ECON 6201-090: Advanced Macroeconomic Theory
UNC Charlotte, Department of Economics, Fall 2017

1 Contact Information

Instructor: Dr. Paul Gaggl
Office: Friday 219A
Office Hours: W 2:30 – 4:30 pm
Email: pgaggl@uncc.edu

Course Website: Canvas

2 Important Dates & Times

Class Meetings: W 6:30 - 9:15 pm Friday 107

Exams

| Midterm 1:       | September 13          | in class |
| Midterm 2:      | October 11           | in class |
| Midterm 3:      | November 8-15        | take home |
| Final Exam:     | December 6-13        | take home |

Tentative Due Dates & Deadlines

| Homework 1     | August 30            | due at beginning of class |
| Homework 2     | September 6          | due at beginning of class |
| Choose Paper   | September 20         | email |
| Homework 3     | September 27         | due at beginning of class |
| Homework 4     | October 4            | due at beginning of class |
| First Paper Draft | October 18       | Canvas upload |
| Homework 5     | November 1           | Canvas upload |
| Homework 6     | November 29          | in class |
| Peer Review    | November 29          | Canvas Upload |
| Presentations  | December 6           | Canvas Upload |
| Final Draft    | December 6           | Canvas Upload |

3 General Information

3.1 Course Description

ECON 6201: The course is an introduction to graduate level macroeconomics. We will study important topics including long-run economic growth, short-run fluctuations in output and employment (business cycles), and issues in macroeconomic policy (fiscal and monetary).

It is impossible to cover all important macroeconomic topics in one semester so, naturally, the course is selective. However, while the set of economic topics explicitly covered is selective, we
will utilize a general conceptual framework, which is the core of virtually all modern macroeconomic analyses, irrespective of the particular topic at hand. This general framework is based on explicit dynamic equilibrium models in which the relevant economic agents (such as households or firms) solve dynamic optimization problems. The methods we will study have mainly been developed over the past 30 years and reflect the work for which economists like Robert Solow (1987), Robert Lucas (1994), Finn Kydland and Edward Prescott (2004), or Thomas Sargent (2011) have received Nobel prizes.

3.2 Prerequisites
The prerequisites for the course are admission to the graduate program as well as a sound understanding of multivariate calculus and basic statistics. We will extensively use constrained optimization techniques as well as basic statistical concepts such as expectations, variances, and covariances. I will make supplementary (optional) readings to review these materials available on the class website (Canvas).

In my experience, many students tend to struggle a little with the mathematical tools (not the actual economic intuition) at the beginning of the class. To preempt these potential struggles, I highly recommend you review the basic mathematical tools listed below as soon as possible.

1. Standard notation for multivariate functions
2. Partial and total derivatives of multivariate functions
3. Constrained optimization of multivariate functions, especially the Lagrange and Kuhn-Tucker theorems
4. Solution methods for first order difference and differential equations

I provide some review materials on Canvas and the following textbook is also a good resource for this review:


3.3 Course Objectives
There are four fundamental goals we will set for ourselves:

1. The most basic objective of this course is to trace through some seminal advances in macroeconomics over the past 30 years.
2. Another central objective is to introduce the details of fundamental (often technical) methods to analyze macroeconomic problems at the intellectual level employed in scientific journal articles (as opposed to newspaper articles and undergraduate textbooks). To quote Robert Lucas, Jr. (Nobel Laureate, 1994): “Macroeconomics receives a great deal of attention in the newspapers, but this is not the level at which progress is made or continuity is to be discovered.” For practical purposes, this means we will often need to “roll up our sleeves” and grind through sometimes tedious math in order to reach seemingly simple and intuitive conclusions.
3. In modern macroeconomics, theory and empirics go hand in hand. It is paramount for any sensible economic analysis to have a clear idea of the mechanisms at work (the theory) and it is equally important to check whether the outcomes predicted by the theory (qualitative and/or quantitative) are consistent with what we observe in the data (the real world). Luckily, we live in a world in which most aggregate data (relevant for macroeconomic questions) are usually only a few mouse clicks away. We will therefore spend a significant amount of time working with data in order to evaluate our theories against the data. In particular, I will introduce the students to the software packages Stata and Matlab throughout this class.

4. Finally, an absolutely necessary condition to be a successful economist (not just a successful macroeconomist) is effective communication skills, both written and spoken. It is never too early to begin (or continue) developing such skills. I will insist that all assignments/projects be written as if they were small “papers,” in complete English sentences, supplemented by derivations, with a clear motivation of the problem and the employed methods, as well as presentation and discussion of results, etc. The required in-class presentation and associated short paper also foster this objective.

3.4 Course Resources
There is no required textbook for this class. All class material, such as required and optional readings, assignments, answer keys, handouts, etc., will be made available on the class website (Canvas) as we go along. While the class does not require any textbook, here are a few textbooks that I recommend for your reference:


There is no need for you to buy any of these texts but if you choose to do so I recommend buying a used version of the latest edition online. The first two are very general while 3-6 have slightly more focus on particular topics.
4 Course Evaluation

Your overall grade for this course will be based on 3 components (plus one opportunity for bonus credit), described in detail below. The different components are weighted in the following way:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>10%</td>
</tr>
<tr>
<td>6 assignments worth 1.66% each</td>
<td></td>
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<tr>
<td>Exams</td>
<td>80%</td>
</tr>
<tr>
<td>20% Midterm 1</td>
<td></td>
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<tr>
<td>20% Midterm 2</td>
<td></td>
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<tr>
<td>20% Midterm 3 (take home, see details below)</td>
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<tr>
<td>20% Final (take home, see details below)</td>
<td></td>
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<tr>
<td>Presentation &amp; Paper</td>
<td>10%</td>
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<tr>
<td>3.33% First Draft &amp; Peer Review</td>
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<tr>
<td>3.33% Presentation</td>
<td></td>
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<tr>
<td>3.33% Paper (due on the final day of class)</td>
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<tr>
<td>Economics Seminar Attendance</td>
<td>1 pp</td>
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4.1 Homework

While I encourage you to work in groups, each student must hand in his/her own copy of the answers to receive any credit. If you don’t hand in the homework during or any time before class on the due date you will receive zero credit for it without exception.

**Homework Grading Policy:** I do not check the content of the assignments. The scoring for assignments is as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Effort</th>
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<tbody>
<tr>
<td>100</td>
<td>completed all problems with a serious effort</td>
</tr>
<tr>
<td>50</td>
<td>completed at least 75% of all problems with a serious effort</td>
</tr>
<tr>
<td>0</td>
<td>attempted fewer than half of the problems on the assignment.</td>
</tr>
</tbody>
</table>

What constitutes a “serious effort” is up to my discretion. You will not receive detailed written comments on your homework assignments. However, there will be a detailed answer key for each problem set. The answer keys will provide you with what I consider a good answer to the question asked. Based on my answer keys, it is your responsibility to check what went well and what did not go so well. I encourage you to consult me in office hours if you cannot figure out whether and/or why your answers differ from the ones on the answer key or if you have any other questions about the homework and/or the associated answer key.

4.2 Exams

There will be no makeup exams! If you miss an exam you will receive zero credit on that exam. I may consider re-weighting your scores for the course grade only in case of a documented emergency (e.g. illness, family emergency, etc.). Check your calendar and make sure that you don’t
have any time conflict with the scheduled exam times. All exams are cumulative. That is, I expect that you know how to apply any of the material we have discussed (during class, in required readings, and in homework assignments) prior to the time of the exam.

**Take Home Exams**  Some (possibly all) of the exams may be “take home” exams. That is, I will post the exam questions on the class website (Canvas) and you will have a set amount of time to take the exam **BY YOURSELF**. The following rules apply for this type of exam:

1. You must work on the exam **BY YOURSELF**.

2. You are **NOT TO COMMUNICATE WITH ANYONE EXCEPT ME** about the exam or course material **from the moment the exam becomes available in Canvas until after the exam due date and time**. “Communication” includes (but is not restricted to) email, text messages, forum posts, facebook, etc. If you violate this rule, my best offer in a settlement in accordance with University Policy 407 (The Code of Student Academic Integrity) will be a grade of U in my class.

3. You may use your class notes, any material posted on the class website (Canvas), as well as other published or online materials to assist you in completing the exam. For any computational exercise you may use any computational/statistical software to answer your exam questions but I will only be able to help you with the software that we discuss in class (or to the extent that I am familiar with the software you are using).

4. **In order to complete the exam, you must fill in your name, ID number, and sign the academic integrity statement on the exam cover page. You must attach the signed cover page to your answers.**

5. Take home exams must be uploaded to Canvas as a single PDF with your answers and a zip file with your code. No other forms files will be accepted (e.g. I do not accept MS Word files). I will only grade the content of the PDF file and not your code. Anything that is not in your PDF will not count toward your grade. The supplementary materials in your zip file (your code) is only for me to verify that your code actually produces the results you report in your PDF with the answers.

**4.3 Paper, Peer Review & Presentation**

10% of your course grade will be based on a referee report for one of your peers’ papers, an in-class presentation, and an initial as well as final (revised) draft of your short paper. The paper projects should be attempted in **groups of 4-5** (approximately 10 groups total), and it is **your responsibility to form groups**. The paper consists of a 3–4 page written discussion of an academic article related to the class. I expect quality not quantity! Four pages are the absolute maximum! You may choose any article in the **optional readings** or one of the **additional articles** in the “Student Presentations” section at the end of this syllabus. The articles will be assigned on a “first come first served” basis. Look at the articles (i.e., read their abstracts and introductions, see how complicated the technical parts are). Once you have picked out your favorite paper, please send me an **email by September 20** that contains the following pieces of information: **The names of all group’s members** and the **author, year, and title of the paper you selected**. If the paper has not been claimed by anybody else, I will then officially assign it to you and take it off the list of available papers to pick from.
Paper: A good paper should at least consist of 4 paragraphs/sections devoted to the following subjects:

1. Motivation: What are the authors trying to accomplish with this paper? What is their research question? Why is this question important?

2. Methods: How do the authors tackle their question? Do they write down a model to make theoretic predictions? Do they analyze data? If so, what data are they using? How are they analyzing the data?

3. Findings: What are the authors’ findings?

4. Discussion: What do you think of their paper? Why do you like it? Why don’t you like it? In your opinion, does the paper resolve the question? Should we care? Do you have any concerns with their methods, data, and/or conclusions?

You must hand in your paper via Canvas upload in a single PDF file (no MS Word, or any other word processor files will be accepted) before the posted due date.

First Draft & Peer Review After you hand in your first draft, I will assign each paper to one of your peer groups for review. You will then write a “referee report” for the assigned draft. A good referee report should be between a half page to a page long. When writing your report, keep in mind that you are reviewing your peers’ discussion of the original article, not the original article itself! Your peer review has two objectives: First, you’re trying to help me judge your peers’ paper; and second, you’re trying to help your peers with making their paper better. It should at least address the following subjects:

1. Is the paper clearly written? Is it possible to understand the key points that the original article was making? Why yes, why no? If not, what could the author have done better? If anything, what was unclear?

2. Does your peer make clear what the strengths and weaknesses of the original article are? If not, what could the authors have done better? Where were they not quite clear?

3. Did your peers’ review make you want to read the original article? Why yes? Why no?

4. Were there any spelling, grammar, and/or other language mistakes? If so, please point them out. (You may find this point strange, but every scholarly peer review addresses language. It is very easy to overlook typos, and some scholars are simply not very good at writing. There’s nothing wrong with pointing out “clerical” mistakes. This will only make your peers’ final paper better, and it will make it more enjoyable to read.)

Like your own draft, you must hand in your peer review via Canvas upload in a single PDF file (no MS Word, or any other word processor files will be accepted) before the respective due dates.

Class Presentation: Each group will give a short (10 minute) in-class presentation of the article. It is totally up to the group how they want to do the presentation. It could just be one person presenting the whole thing, you may choose to “tag team”, you may have one person present and another answer questions, etc. That is up to you. I will assign the order in which the papers will
be presented to ensure the “flow of topics”. The final draft of your paper is due at the beginning of our final class and you are expected to incorporate the feedback you get during your presentation as well as your referee report in the final draft.

Like with your paper, a good presentation should consist of at least 4 slides corresponding to these four sections/paragraphs in your paper. Finally, make sure you pay close attention to your peers’ presentations as you will be responsible for the content of these on the final exam. I will post all presentation slides on the class website (Canvas).

Seminar (Bonus Credit): The economics department regularly hosts guest speakers in the Economics Seminar Series. The seminar series provides a great opportunity to see what active research economists are currently working on. If you attend at least one scheduled seminar during the fall semester you will receive one extra percentage point on your overall class score. It is your own responsibility to check the seminar schedule on the Economics Seminar Series webpage. You must sign in with me at the beginning of the seminar to earn the credit (I will ask you to follow up with an email). The extra percentage point will be added to your overall numerical class score (up to a maximum of 100).

5 General Rules

Attendance: Classroom attendance is strongly recommended. We will be covering a substantial amount of material in this course, and you will probably find that the easiest way to keep up (and find out what I think is important) will be to attend class. I expect you to be in class on time and stay for the duration. If you do not plan to attend the entire lecture, please see me in advance or refrain from coming to class.

Communication: Communication with those outside of class while class is in progress is not acceptable. (In other words, turn off all communication devices prior to the start of class.) Students are expected to check their UNC Charlotte e-mail (username@uncc.edu) as well as the class website (Canvas) regularly for correspondence and updates regarding the course.

Regrading Policy: In case you believe there was a clerical mistake (scores added up wrong, etc.), you may simply contact the teaching assistant(s) or me at your convenience. If you believe that you were graded incorrectly on any part of your exam, you must submit a regrade request in writing (together with your exam) to me no later than one week after the exam was handed back. Your request should point out the question(s) where you think you deserve additional credit, along with an explanation. Please note that your entire exam will be reviewed, and your overall exam score may go up or down.

Academic Integrity: Please note that academic misconduct (cheating) will NOT be tolerated. In addition, students have the responsibility to know and observe the requirements of University Policy 407 (The Code of Student Academic Integrity). This code forbids cheating, fabrication or falsification of information, multiple submissions of academic work, plagiarism, abuse of academic materials, and complicity in academic dishonesty. Academic evaluations in this course include a judgment that the student’s work is free from academic dishonesty of any type; and grades in this course therefore should be and will be adversely affected by academic dishonesty. Students who violate the code can be expelled from UNC Charlotte. The normal penalty for a first offense is zero
credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases, the course grade is reduced to U. Copies of the code can be obtained from the Dean of Students Office. Standards of academic integrity will be enforced in this course. Students are expected to report cases of academic dishonesty to the course instructor.

**Statement on Diversity:** The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

### 6 Tentative Course Schedule

Below is a tentative schedule of the topics I plan to cover. However, there is no guarantee that we follow this schedule precisely. We may deviate from this schedule as the course progresses depending on time and student interest. It is your responsibility to keep up with adjustments made throughout the course.

For each topic I list required and optional reading material. All of these resources will be made available on the class website (Canvas). I will teach the material under the assumption that you have read the assigned readings ahead of time.

**Weeks 1-3: Income Differences and Economic Growth**

**Required:**

1. Handouts provided on the class website (Canvas).

**Optional:**

   URL http://ideas.repec.org/a/tpr/restat/v92y2010i4p769-783.html

   URL http://ideas.repec.org/a/tpr/qjecon/v122y2007i2p535-568.html

**Week 4: Midterm Exam 1 (in class)**

**Week 5: Intertemporal Consumption and Dynamic Optimization**

**Required:**

1. Handouts provided on the class website (Canvas).

**Week 6-7: Economic Growth with Endogenous Consumption**

**Required:**

1. Handouts provided on the class website (Canvas).

**Week 8: Midterm Exam 2 (in class)**

**Week 9: Paper - First Draft**

**Weeks 9-12: Models of Business Cycles: Part I - RBC Models**

**Required:**

1. Handouts provided on the class website (Canvas).

**Optional:**

   URL http://ideas.repec.org/a/aea/aecrev/v85y1995i3p492-511.html

   URL http://ideas.repec.org/a/fip/fedmqr/y1992isprp2-12nv.16no.2.html

   URL http://ideas.repec.org/a/ecm/emetrp/v75y2007i3p781-836.html

   URL http://ideas.repec.org/p/nbr/nberwo/12647.html
Week 12-13: Midterm Exam 3 (take home)

Week 13: Business Cycles, Economic Policy, and The Lucas Critique

Required:

1. Handouts provided on the class website (Canvas).


Optional:

   URL http://ideas.repec.org/a/aea/jeclit/v49y2011i3p673-85.html

   URL http://ideas.repec.org/a/oup/qjecon/v126y2011i1p1-50.html

Weeks 14: Sticky Prices, The New Keynesian Model, and Monetary Policy

Required:

1. Handouts provided on the class website (Canvas).

Optional:

   URL http://ideas.repec.org/a/ucp/jpolec/v112y2004i5p947-985.html

   URL http://ideas.repec.org/a/tpr/qjecon/v123y2008i4p1415-1464.html

   URL http://ideas.repec.org/a/jpolec/v113y2005i1p1-45.html

   URL http://ideas.repec.org/a/aea/aejmac/v1y2009i1p242-66.html

   URL http://ideas.repec.org/a/aea/aejmac/v2y2010i2p1-30.html
Week 15: December 6, Student Presentations

Any article listed below may be chosen for your term papers and presentations. All the articles are recent working papers (to give you a sense of what macroeconomists are currently working on) and cover various relevant macro topics and styles of analysis. Carefully read the abstracts and introductions before picking your favorite article.

When selecting your paper, I suggest you proceed as follows:

1. Read the titles and abstract and make a short list of papers that you are interested in
2. Carefully read the introduction and make sure you still like the papers
3. Finally, briefly look over the entire manuscript to make sure you are comfortable with the level of difficulty (match, empirical, etc.). Some articles are more complicated than others and it is up to you to judge whether you feel up to the task!

Note: All references below also include a link to the PDF of the paper. Some of these links are restricted access (e.g., NBER Working Papers) and require that you are on a campus computer (or the school VPN) in order to download them.

Growth and Innovation


Consumption


Labor Markets


Inequality & Heterogeneity


History


URL https://ideas.repec.org/p/ces/ceswps/_6423.html

Development

URL http://www.nber.org/papers/w21087

URL https://ideas.repec.org/p/zbw/cfswop/557.html


Monetary Policy

URL https://ideas.repec.org/p/red/sed017/270.html

URL http://www.nber.org/papers/w20882

Financial Crises

URL http://www.nber.org/papers/w21486

URL http://www.nber.org/papers/w20501

Various Topics

URL http://www.nber.org/papers/w23687

Week 15-16: Final Exam (take home)