem?
  7. Environmental Policy in Canada
    - General elements of Canadian environmental policy
    - Constitutional powers over the environment
    - Environmental regulation in a parliamentary system
  8. Water Pollution-Control Policy
    - Types of water-pollutants and their impacts
    - Water pollution control policies
    - Efficiency and cost-effectiveness
    - Comparison with US policy - U.S. Clean Water Act and recent policies
  9. Air Pollution-Control Policy
    - Types of air pollutants and their impacts
    - Air pollution control policies
    - Air pollution around the world control policy – The Clean Air Act
  10. Policy on Toxic and Hazardous Substances
    - Types of toxic hazardous substances and their impacts
    - Toxic and hazardous substances current policy
    - Economic issues in toxic waste management
    - Economic incentives in toxic waste management
  11. Local Environmental Issues: Recycling, Solid Waste Disposal, Water and Land Use
    - Municipal solid waste
    - The economics of recycling
    - Water use; sewage and water treatment and groundwater protection

- Land use control policies

## 12. Global Environmental Issues and Policies

- Global pollutants and impacts
- Global environmental issues – climate change, biodiversity loss, nitrogen and phosphorus cycle
- Preservation of wildlife, genetic diversity and natural areas
- International environmental agreements

## Texts/Materials

Field, Barry C. and Nancy D. Olewiler. 2011. *Environmental Economics*. Toronto: McGraw-Hill Ryerson.

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### Readings

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Andersen, Mikael Skou, and Janet E. Milne. "26 The future agenda for environmental taxation research." *Handbook of Research on Environmental Taxation* (2012): 479.

Berglann, Helge. "Implementing optimal taxes using tradable share permits." *Journal of Environmental Economics and Management* 64.3 (2012): 402-409.

Bergquist, Ann-Kristin, et al. "Command-and-control revisited: Environmental compliance and technological change in Swedish industry 1970–1990." *Ecological Economics* 85 (2013): 6-19.

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Briggs, Sam, and Malcolm D. Hudson. "Determination of Significance in Ecological Impact Assessment: Past change, current practice and future improvements." *Environmental Impact Assessment Review* 38 (2013): 16-25.

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Chan, Gabriel, et al. *The SO2 allowance trading system and the Clean Air Act Amendments of 1990: reflections on twenty years of policy innovation.* No. w17845. National Bureau of Economic Research, 2012.

Chen, Yuyu, et al. "Evidence on the impact of sustained exposure to air pollution on life expectancy from China's Huai River policy." *Proceedings of the National Academy of Sciences* 110.32 (2013): 12936-12941.

Crandall, Robert W. "Policy watch: corporate average fuel economy standards." *The Journal of Economic Perspectives* 6.2 (1992): 171-180.

Deweese, Donald N. "Instrument choice in environmental policy." *Economic Inquiry* 21.1 (1983): 53-71.

Dinan, Terry M. "Economic efficiency effects of alternative policies for reducing waste disposal." *Journal of Environmental Economics and Management* 25.3 (1993): 242-256.

Eskeland, Gunnar S., and Emmanuel Jimenez. "Choosing policy instruments for pollution control." *Policy Research Working Paper* 624 (1991).

Fan, Wenbo, and Xinguo Jiang. "Tradable mobility permits in roadway capacity allocation: Review and appraisal." *Transport Policy* 30 (2013): 132-142.

Fenge, Terry, and L. Graham Smith. "Reforming the federal environmental assessment and review process." *Canadian Public Policy/Analyse de Politiques* (1986): 596-605.

Fisher-Vanden, Karen, and Sheila Olmstead. "Moving Pollution Trading from Air to Water: Potential, Problems, and Prognosis." *The Journal of Economic Perspectives* 27.1 (2013): 147-171.

Goulder, Lawrence H. "Environmental taxation and the double dividend: a reader's guide." *International Tax and Public Finance* 2.2 (1995): 157-183.

Goulder, Lawrence H., and Ian WH Parry. "Instrument choice in environmental policy." *Review of Environmental Economics and Policy* 2.2 (2008): 152-174.

Goulder, Lawrence H., and Andrew Schein. *Carbon Taxes versus Cap and Trade: A Critical Review.* No. w19338. National Bureau of Economic Research, 2013.

Hahn, Robert W. "Economic prescriptions for environmental problems: How the patient followed the doctor's orders." *The Journal of Economic Perspectives* 3.2 (1989): 95-114.

Harrington, Winston, and Richard D. Morgenstern. "Command and Control What's the Best Approach for Solving Environmental Problems?" *The RFF Reader in Environmental and Resource Policy* (2013): 66.

Hoel, Michael, and Larry Karp. "Taxes versus quotas for a stock pollutant." *Resource and Energy Economics* 24.4 (2002): 367-384.

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Malueg, David A. "Emission credit trading and the incentive to adopt new pollution abatement technology." *Journal of Environmental Economics and Management* 16.1 (1989): 52-57.

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Nordhaus, William D. "Economic aspects of global warming in a post-Copenhagen environment." *Proceedings of the National Academy of Sciences* 107.26 (2010): 11721-11726.

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Tietenberg, Tom. "Tradeable permits for pollution control when emission location matters: What have we learned?" *Environmental and Resource Economics* 5.2 (1995): 95-113.

Vergara, Sintana E., and George Tchobanoglous. "Municipal Solid Waste and the Environment: A Global Perspective." *Annual Review of Environment and Resources* 37 (2012): 277-309.

Viscusi, W. Kip, Joel Huber, and Jason Bell. "Alternative Policies to Increase Recycling of Plastic Water Bottles in the United States." *Review of Environmental Economics and Policy* 6.2 (2012): 190-211.

Watson, William D., and Ronald G. Ridker. "Losses from effluent taxes and quotas under uncertainty." *Journal of Environmental Economics and Management* 11.4 (1984): 310-326.

Weitzman, Martin L. "Prices vs. quantities." *The review of economic studies* 41.4 (1974): 477-491.

White, Lisa, and Bram F. Noble. "Strategic environmental assessment for sustainability: A review of a decade of academic research." *Environmental Impact Assessment Review* (2012).

Zhang, Qiang, Kebin He, and Hong Huo. "Policy: Cleaning China's Air." *Nature* 484.7393 (2012): 161-162.

## **Student Evaluation Philosophy and Methods**

### **Online**

Topic Presentation	20%
Poster Presentation	20%
Online discussion	20%
Final Exam	40%

### **Face-to-Face**

Assignments	10%
Online Discussions	20%
Mid-term Exam	30%
Final Exam	40%

### **Topic Presentation**

### **Poster Presentation**

Students will prepare and present a poster to the community on a particular pollutant in a team.

### **Assignments**

The assignments will consist of short-answer questions and problem sets. A grade of zero will be given for all late assignments unless permission is received in advanced.

### **On-line Discussion**

Six discussion questions will be posted for comment by students at different times throughout the course.

- Discussion 1 – What criteria should be used to evaluate environmental policy?
- Discussion 2 – What are some differences between cap and trade versus taxation?
- Discussion 3 – Which is price or quantity restriction better to regulate pollutants?
- Discussion 4 – What are the problems with the Canadian environmental policy?
- Discussion 5 – How should one regulate local air pollutants?
- Discussion 6 – How should global environmental issues be dealt with?

Students are expected to engage in an active debate with each other of the issues involved. The discussion will be monitored to ensure it remains focused on the question asked and that all students are respectful of each other and engaged. Each on-line discussion will be graded after each discussion based on the quality and not the quantity of each student's contributions.

### **Mid-term Exam**

The face-to-face students will have a mid-term after Module 5.

### **Final Exam**

The comprehensive final exam is three hours in length. Electronic devices are not permitted during exams with the exception of a nonprogrammable calculator.

## **2. RELATIONSHIP TO OTHER COURSES**

### **Prerequisites**

ESMN 6020, ESMN 6030, ESMN 6060

### **Co-requisites**

None

### **Links to Previous, Concurrent and Subsequent courses**

This is the capstone course in the MScESM where students apply the knowledge and skills developed in other classes addressing policy and regulatory issues relating to economic sustainability.

## **3. COURSE PURPOSE AND FIT IN GRADUATE PROGRAM**

### **What is this course's role in the graduate program?**

Students will understand government policy and regulatory options for dealing with market failure and the advantages and disadvantages of these different options.

## **4. DELIVERY**

### **Delivery mode (face-to-face, blended, distance)**

The course will be developed for distance, blended, and campus delivery.

### **Delivery Features**

- Lectures recorded using Camtasia
- Group work
- Online discussions

### **Instructional Approach**

This course employs lectures and independent study.

## **5. OTHER**

## Methods for Prior Learning Assessment and Recognition

PLAR is not allowed in graduate programs under Northwest Commission on Colleges and Universities (NWCCU) accreditation standards. No PLAR credit will be awarded, which is permissible under TRU policy.

## Course Policies

**Academic Integrity** – In accordance with TRU Policy 5-0.

**Examinations** – In accordance with TRU Policy ED 3-9. In addition, students must pass the final exam to receive a passing grade for the course.

**Grading** – In accordance with TRU Policy ED 3-5.

**Late Assignments** - A grade of zero will be given for all late assignments unless permission is received in advanced from the instructor/facilitator.

**Student Academic Appeals** - In accordance with TRU Policy ED 4-0.

**Student Attendance** – In accordance with ED 3-1.

**Team Conflict** - All team members should actively participate in the analysis of the case and the preparation of the report and act professionally towards each other. During the course, if a student feels this is not occurring, they should bring this matter to the attention of the facilitator immediately so they can investigate the conflict and take the appropriate action including assigning students a failing grade for the course. Working effectively in teams and acting professionally towards one's colleagues is a major learning goal of an MBA program. Students should be careful to ensure their behaviour does not become an issue.

**Withdrawals** – In accordance with ED 3-0.