

**Agricultural, Environmental and Development Economics 597.01
International Studies 597.01**

Spring Quarter 2006

COURSE SYLLABUS

Time: Tuesdays and Thursdays, 4:00 – 6:18 p.m.

Place: 002 Psychology
1835 Neil Avenue

Title: ***Problems and Policies in World Population, Food, and the Environment***

Credit hours: 05

Instructor: Professor Claudio **Gonzalez**-Vega
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Teaching

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Monday, 3:30 – 4:30 p.m.
Wednesday, 10:00 – 11:00 a.m.

Capstone Experience

Goals/Rationale:

Thematic upper-division course, drawing upon multiple disciplines, it enriches the students' experiences of the contemporary world.

Learning Objectives:

1. After the course, the students synthesize and apply knowledge from diverse disciplines to contemporary issues.
2. The students write about or conduct research on the contemporary world.

Overall Objectives:

The objectives of the course are:

- (i) to encourage the students to appreciate the **nature** and **extent** of the world's population, food, and environmental **problems**,
- (ii) to provide the students with basic interdisciplinary **tools** that would help them understand better the causes and consequences of these problems, and
- (iii) to alert the students about the challenges involved in the design and evaluation of the appropriate **policies** to address these problems, especially in developing countries and in nations in transition from central planning to a market economy.

The **interrelationships** among these three sets of complex problems and the urgency of rigorous criteria in the **evaluation** of alternative policy options are highlighted in the course.

Contents:

The course combines information from **theory**, **data**, and policy **experience**. In particular, the course addresses **population** growth and the challenges it poses –those of providing everyone in a particular society with an adequate **diet** while simultaneously conserving the **natural resources** on which agriculture and other economic activities depend. To accomplish this, the course examines key concepts from demography, the economic analysis of food markets, the relationships between development strategies, poverty, human fertility, and food security, and the political challenges of protecting the environment to conserve resources for the future generations.

The demographic, food availability, and environmental circumstances found in any particular region or country can be traced, in turn, to specific choices, policies and programs. The course examines these issues from a **choice perspective** and it evaluates policies and programs that influence the extent of these problems through choices and **human behavior**.

Since population has been increasing more rapidly in **poor** developing countries than anywhere else, special attention is paid to the prospects for environmentally sound agricultural development in Africa, Asia, and Latin America. The problems arising as a **transition** is made from communism to a market economy in places like Eastern Europe and Central Asia are also examined, since agricultural development has lagged, environmental deterioration has been pronounced or both have occurred in many of the nations experiencing this transition.

Format:

Lectures, including active **participation** in class discussion, as well as videos and other uses of media. The material presented in class constitutes the **core** of the course and active **note taking** is strongly encouraged. The students should interact with classmates and check with the GTAs about the quality of their notes. The GTAs are available for further clarification of class materials and course requirements.

Grading:

Grades are based on the following elements:

1.	Attendance and active class participation	10
2.	First homework	5
3.	First mid-term	22
4.	Second homework	5
5.	Paper outline	4
6.	Final paper	32
7.	Second mid-term	22
	Total	100

Regular class **attendance** is extremely critical in this course, as many relevant materials presented in class are **not available** elsewhere. Participation in asking and answering questions is appreciated and it enriches the discussion. Mid-term exam questions are heavily based on classroom discussion. Also, **instructions** about the paper are regularly offered in class. Specific details about strategies for writing the paper may not be available elsewhere. Students who miss a particular class are responsible for obtaining the material and all relevant information from classmates and other sources.

Attendance is regularly and randomly checked, by calling the roll at various times, including twice during the same class session. **Two points** will be deducted for every absence not excused and one point for every tardiness, up to 10 points. Any student who has been absent with an excuse (*e.g.*, note from a medical clinic, obituary notice for a relative who has passed away or the like) will not have the grade lowered. It is the student's own duty, however, to make arrangements with classmates in order to be informed about progress in class and about catching up with their class notes. **Announcements in class** about dates, changes in plans, additional requirements, and instructions for the paper are a complement to this syllabus and are **equally binding**. It is the student's responsibility to keep track of these announcements.

The **first homework** assignment will address computational problems on **population** growth. The students will be required to **compute** several demographic magnitudes about a fictional country, to graph the indicators (using Excel), and to interpret the results. Detailed instructions will be offered in class and the TAs will offer additional assistance.

The **second homework** assignment will address computational issues related to the **demand and supply of food**. The students will be asked to compute average geometric annual rates of growth of demand and supply and to interpret the results, by examining the determinants of these rates of growth. Detailed instructions will be offered in class.

The homework assignments will help the students in the **preparation** of the term paper, by showing the types of information, computations, and analysis that are expected in the paper. It is expected that the **same** types of computations will be shown in the paper for the country selected for analysis.

The homework assignments must be submitted at the beginning of the class on the day they are due. Please, pay attention in class for possible changes of **due dates**.

The **first midterm** exam covers the population and the food sections of the course, up to the material covered in class during the last session before the exam date.

The **second midterm** exam covers issues about economic development and policies and strategies for economic growth, poverty, and the environment as well as the integrating section of the course. It focuses on materials discussed in class after the first midterm, but not exclusively. It will be taken on the date of the final exam, according to the University calendar.

The **outline** assignment will serve as the initial **preparation** for the writing assignment. It should include a brief (half-a-page) summary of why the country selected is a useful case study, what are the main issues that the writer expects to address, and what references are available to complete the task. It should list the important parts of the paper and the main issues to be discussed. The outline should not be more than two pages.

The outline of the potential final paper will allow the TAs to check if the student's plan for the paper is complete. The students are encouraged to have a good conversation with the relevant TA about their papers. Feedback on this assignment will help the students address the final challenge of writing the paper.

The **writing assignment** (term paper) requires a **problem statement** about population and food, with implications about the environment. It must refer to the country selected for analysis, which must be chosen from a **short list** of eligible countries. There are no exceptions and the list of countries will be posted in the course's website. These countries will be selected for this quarter's course on the basis of the availability of data and the appropriateness of the analysis of relevant population, food and environmental issues for this country. It is expected that the list of eligible countries will change each year, to reduce opportunities for plagiarism, which will not be tolerated.

A typical paper has a **length** of 10-12 pages followed by graphs and tables. Support of the arguments presented in the paper will require **data analysis** of key population, food demand and supply, environment, and economic development variables, in a particular developing or transition economy, followed by an **evaluation** of policies and recommendations. As indicated, the **homework assignments** will prepare the student for the **computational** portions of the term paper. One assignment addresses relevant computational issues about population growth. The other assignment addresses computational issues about the supply and demand of food in the particular country.

The students are expected to address these same questions in their papers and use the specific concepts and **methods** presented in class. Students will be required to use specific **data sources** for some of the computations that must be included in the paper. These data sources will be **announced in class**.

The computations must be explicitly presented in the paper, and the students are expected to cover specific **time periods** with their analysis. These instructions will be announced in detail as the relevant portions of the course are covered. In general, the specific content of the paper will be **discussed in class** throughout the quarter.

The students are expected to seriously consider the suggestions offered in class and to follow the specific instructions presented during class time.

Homework assignments and the final paper must be submitted at the beginning of the class session on the day they are due. **Late** homework assignments and final papers will be heavily **penalized** and are highly discouraged. On the homework and outline assignments, one out of five/four points will be deducted for each day the assignment is late. On the final writing assignment, 20 out of 100 points will be deducted for each day the paper is late. Term papers will not be received after **June 8**.

Midterms must be taken on the dates indicated below, unless a very serious excuse is presented and documented. The instructor will assign a new date in the case of the first mid-term. The instructor will assign an incomplete, as a grade, to be removed during the following quarter, if the term paper and second midterm exam are not completed within the dates below. No points (0) will be awarded if the excuse does not represent a major and substantial impediment to taking the exam or submit the term paper.

Due Dates:

First Problem Set	April 25 (Tuesday)
Second Problem Set	May 16 (Tuesday)
First Midterm	May 18 (Thursday)
Outline and Bibliography	May 25 (Thursday)
Writing Assignment	June 6 (Tuesday)
Second Midterm	June 6 (Tuesday, 3:30-5:18)

Feature Movie

The students will be asked to attend the feature movie **CARIBE** in the evening of Wednesday, **April 12**. There will be a discussion of the movie with a co-producer during the class of April 13.

Disabilities:

Students with disabilities, please see the instructor right at the beginning of the quarter for proper arrangements. Similar advanced notice is required from students who cannot take the midterm at the appropriate time.

Academic

Misconduct: Academic misconduct of any kind (e.g., plagiarism, cheating, and copying papers from other students, the internet or other sources) **will not be tolerated.**

Copying someone else's answers to midterm exams constitutes academic misconduct. Failure to **cite**, in the text of the paper, the bibliographic sources for materials used in the writing assignment is also academic misconduct. Appropriate **citations** and references are required for all materials used in papers that are not the student's **own** work.

Faculty Rule 3335-5-54 will be followed in cases of suspected academic misconduct: "*Each instructor shall **report** to the Committee on Academic Misconduct all instances of what he or she believes may be academic misconduct.*" Instances of misconduct are penalized. In the past, students have failed to graduate because of this.

Students can work together, however, in the preparation of homework assignments, but each assignment must be turned in individually.

Readings**Web page:**

The syllabus, instructions, short list of countries eligible for the term paper, values of the income elasticity of the demand for food, homework assignments, references and other materials will be available at the course's webpage, for the Spring Quarter, at:

<http://aede.osu.edu/class/aede597.01/gonzalez/>

**Bibliographic
References:**

As a companion to the material presented in class (note: this is a valuable **complement**, but it is **not a substitute** for the course materials), we recommend several chapters of the forthcoming **book**:

1. Douglas Southgate, Douglas H. Graham and Luther Tweeten, *The Global Food Economy*, Basil Blackwell, forthcoming 2006.

The relevant chapters of the book will be available in the course's website, for the students to download. A printed copy of these readings can be obtained at SBX, from Zip Publishing.

For students who have an exceptional interest in the course's content, the following two books would be a good **additional** reference.

2. Phillips Foster and Howard D. Leathers, *The World Food Problem*, Boulder, CO: Lynn Rienner Publishers, second edition, 1999.
3. Theodore Panayotou. *Green Markets: The Economics of Sustainable Development*, ICS Press, San Francisco, 1993.

Topics by Weeks

Week 1 Introduction to Population, Food, and the Environment

- Course objectives and procedures
- Human behavior, choices and policies
- Matching rule in optimum policies
- Interdependence and global externalities
- Predicting the future
- Models
- Limits to growth (pessimist)
- Technological change (optimist)

Movies: *Interdependence in the World Economy/USAID*

Reading Assignments (on closed reserve at the Main Library).

1. Tom Tietenberg, *Vision of the Future*, *Environmental and Natural Resource Economics*, pp. 1-11, Glenview, IL: Scott, Foresman.
2. D. Gale Johnson, "Population, Food and Knowledge," *American Economic Review*, Vol. 90, No. 1, 2000, pp. 1-14. (also on website)
3. Donella H. Meadows *et al.*, *The Limits to Growth*, New York: Universe Books, 1972. (scan)
4. Southgate, Graham and Tweeten, Chap. 1, "Introduction", website.

Weeks 2-3 Dimensions of the World's Population Problems

- demographic variables and processes
- overview of world population dynamics over history
- downturn in growth rates in early 1970s
- demographic transition and its determinants
- population pyramids

- demographic momentum
- why are birth rates so high?
- special problems in low-income countries
- population, economic growth, and the environment
- explanations
 - Malthus
 - Classical and neoclassical economists
 - Natural scientists
- what have we learned since Malthus?
- role of prices and markets

Reading Assignments (on closed reserve at the Main Library)

1. Thomas Malthus, An Essay on the Principle of Population (scan).
2. **Video:** "World Population"

Weeks 4-5 World Food Problems: Demand

- Nature of the Food Problem
- Rome Conference (1974)
- Purposes and costs of drives for self-sufficiency
- Problem of lack of purchasing power
- Food Security and poverty
- Economic development and food
- International trade and food
- Comparative advantages
 - Food Demand considerations
 - Population growth
 - Income effects
 - Price effects
 - Product substitution and changes in diets
 - Food aid
 - Conflict between producer and consumer interests
 - Finding the right price for food
 - Phases of supply and demand balance and economic growth
 - Computation of the rate of growth of demand

Reading Assignments (on closed reserve at the Main Library)

1. Foster and Leathers, Chapters 2 through 6, 8 and 9.
2. Southgate, Graham, and Tweeten, Chap. 2, The Demand Side: How Population Growth and Higher Incomes Affect Food Consumption.

Weeks 6-7 World Food Problems: Supply

Food Supply considerations

- Overview of world food problems, producing regions
- Climate and soils
- Computation of the rate of growth of supply
- Extensification and intensification
- Market equilibrium, autarky and food trade

Reading Assignments (on closed reserve at the Main Library)

1. Southgate, Graham and Tweeten, Chap. 4, Aligning the Consumption and Production of Food over Time.
2. Foster and Leathers, Chaps. 11, 12, 17, 18, 19 and 20.
3. Southgate, Graham and Tweeten, Chap. 3, The Supply Side: Agricultural Production and its Determinants.

****** First Midterm Exam (May 18) ********Week 8 Developing Country Policy Environments**

- Food, agriculture, and economic development
- Strategies of economic development
- The relative importance of agriculture
- Fragmentation
- Traditional technology
 - Schultz's hypothesis
 - Productivity of labor and market integration
- Policy biases against agriculture: high-income and low-income countries
- Import substitution industrialization
- Effect of food aid on producers
- The green revolution
- Bio-technology
- Key regional features and stylized facts
 - Sub-Saharan Africa
 - East, Southeast, and South Asia
 - Latin America
 - Eastern Europe and Former Soviet Union

Video: *Green Revolution in Ghana*

Reading Assignments (on closed reserve at the Main Library)

1. T. W. Schultz, Transforming Traditional Agriculture. Chapter 3, "The Allocative Efficiency of Traditional Agriculture" (scan), pp. 36-52.
2. Southgate, Graham and Tweeten, Chap. 6, Globalization and Agriculture.
3. Southgate, Graham and Tweeten, Chap. 7, Agriculture and Economic Development.
4. Southgate, Graham and Tweeten, Chap. 9, Regional Analysis of Economic Growth: A worldwide synopsis for developing country regions.

Week 9 The Environment and Issues Related to Population and Food

Sustainable Development

- Bruntland Commission
- ecosystems
- economic sustainability: choices
- Conflicts of interest
- Conservation
- Renewable and non-renewable resources

Natural Resources/Environment

- stock vs. flow resources
- thresholds
- carrying capacity, safe minimum standard
- technological change, population growth, and social institutions

Environmental Economics Concepts

- inter-temporal choices
 - discounting
 - inter-generational equity
- property rights/entitlements
- private vs. social costs - externalities
- marginal social product
- market failure
- policy failure and rent-seeking

Contemporary Environmental Issues, Policy Options

- deforestation
- soil erosion
- endangered species
- global warming
- water quantity and quality
- policy options

Video: "Our Threatened Heritage"

Video: "Trees of Hope"

Reading Assignments (on closed reserve at the Main Library)

1. Theodore Panayotou, Green Markets: The Economics of Sustainable Development. Chapters 1, 2 and 3.
2. Dixon, John A. and Fallon, Louise A. "The Concept of Sustainability: Origins, Extensions, and Usefulness for Policy," Society and Natural Resources, Vol. 2, 1989, pp. 73-84.
3. Southgate, Graham, and Tweeten, Chap. 5. Agriculture and the Environment.

Week 10 Integration and Summing Up
-main points of interdependence
-general policy recommendations
-policy implementation

Reading Assignments (on closed reserve at the Main Library)

1. Panayotou, Green Markets: The Economics of Sustainable Development. Chapter 4. (scan)

2nd Midterm Exam (June 6).