Course Description

This course examines macroeconomic aspects of economic growth and development. Microeconomic aspects of growth and development are covered in the companion course, ECG740. The two courses together constitute a field sequence in Economic Development. This course also can be paired with ECG784 or ECG785 to make a field sequence in macroeconomics.

The semester is devoted to endogenous growth models and their application to economic development. Topics to be covered are properties and extensions of the classical growth theories; one-sector and two-sector endogenous growth models; variety-expansion and quality-ladder theories of research and development; second generation models; trade and growth; diffusion of technology; transition from underdeveloped to developed economy. There is no text for the course, but there will be several chapters from Economic Growth, 2nd Edition by Robert J. Barro and Xavier Sala-i-Martin, which you probably will want to buy. We also will discuss several journal articles and working papers. By the end of the semester, you should be familiar with the basic issues in macroeconomic growth and development, and you should be prepared to read more advanced literature on your own.

Conduct of the Course

The course will be conducted as a workshop. The students will be responsible for all the presentations after the first two or three weeks. The course schedule that follows is divided into sections, denoted by dotted lines running part way across the page. I will present the first section of material to give everyone time to get their first assignment in order. After that, the students will present most of the material. Readings will be assigned to specific students at least two weeks before we are scheduled to discuss them in class. Assignment is mostly done by the students volunteering for the readings they would like to present, although I will make sure that everyone is assigned a variety of readings (theory, evidence; easy, hard; etc.) over the semester. The designated student will be responsible for presenting a coherent explanation of the assigned material, how it fits into the rest of the material we have studied, and so on. At the beginning of each presentation, the student making the presentation must distribute to the rest of the class copies of his lecture notes. Typed notes are preferable but legible handwritten notes are sufficient. Distributing the presentation notes makes it easier for everyone else to concentrate on what is being said and to engage in useful discussion.

Most assignments are short enough that they can be covered in no more than one class session. In several cases, they are considerably shorter than that, and on those days we will have more than one presentation. In making presentations, keep in mind that everyone already has read the material. Consequently, it is unnecessary to cover details of derivations except when doing so is required for understanding something important. The points to emphasize are the ideas motivating the reading, the important results, implications for public policy, and possibilities for future research. In short, you should present a summary that interprets and discusses the material, not a detailed derivation of results. In general, skip the derivations except when the derivation itself is an interesting contribution.

Discussions are to be treated as opportunities to help each other learn and should be conducted in a cooperative rather than competitive manner. If you think another student has said something wrong, be sure to say
so. It is only by discussing our differences that we will progress as much as possible. However, present your questions and criticisms in a polite and collegial manner.

For this class to succeed, it is absolutely vital that you read the material to be discussed before we start discussing it. Discussing something you have not read and do not understand does not work. We leave that kind of behavior to the politicians.

There are several homework assignments. They are extensions of some of the readings. Answers to the homework assignments are to be written and handed in. They are due one week after we finish discussing the article or book chapter to which they pertain. The homework assignments mostly ask you to derive relations stated in the reading material. Doing the assignments will give you a lot of practice in using the relevant economic concepts and mathematical methods, leading to mastery of the subject matter. The assignments give you a taste of the kind of work you will be doing on your dissertation, no matter what field of economics you choose to write in. We will discuss the answers in class. I encourage you to work together on the homework assignments.

The workshop approach use here aims to have you learn a body of material really well and learn to discuss it at a professional level. This approach progresses more slowly than the traditional lecture format and does not permit coverage of as much material, but it encourages you to obtain a fuller understanding and more complete mastery of the material that we do cover. Breadth is sacrificed for depth. I have used this approach many times, and it has worked well. Be aware that it does take considerably more work on your part than the usual approach where the professor does all the lecturing. The benefit is that you will master the methods involved.

Grading

What a dull subject. Your grade will depend on the quality of the presentations you give in class, your homework answers, and your general class participation.

There is only one exam in the course, a final exam consisting of a pot luck dinner at my house. Everyone already has an A on the exam, which has a weight of 0% in your course grade.
**Reading Schedule**

B&S refers to Barro and Sala-i-Martin’s book, *Economic Growth, 2nd Edition*. An asterisk (*) indicates an empirical paper. Papers without asterisks are primarily theoretical. Articles and chapters will be assigned so as to even out as much as possible each student's responsibility for presenting both theoretical and empirical readings.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Readings</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>Foundations of endogenous growth</td>
<td>B&amp;S 1.3, 4.1-4.3, 4.5-4.6.</td>
<td>Seater</td>
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<tr>
<td>Two-sector models</td>
<td>B&amp;S 5.1-5.2.1, 5.3, plus Appendix 5A</td>
<td>Seater</td>
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<td><strong>Homework:</strong> Page 270 of B&amp;S. Prove that constant returns in either sector requires constant returns in the other. Use this result to show that B&amp;S are wrong in asserting in the fourth paragraph that eq.(5.51) holds for any values of $\alpha_1$ and $\alpha_2$. [Theorem: Even the big boys make mistakes. Proof: You just provided it. Other examples of this theorem appear later in the semester.]</td>
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<tr>
<td>R&amp;D: Variety expansion models</td>
<td>B&amp;S 6</td>
<td>2 Students</td>
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<td><strong>Homework:</strong> B&amp;S Questions 6.2, 6.4</td>
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<tr>
<td>R&amp;D: Quality ladder models</td>
<td>B&amp;S 7</td>
<td>2 Students</td>
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<td><strong>Homework:</strong> B&amp;S Question 7.3</td>
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<td>Scale Effects: Evidence</td>
<td>*Backus, Kehoe, &amp; Kehoe: JET 1992</td>
<td>Student</td>
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<td>Second-Generation Models of Endogenous Growth</td>
<td>Jones: JPE 1995</td>
<td>Student</td>
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<td>Read all the paper except read only the first two paragraphs of section V because the rest is worthless.</td>
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<tr>
<td>Scale Effects: Evidence</td>
<td>Howitt: JPE 1999</td>
<td>Student</td>
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<td><strong>Homework:</strong> (Part A) Derive the following: (i) the unnumbered equation between equations (9) and (10), and (ii) equation (10). <strong>Note:</strong> In doing this and all other derivations, use only the material that precedes the results you are deriving. <strong>(Part B)</strong> Why do linear utility and a constant rate of time preference guarantee a constant interest rate (p.722)? Derive the answer mathematically and explain it economically. <strong>(Part C)</strong> Footnote 8 says that positive population growth is necessary for economic growth. That assertion is wrong. Why? What is the correct result when population growth is zero?</td>
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<td>Semi-Endogenous vs. Endogenous Growth</td>
<td>Peretto: JEG 1998</td>
<td>Student</td>
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<td><strong>Homework:</strong> (Part A) Derive equations (8), (13), and (14). <strong>(Part B)</strong> Equation (8) holds only in the steady state. What is the equation for $g_c$ that holds at all times? Explain what element of growth each of the four terms captures.</td>
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<td>*Laincz &amp; Peretto: JEG 2006</td>
<td>Student</td>
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More Second-Generation Models

Peretto & Connolly: JEG 2007

**Homework:** Derive the unnumbered equation for \( N_{dot}/N \) at the bottom of p.337 and equation (14) on p.338.

Huang & Ji: Typescript 2012

Ji: Typescript 2012

Policy Issues in Second-Generation Models

Peretto: JET 2007

**Homework:** (Part A) Write the Hamiltonian for the intermediate goods firm. (Part B) Derive the unnumbered equation before eq.(14).

* Dawson & Seater: Typescript 2010

Trade & Growth: Theory

Ji & Seater: Typescript 2012

Kane: Typescript, 2011.

Trade & Growth: Evidence

* Wacziarg & Welch: NBER 2003

Diffusion of Technology

B&S 8

**Homework:** B&S Question 8.2

* Coe & Helpman: EER 1995

* Coe, Helpman, & Hoffmaister: Typescript

Development

(*Pritchett: JEP 1997)

(*Easterlin: JEP 2000)

B&S 9.2-9.2.2

**Homework:** B&S Question 9.4

* Klenow & Rodriguez-Clare: QJE 1999

Hansen & Prescott: AER 2002

**Homework:** (Part A) In proving Proposition 1, Hansen & Prescott argue that profit in the Malthusian sector is positive. That is incorrect because the Malthusian sector is competitive with a HOD1 production function. Provide a correct proof. (Part B) Derive inequality (8).

Peretto & Seater: Typescript 2012

Sturgill: JMacro forthcoming

Galor & Weil: AER 2000

2 Students
Reading List


Kane, R. “Shipping the Good Intermediates Out, Eventually.” Typescript 2012.


