

**Economics 105, Sect 001, Environmental Economics for the Citizen**

1:30-2:45pm MW, Innovation Hall 208

**Dr. Carrie Meyer, George Mason University**

[cmeyer@gmu.edu](mailto:cmeyer@gmu.edu), Mason Hall D159, 1<sup>st</sup> Floor

Spring 2016, Office Hours, 10:30-11:30am MW

**Course Goals:**

To provide students with an understanding of economics as a social and behavioral science; environmental issues serve as applications. The rational, economic analytical approach is introduced and the basic principles of Micro and Macroeconomics are applied to problems such as energy markets, air and water pollution, sustainability, population and environment, waste and recycling, and dealing with climate change. Quantitative and qualitative evidence are brought to bear on the economic models.

**Skill requirements and prerequisites:**

This is a course without prerequisites for non-majors; but students are advised to complete their quantitative reasoning requirement before taking this class. Students must have a functional Mason email address. Familiarity with Blackboard to access course materials will be a plus.

**Texts:**

**Required:** Mankiw, N. Gregory. *Essentials of Economics*. 6th edition. South-Western, Cengage Learning, 2012.

**Recommended:** Study Guide to accompany the above text.

**Grades**

Grades will be based on three multiple choice midterm exams (the lowest will be dropped) a final, an “optional” paper, and class participation. There will also be some homework and quizzes but they are for your benefit only and will not be graded.

Midterms @ 50%

Cumulative Final Exam @ 40% May XX, 1:30-3:15PM

Participation 10%

Paper – points are added on to final scaled score – see below.

The grading scale will tend to follow the standard scale:

90-100%      A

80-89%       B

70-79%       C

60-69%       D

I expect that there will be a curve, but the curve will depend on the difficulty of exams and may be higher or lower than the standard scale. No make-ups will be offered for the midterm exams; if you miss a midterm, that will be the one that is dropped. Do not miss the final.

### **Short paper – 4-5 pages of text and graphs (800 words)**

Choose an environmental or resource issue in the news that can be analyzed by applying principles of economics that we have discussed in class. You must use at least one of the analytical graphs we have used in class in your analysis, e.g. supply and demand graph.

Find at least one current news source (dated after this course begins) from a newspaper or internet news source. (WSJ is highly recommended.) Your textbook should also be a source for the paper.

The paper must be 4-5 typed pages (double-spaced) of text and graphs -- **at least 800 words** plus graphs. The graphs should not be copied from your news source, hand-drawn graphs are fine.

You should include an additional page for references -- i.e. the article and your textbook -- and cite these sources in the text of your paper, for example: (Mankiw 2015: 120-24). Quoted material must be indicated in quotation marks with the source cited in the text. See the “Chicago Manual” for a style guide.

Please staple your paper in the upper left hand corner. **Do not use plastic covers or folders!**

The paper will be graded as follows:

After your exams and participation have been weighted and scaled to 100, the points you receive on the paper will be added on top of that.

An “A” paper will receive 6 points.

A “B” paper will receive 5 points.

A “C” paper will receive 4 points.

Inadequate papers – papers that are too short or not well-related to the course -- will receive ZERO points.

**The papers are due on the last day of class** -- NOT the day of the final exam.

### **Class Participation**

Students must keep up with the reading and participate in class discussions. There will be opportunities for very short class presentations of news articles. The participation grade is not strictly proportional to the amount of time spent talking in class. However, relevant questions, constructive comments, and alternative points of view are appreciated -- so is attendance.

### **Honor Code:**

George Mason University has an Honor Code which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited.

### **Disabilities:**

Students with disabilities needing academic accommodations should see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.

**Enrollment:**

Students are responsible for verifying their enrollment in this class. Schedule adjustments must be made by university deadlines.

---

**Topics****Introduction: Economics as a social science**

Economics is briefly contrasted to other social sciences such as anthropology, history, political science, psychology, and sociology, while the scientific method is introduced.

Chapter 1. (pp. 3-12, only) Making decisions, tradeoffs, opportunity cost, thinking at the margin, incentives, trade and markets, Case Study: Gasoline Prices; FYI: Adam Smith and the Invisible Hand.

Chapter 2. Thinking Like an Economist – The scientific method, the role of assumptions, economic models, positive and normative analysis, value judgments.

“In The News” – Environmental Economics, Appendix – Review of Graphing.

**The gains from trade – is more really better?**

Economists usually agree that specialization and trade is good, primarily because it allows more total production and more consumption. Environmentalists have come to question this – e.g. “industrial food” and the local foods movement

Chapter 3. Interdependence and the Gains from Trade – specialization and trade, production possibilities, opportunities, a parable of a farmer and rancher.

**Essential tools of economics – Supply and Demand**

The model of supply and demand is fundamental to economic analysis. This week we introduce markets, competition, the laws of demand and supply, the demand and supply schedules, and equilibrium. Applications to solar panels, recycled paper, local food.

Chapter 4. The Market Forces of Supply and Demand

**Exam 1 covers Ch1-4****Responding to prices**

The slope of the demand and supply curves reflect how consumers and producers respond to price changes. Economists call this elasticity of demand and elasticity of supply. Applications to energy demand, energy supply, demand for food, and food supply.

Chapter 5. Elasticity and Its Application

### **Unhappy outcomes of market interference**

While markets are not perfect, interfering with market prices can result in unanticipated negative outcomes. Classic lessons from price ceilings and price floors. Applications: price ceilings produce shortages – lines at the gas pump, food shortages in developing countries; price floors produce surpluses – surplus agriculture in developed countries. Lessons in sustainable agriculture.

Chapter 6. Supply, Demand, and Govt Policies

### **Imperfect markets and externalities**

Pollution is what economists call an externality. In the course of producing a good, firms produce pollution too. Because firms are paid to produce goods and may not have to pay for the damage caused by pollution – markets fail and the result is too much pollution. Applications: government regulations, carbon taxes, gasoline taxes.

Chapter 10. Externalities

### **Exam 2 covers Chapters 5, 6 and 10**

### **The role of the public sector**

Many environmental goods are public goods: clean air, clean water, parkland, biological diversity. Public goods benefit everyone but are subject to “free-rider” problems. Frequently there are few incentives for private firms to pursue the production of public goods – thus the government should step in. Applications: how to address the tragedy of the commons? how much is a life worth? Why is the cow not extinct?

Chapter 11. Public Goods and Common Resources

### **Gross Domestic Product – Is more always better?**

GDP measures the nation’s economy. We look at its components, consider “real” vs “nominal”, and question whether GDP is a good measure of well being? Is more always better? Application: International differences in GDP and the quality of life.

Chapter 15. Measuring a Nation’s Income

### **What are the limits to growth? How does productivity differ around the world?**

Productivity is central to economic growth and living standards. We examine why it is important and how it is determined. Applications: Are natural resources a limit to growth? peak oil, health and education, Malthus and population growth.

Chapter 17. Production and Growth

### **Exam 3 covers Chapters 11, 15, and 17**

### **Sustainability and how to value benefits in the future**

The concept of present value is critical to how the market value benefits that come in the future. The pursuit of sustainability implies a desire for undiminished quality of life for future generations. We

introduce interest rates, how they are determined, and how they are used to calculate present value.  
Application: weighing the current costs and future benefits of environmental preservation.

Chapter 18-19. Interest Rates and Present Value

**Final Exam – The final exam is cumulative – it will cover Chs 1-6, 10-11, 15, 17-19**