ECON 3115-001: Money & Banking
UNC Charlotte, Department of Economics, Fall 2016

1 Contact Information

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Email: ajain23@uncc.edu

Course Website: ECON 3115 Moodle Page (https://moodle2.uncc.edu/course/view.php?id=107597)

2 Important Dates & Times

<table>
<thead>
<tr>
<th>Meetings</th>
<th>Day</th>
<th>Time</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Meetings:</td>
<td>MW</td>
<td>12:30 - 1:30 pm</td>
<td>Friday 132</td>
</tr>
<tr>
<td>Discussion Sections:</td>
<td>F</td>
<td>12:30 - 1:20 pm</td>
<td>Friday 132</td>
</tr>
</tbody>
</table>

Exams:

- Midterm 1: Monday, September 19, 2016 in class
- Midterm 2: Wednesday, October 19, 2016 in class
- Midterm 3: Monday, November 21, 2016 in class
- Final Exam: Wednesday, December 14, 2016 11:00 am – 12:00 pm

3 General Information

Course Description: ECON 3115. This course is an introduction to the economics of financial markets, money, credit, and banking. It is impossible to cover all important aspects of this broad topic in one semester so, naturally, the course is selective. However, while the set of topics explicitly covered is selective, we will utilize a general conceptual framework, which is the core of virtually all modern economic analyses of financial markets, irrespective of the particular topic at hand. This general framework is mostly based on standard economic concepts, such as consumer choice (both under certainty and uncertainty), “opportunity cost”, and “no-arbitrage” arguments.

The course consists of three parts: In parts I and II we will discuss basic economic tools to understand financial markets in general, as well as the role of financial intermediaries and central banks within these markets. In part III, we will then apply these tools to discuss and understand the mechanisms and events that led to the financial crisis of 2007/2008.

I. We will start with discussing why lending markets exist, before focusing on bond pricing, the term structure of interest rates and some key asset markets. Then we will turn our atten-
tion to banks as commercial enterprises and examine the measurement and management of bank risk.

II. We will discuss theoretical models of banks, which highlight the role of uncertainty and asymmetric information in the lending process. Furthermore, we will also study the economics of insurance markets, since banks provide liquidity insurance, and since particular types of insurance contracts were among the key forces that made the financial crisis of 2007/2008 so detrimental to the US and the entire world economy.

III. The final part focuses on central banks, monetary policy, and the most recent financial crisis. In particular, we will discuss the course of events before and during the financial crisis, modern tools of monetary policy, and how some of them were applied in multiple attempts to ward off the detrimental effects of the unfolding financial crisis.

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

1. The most basic objective of this course is to introduce the students to some important aspects in the theory and practice of financial markets, money, credit, and banking. Furthermore, we will then use fairly general economic concepts and tools to thoroughly discuss the buildup and unfolding of the financial crisis of 2007/2008.

2. Another central objective is to illustrate how general economic concepts, such as the optimal consumption/saving decision of an individual, can be employed to study financial markets and evaluate the soundness of economic policy that affects these markets. For example, we will use simple “no-arbitrage” and “opportunity cost” arguments to derive the “market price” for a variety of popular types of assets. While some of you may have seen the pricing formula for some of these assets before (or know where to look it up), the important part here is not the formula for the price, but how we came up with the formula. The key is to understand the general economic concept behind the formula, which can be applied to many more assets than we will explicitly study in class (including ones that haven’t yet been invented).

3. Finally, an absolutely necessary condition to be a successful economist (and college graduate in general) is effective communication skills, both written and spoken. It is never too early to begin (or continue) developing such skills. Therefore, all exams and homework assignments consist of free response, short answer questions only. I expect you to answer these questions in complete English sentences, just as if you were writing a memo to your boss, or a letter to a client.

Course Format: Your learning experience in this class will consist of three elements:

1. Class: I will discuss all relevant topics in class. Everything I discuss or talk about in class may show up on exams.

2. Homework, Practice Problems, and Answer Keys: Homework assignments and practice problems are designed to teach you the application of the general tools and topics that I introduce in class. Since class time is limited, this is where you will see most practical examples of the topics discussed in class. Anything you encounter on homework assignments may also show up on exams.
3. **Discussion Sections:** Discussion sections are scheduled meeting times with your teaching assistant (TA). **The TA will be available to help you with whatever you are struggling with in the class.** The TA will generally plan on doing one or more of the following things during his sections:

   (a) She/he will help you with getting started on the next homework assignment.
   (b) She/he will try to help you if you struggle with or are stuck on some of the homework problems.
   (c) If time permits, she/he will work through some additional examples.
   (d) She/he will review relevant material before exams.
   (e) She/he will briefly review mathematical techniques before I first use them in class.

If you would like the TA to review particular topics or get you started on particular homework problems you may ask her/him to do so ahead of time (e.g. via email). **However, be aware that you need to ask her/him far enough in advance (at least a few days), so that she/he has a chance to prepare for your particular requests.**

Finally, discussion sections are also an opportunity to earn a total of **4 percentage points bonus credit** that will be added to the overall class score (up to a maximum of 100%) through participation (details are explained in Section 4).

**Course Resources:** The course does not require a textbook. All relevant resources will be presented in class, discussion sections, and/or made available on the ECON 3115 Moodle page. While the class does not require any textbook, here are a few textbooks that I recommend for your reference:


In case you decide to buy one of these books, I recommend you look for a (possibly used) version of an older edition. The latest edition is always very expensive but the content relevant for this class is virtually identical across versions.

**Prerequisites:** There are two prerequisites for this class:

1. I expect students to have a sound understanding of **basic calculus, basic statistics**, as well as **basic algebra**. In particular, students will need to be able to independently master at least
the following operations: Take first and second derivatives of (simple) functions in one unknown, maximize/minimize functions in one unknown, “solve” equations for a particular variable, solve systems of up to 2 equations in 2 unknowns, and work with (or manipulate) expectations, variances, and covariances of simple random variables. (Review material will be provided on the ECON 3115 Moodle page.)

2. I expect students to have a sound understanding of basic economic concepts, such as budget constraints, preferences, indifference curves, as well as standard economic arguments such as “marginal benefit = marginal cost”, “supply = demand”, “market equilibrium”, “equilibrium/market price”, “equilibrium/market quantity”, etc.

Students who do not have the above prerequisites are still welcome to the class, but are expected to put in the necessary extra effort to self study these prerequisites. If the schedule permits it, the teaching assistant will review the necessary mathematical techniques in his discussion sections before I first use them in class. I will teach the class assuming that students are familiar with these basic prerequisites or know how to self study these tools. (Review material will be available on the ECON 3115 Moodle page.)

4 Course Evaluation & Grading
Your overall grade for this course has the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Five of Six Homework Assignments (5% each)</td>
<td>30%</td>
</tr>
<tr>
<td>Best three of Four Exams (23.3% each)</td>
<td>70%</td>
</tr>
<tr>
<td>Midterm 1, Friday, February 5, 2016</td>
<td></td>
</tr>
<tr>
<td>Midterm 2, Friday, March 4, 2016</td>
<td></td>
</tr>
<tr>
<td>Midterm 3, Friday, April 8, 2016</td>
<td></td>
</tr>
<tr>
<td>Final, Wednesday, May 11, 2016 (cumulative)</td>
<td></td>
</tr>
<tr>
<td>Bonus Credit:</td>
<td>5 pp</td>
</tr>
<tr>
<td>Syllabus Quiz</td>
<td>1 pp</td>
</tr>
<tr>
<td>Section Attendance</td>
<td>2 pp</td>
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<tr>
<td>Section Participation</td>
<td>2 pp</td>
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4.1 Homework Assignments
There will be six graded homework assignments. The best five count toward your grade. The following rules apply for handing in your assignments:

1. To be eligible for full credit, you must hand in your homework before the posted due date and time. After the respective due date and time you may still hand in your assignments any time prior to the last class meeting, to be eligible for at most 25% of the original point maximum.

2. All assignments will be due at the beginning of class. Class “begins” as soon as I start lecturing! Any assignments turned in late will only be eligible for up to 25% of the total credit.
3. All assignments must be submitted in person to either me or the teaching assistant. You may do so in class, in office hours, or in discussion sections. Assignments that are slid below our office doors or left in our mailboxes will not be considered for any credit!

Homework Grading Policy: Assignments will be graded mostly on “effort” with five possible scores on each assignment:

<table>
<thead>
<tr>
<th>Score</th>
<th>Effort</th>
</tr>
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<tbody>
<tr>
<td>100</td>
<td>completed all problems with mostly correct answers</td>
</tr>
<tr>
<td>75</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>25</td>
<td>completed at least half of the 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>

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 questions 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 the teaching assistant or me 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 related to the homework and associated answer keys.

4.2 Exams
There will be four 50 minute exams (three midterms and one final). The best three of your four exams will count toward your class grade with equal weight (23.3% each). There will be NO MAKEUP EXAMS! If you miss an exam (for any reason) you will receive zero credit on that exam.

DO NOT PLAN TO INTENTIONALLY SKIP ANY MIDTERM! I only count 3 out of 4 exams in case you need to miss an exam due to an unforeseen emergency. You have exactly one chance to miss an exam for any reason. Any further exam that you miss (even if it is because of an emergency) will count with a score of zero toward your grade.¹

Study Cards: You may bring one handwritten study card to each of the exams. The card’s dimensions must not exceed 8.5 × 5.5 inches (1/2 of a US Letter page) and you may write on both sides of the card. The study card must be handwritten (no exceptions). We will take away study cards that are photo copied or printed. If we catch you with a printed or photo copied study card, you also lose the right to bring study cards to any further exams.

Exam Grading Policy: The maximum score on each exam will be 100%. All questions will be free response questions. Exam questions will be similar to those on the homework assignments. Your answers will be graded in detail. You will receive partial credit for partially correct answers. Like for homework assignments, there will be detailed answer keys.

¹Only in the very unlikely event that you have to miss two exams because you encounter two severe unexpected emergencies that happen to coincide with exam dates and are verified in writing by the Dean of students' office am I willing to discuss putting all the weight on the two exams you actually take.
Generally speaking, **the most important parts of your answer are your detailed derivations and written arguments.** Simply writing one number (or mathematical expression) as the final answer will give you almost no credit (even if the number or expression is correct). A logically correct argument and derivation, with an eventual wrong outcome, will in most cases result in more partial credit than the correct number without any argument.

### 4.3 Class Grade & Curve

Your overall class score will be “graded on the curve”. That is, after the final exam, I will compute your overall class score, with the weights described above. Your class letter grade will then be based on the percentiles of the class score distribution, approximately as follows:

<table>
<thead>
<tr>
<th>% of Students</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>top 25%</td>
<td>A</td>
</tr>
<tr>
<td>next 50%</td>
<td>B</td>
</tr>
<tr>
<td>next 20%</td>
<td>C</td>
</tr>
<tr>
<td>next 3%</td>
<td>D</td>
</tr>
<tr>
<td>lowest 2%</td>
<td>F</td>
</tr>
</tbody>
</table>

A curve like this ensures that the best students (in the highest percentiles) will receive an A, regardless of the score numbers. For example, if the highest score in the class happens to be 65, then the student with a 65 will for sure receive a grade of A. If the top score in the class is 100, then a score of 65 will most likely not suffice for an A. It is also possible that everybody receives a grade of A.

All your scores will be visible to you at any time on the ECON 3115 Moodle page. While the class is curved at the very end, I will provide you with a “preliminary curve”, after each exam. This will give you a rough idea of “where you stand” in the class. That is, I will let you know what grade you would receive, if the class ended that day.

### 4.4 Bonus Credit

Students may earn up to a total of **five percentage points** in bonus credit which will be added to the overall class score (up to 100%) **at the end of the semester.**

1. **Syllabus Quiz (1pp):** If you complete the syllabus quiz on the ECON 3115 Moodle page **before Friday, September 2** I will add one percentage point to your overall class score (up to a maximum of 100%) **at the end of the semester.**

2. **Section Attendance (2pp):** If you attend and sign in with the TA for at least 2/3 of the discussion sections held, I will add two percentage points to your overall class score (up to a maximum of 100%) **at the end of the semester.**

3. **Section Participation (2pp):** Students may earn a total of two percentage points for volunteering to **present homework (HW) problems** on the black/whiteboard during discussion sections. In some sections the TA will have a **signup sheet** on which you can check off which problems for the upcoming HW you are willing to present on the board. You must check off the problems you would like to volunteer **before section begins.** Section begins as soon as the TA says so. The TA will choose which student(s) gets to present.
If you volunteer to present at least 1/2 of all the HW and practice problems available on the signup sheets throughout the semester I will add two percentage points to your overall class score at the end of the semester. It does not matter whether you actually wind up presenting the problems you check off. But if you do check them off, the TA may call you to the board during section. Also, note that the presentations are not a test. It does not matter whether or not you get the answer of the problem perfectly right. This is about the willingness and initiative to go to the board and explain to your peers how you approached/solved the HW problem. The goal is to work out a satisfactory solution together with your peers and the TA.

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 and discussion sections. 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 ECON 3115 Moodle page regularly for correspondence and updates regarding the course.

Accommodation Policy: If you have a disability that qualifies you for academic accommodations, please provide a letter of accommodation from Disability Services in the beginning of the semester. For more information regarding accommodations, please contact the Office of Disability Services (http://ds.uncc.edu) at 704-687-0040 or stop by their office in Fretwell 230.

Exam Bathroom Policy: All exams will be 50 minute exams. Please use the bathroom before the start of the exam as it is disruptive for other students if somebody leaves the room in the middle of the exam. Anybody who needs to leave the room during exams (e.g. to go to the bathroom) must leave his/her exam with me (or the person proctoring the exam) and must also leave any electronic devices that he/she carries in his/her pockets (e.g. cell phone, iPod, iPad, Kindle, etc.) with me (or the person proctoring the exam) before leaving the room.

Regrading Policy: If you would like your exam re-graded, you must submit a written re-grade request within one week of receiving your graded exam. 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.

No Screen: While in class, I expect you to follow my “no screen” policy. I do not want to see any cell phones. Leave them in your backpack/purse/pocket (with the sound turned off) during class. Laptops/Tablets are strongly discouraged. They will not be very helpful for note taking, as much of the class will require writing equations, graphs, etc. If you absolutely must use one, please talk to me about it in person.
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 (http://legal.uncc.edu/policies/up-407). 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.

Part I: Bonds, Interest Rates & Financial Intermediaries

Weeks 1-2: Introduction to Lending Markets
Weeks 3-4: Interest Rates, Bonds, and the Term Structure

Week 5: Midterm 1

Weeks 5-8: Managing Banks: Risk & Hedging
Weeks 8-9: Central Banks & The Federal Reserve

Week 9: Midterm 2

Part II: Decisions Under Uncertainty & Models of Banks

Weeks 9-12: Risk Aversion, Diversification, Insurance
Weeks 12-13: Banks as Providers of Liquidity Insurance
Week 14: Midterm 3


Week 17: Final