

ECON 241
Economic Growth
Fall 2019

Professor: *Joachim Hubmer*, PCPE 504, email: jhubmer@sas.upenn.edu

Office Hours: Tuesday 4.00-5.00pm, Thursday 9.15-10.15am

Lecture Time and Location: Tuesday, Thursday 10.30am-12.00pm, PCPE 101

Teaching Assistant: Coby Wittman, email: ywittman@sas.upenn.edu

Office Hours: Wednesday 12.30-2.30pm, PCPE 500

Important: When you have a question/problem regarding the class material or grading, please contact your TA first!

Textbook: Charles I. Jones and Dietrich Vollrath. Introduction to Economic Growth. Third Edition. W.W. Norton & Company. Both lecture slides (Canvas) and the corresponding textbook chapters are required readings.

Course Description: The process of economic growth and the sources of differences in economic performance across nations (and within) are some of the most interesting, important, and challenging areas in modern social science. Why are some countries richer than others? How did modern economic growth start? What can governments do to foster sustainable economic growth? The primary purpose of this course is to introduce undergraduate students to these major issues, and to the theoretical tools necessary for studying them. The course therefore strives to provide students with a solid background in dynamic economic analysis, as well as empirical examples and data analysis. We will cover models at an abstract and advanced level. You must have the degree of mathematical maturity associated with the concepts of sets, functions, derivatives, integrals, optimization, and other material covered in one year of calculus. Some basic knowledge of regression analysis is also strongly recommended. Strict prerequisites are ECON 101, 102, 103; MATH 104, 114, or 115.

My first goal, however, is that you and I have fun with the course. Economics, in particular economic growth, is exciting and I hope that you will share my excitement by being a lively crowd that actively participates in class, asks a lot of questions, and brings in diverse viewpoints. I will do my best to make the lectures informative and entertaining. I expect from you that you will do your best to attend and participate in classes.

Grading: There will be overall 3 homework assignments, 3 midterms and 1 final exam. Your final grade will be based on your scores from the final exam, two of the three midterms (the two midterms with the highest grades), and two of the three homework assignments (again the two assignments with the highest grades). Note that if you do well enough in your first 2 midterms, you can avoid the third midterm but CANNOT avoid the final exam. They will count toward the grade as follows.

2 Highest Assignments (total) 10%

1st Highest Midterm 25%

2nd Highest Midterm 25%

Final Exam 40%

Lowest Midterm 0%

Lowest Homework Assignment 0%

Following departmental guidelines, about 30-40% of students will receive As, 50-60% Bs, and 0-10% Cs.

No Make-Up Exam: There will be NO make-up test if you have to miss any of the midterms unless you miss **2 or more** midterms due to a valid excuse, as defined by departmental policies: <https://economics.sas.upenn.edu/undergraduate/course-information/course-policies>.

If you miss a midterm (with or without a valid excuse), I will count it as your lowest midterm and give 0 weight as the above table indicates. In this case, your final grade will be based on the other two midterms that you attended (25% weight to each), final exam (40%) and the 2 assignments (5% each).

Note that each midterm grade will be normalized by the median score of that particular exam (to ensure that missing a midterm with a valid excuse does not disadvantage you).

Regrading: If you have complaints about the grading, do the following. Within 1 week after the test was returned hand back to me your graded test and a written statement explaining your complaint (i.e. which question you think was graded wrongly and why you think it was graded wrongly). I will then regrade the whole assignment. Please note that there is no guarantee that, after the test has been regraded, your score will be higher than before and it may be lower. A week after the test has been returned the scores cannot be changed anymore and no further complaints will be accepted.

Exam dates: Homework due dates and exam dates are indicated below. Please review the dates carefully. Completed homeworks are to be handed in **in the beginning of the class** on the day they are due.

| <u>Assignment</u> | <u>Dates</u> |
|-------------------|----------------------------------|
| Assignment #1 | Sept 24 (Tue) |
| Midterm Exam #1 | Sept 26 (Thu) |
| Assignment #2 | Oct 22 (Tue) |
| Midterm Exam #2 | Oct 24 (Thu) |
| Assignment #3 | Nov 19 (Tue) |
| Midterm Exam #3 | Nov 21 (Thu) |
| Final Exam | Dec 12 (Thu), 9.00 am – 11.00 am |

If you have a conflict with any of these dates (including religious observance) please let me know before September 6th. After that date I will NOT accommodate personal issues. Travel plans are not an acceptable reason for rescheduling.

Content of the Course: This is an outline of the topics that I intend to cover. The list of topics may be revised during the course as I may not be able to cover all the material:

- Introduction and Growth Facts
- Solow Model (Exogenous Growth)
- Growth Accounting
- Human Capital
- Convergence
- World Income Distribution
- Economics of Ideas
- Endogenous Growth: Romer
- Endogenous Growth: Schumpeter
- Technology Diffusion and Development
- Institutions and Economic Growth
- Population Growth
- Natural Resources

Class Schedule: This schedule is tentative and subject to change depending on progress.

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|-----|-------|---|
| Tue | 8/27 | L1: Introduction and Facts |
| Thu | 8/29 | L2: Introduction and Facts |
| Tue | 9/3 | L3: Solow Model |
| Thu | 9/5 | L4: Solow Model |
| Tue | 9/10 | L5: Growth Accounting |
| Thu | 9/12 | L6: Growth Accounting / Human Capital |
| Tue | 9/17 | L7: Human Capital |
| Thu | 9/19 | L8: Convergence |
| Tue | 9/24 | L9: World Income Distribution, HW 1 due |
| Thu | 9/26 | Midterm I |
| Tue | 10/1 | L10: Ideas |
| Thu | 10/3 | L11: Romer Model |
| Tue | 10/8 | L12: Romer Model |
| Thu | 10/10 | No class, Fall Break |
| Tue | 10/15 | L13: Schumpeterian Growth |
| Thu | 10/17 | L14: Schumpeterian Growth |
| Tue | 10/22 | L15: Development, HW II due |
| Thu | 10/24 | Midterm II |
| Tue | 10/29 | L16: Development |
| Thu | 10/31 | L17: Institutions |
| Tue | 11/5 | L18: Institutions |
| Thu | 11/7 | L19: Population Growth |
| Tue | 11/12 | L20: Population Growth |
| Thu | 11/14 | L21: Population Growth |
| Tue | 11/19 | L22: Natural Resources, HW III due |
| Thu | 11/21 | Midterm III |
| Tue | 11/26 | L23: Natural Resources |
| Thu | 11/28 | No class, Thanksgiving |
| Tue | 12/3 | L24: Natural Resources |
| Thu | 12/5 | L25: Review |