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ECON 440 Analysis of Public Finance
University of North Carolina at Chapel Hill
Fall 2021 Syllabus¹

Instructor: Qing Gong (GA201, qinggong@email.unc.edu)

Lectures: T/Th 8:00 – 9:15 AM @ GA309 (440-001)
T/Th 9:30 – 10:45 AM @ GA308 (440-002)

Office Hours: Sign up here: <https://calendly.com/econ440s19/prof-gong-office-hours-fall-2021>

Prerequisites: ECON 400 and 410 (C or above)

Textbook: Jonathan Gruber, *Public Finance and Public Policy* (6th edition). Worth Publishers, 2019. The 5th and 4th editions are both very good substitutes. The textbook is *not* required.

Course synopsis: In this course, we will study the role of government in the economy. The main goal is to develop a set of tools for analyzing the role the government plays and the impacts of its policies on the lives of its citizens. In particular, we will begin by discussing why government intervention is needed in a market economy; we then examine government expenditures (e.g. social security, education, health care) and government revenues (different types of taxation). We will cover a wide range of classic topics in public finance, with a focus on current policy issues on the environment, social security, health care, education, taxation, and, of course, the current pandemic. Some examples are:

- What affects people’s vaccination decisions? What’s the implication on individual and public health? When is it time for the government to intervene?
- What are market failures? Is government intervention the only remedy to market failures?
- What are the popular voting rules? What are the determinants of voter turnout? What does the Median Voter Theorem imply about candidates’ platforms in primary vs general elections?
- What is the difference between a fully funded social security system and the pay-as-you-go system? What is the nature of the U.S. social security system?
- Why do people value health insurance? What causes some insurance markets to unravel? What are the twin problems with the U.S. health care system?
- What's the reason for the “marriage penalty” in the U.S. tax system?
- How will government programs like the EITC and CARES stimulus check affect people’s decisions and their economic wellbeing?

Student learning outcomes: The aim of this course is to provide students with the theoretical, quantitative, and empirical tools that are commonly used in the analysis of public finance topics. Equally importantly, students will gain a clear understanding of the prominent public finance policy issues in the US, with a focus on how they affect government revenues, expenditures, and ultimately the welfare of individuals. While the tools and topics learned in this class are motivated by the central questions in public finance, most of them will be applicable to other empirical contexts and more general settings.

¹ The professor reserves the right to make changes to the syllabus, including project due dates and test dates. These changes will be announced as early as possible.

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Essential resources: It is *absolutely essential* that you have regular access to:

- **Sakai:** Announcements, materials, and assignments will all be posted on Sakai (<https://sakai.unc.edu/portal/site/econ440fa21>). Please be sure to check the site regularly and/or turn on notifications to get prompt updates.
- **Gradescope:** All homework assignments will be collected, graded, and returned on Gradescope. Our Sakai site has a tab that links to the GradeScope page. The entry code is **P56VNN**.

Course requirements and grading policy: Your course grade will be based on three problem sets, three exams, and participation. A numeric grade will be calculated based on the weights specified below, and then converted to a letter grade according to the grading scale in the **Class Policies** attached to the end of this syllabus. Grades will not be curved or “rounded up” at the end of the semester.

Problem sets: 24% in total (8% x 3)

The problem sets include problems indicative of those in the exams and will be assigned throughout the semester. Due to the size of the class and limited TA hours, we could not provide lengthy explanations or corrections while grading. Instead, detailed solutions will be posted in a timely fashion, and students are expected to read them carefully.

Exams: 20% + 20% + 30%

- Midterm 1: 20% (given in-class on Tue. 9/21)
- Midterm 2: 20% (given in-class on Tue. 10/26)
- Final exam: 30%
 - Sat. 12/4 at 8:00 – 11:00 am for ECON 440-001
 - Tue. 12/7 at 8:00 – 11:00 am for ECON 440-002²
- Practice exams from previous years will be provided before each exam.

Participation: 6%.

Participation in the discussions during lectures is an effective way to assess and, more importantly, help with your learning. Participation is evaluated based on attendance, Q&As in class (some of which require completing the required readings before coming to class), as well as contribution to the in-class activities.

Office hours: I will hold at least two hours of office hours per week. Please sign up for one (or two, if you think you’ll need more time) 15-minute slots beforehand.

Class schedule: Below is a tentative schedule for the semester, with the corresponding chapters in the Gruber textbook (6th edition).

² See Office of the University Registrar: <https://registrar.unc.edu/academic-calendar/final-examination-schedule-fall/>

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| Week | Dates | Topic | Chapter in Gruber 6e |
|---|--------------|---|-----------------------------|
| 1 | 8/19 | Introduction to Public Finance | 1 |
| 2 | 8/24 | Review of Theoretical and Empirical Tools | 2, 3 |
| <i>Part I. The Economic Basis for Government Activity</i> | | | |
| 2-3 | 8/26, 8/31 | Externalities and Government Intervention | 5, 6 |
| 3-4 | 9/2, 9/7 | Public Goods and Free Riding | 7 |
| 4-5 | 9/9, 9/14 | Public Choice and Political Economy | 9 |
| 5 | 9/16 | Review and Discussion 1 | |
| 6 | 9/21 | Midterm 1 (75 minutes, in-class, closed-book, closed-notes) | |
| <i>Part II. Selected Issues of Government Expenditures and Policy in the United States</i> | | | |
| 6 | 9/23 | Government Expenditures and Fiscal Federalism | 10 |
| 7 | 9/28 | Education | 11 |
| 7 | 9/30 | Social Insurance | 12 |
| 8 | 10/5 | Social Security | 13 |
| 8-9 | 10/7, 10/12 | Health Insurance and Health Care in the US | 14, 15, 16 |
| 9 | 10/14 | Health Care Reform | 15, 16 |
| 10 | 10/19 | Income Distribution and Welfare Programs | 17 |
| 10 | 10/21 | Review and Discussion 2 | |
| 11 | 10/26 | Midterm 2 (75 minutes, in-class, closed-book, closed-notes) | |
| <i>Part III. Government Revenue, Government Debts & Economics of Taxation</i> | | | |
| 11 | 10/28 | Introduction to Taxation | 18 |
| 12 | 11/2, 11/4 | Theory of Tax Incidence | 19 |
| 13 | 11/9 | Deadweight Loss and Theory of Optimal Taxation | 20 |
| 13 | 11/11 | Theory of Income Taxation | 21 |
| 14 | 11/16 | The U.S. Personal Income Tax System in Practice | 21 |
| 14 | 11/18 | Taxation of Savings | 22 |
| 15 | 11/23 | Taxation of Corporate Income and Ideas for Fundamental Tax Reforms | 23-25 |
| 16 | 11/30 | Review and Discussion 3 | |
| | | Final Exam (180 minutes, closed-book, closed-notes): Sat. 12/4 at 8:00 – 11:00 am for ECON 440-001 Tue. 12/7 at 8:00 – 11:00 am for ECON 440-002 | |

***** Please carefully read the Class Policies at the end of the syllabus *****
Staying enrolled in this class implies your agreement to these policies

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**Class Policies For
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Fall 2021**

1. **Attendance:** Regular attendance is essential for doing well in this course. No right or privilege exists that permits a student to be absent from any class meetings, except for these University Approved Absences:
 - Authorized University activities
 - Disability/religious observance/pregnancy, as required by law and approved by Accessibility Resources and Service and/or the Equal Opportunity and Compliance Office (EOC)
 - Significant health condition and/or personal/family emergency as approved by the Office of the Dean of Students, Gender Violence Service Coordinators, and/or the Equal Opportunity and Compliance Office (EOC).

2. **Problem sets:**
 - a. **Submission:** Scanned copies of the problem sets must be uploaded to GradeScope before the specified deadline. It is your responsibility to make sure the upload is successful and legible. Please avoid email submissions if at all possible – they are hard to keep track of, hard to grade, and also hard for you to get feedback or request regrades. Late submissions before solutions are posted will receive discounted grades. Submissions after solutions are posted will not be accepted.

 - b. **Collaboration:** You may discuss the reading materials and questions in the problem sets with each other; however, each individual must submit a separate problem set (i.e., you need to write/type up your own answers, not copies of others' answers) and each individual will be graded separately on the assignment.

 - c. **What to expect from the instructor:** The problem sets are carefully designed to assist with and assess your learning, and there should be sufficient information for you to solve it with the tools we learned in class. Hence, you should not try to get extensive help from me on how to approach the problems before they are due. While I would be happy to answer clarification questions if there is a reasonable amount of ambiguity, you should not ask for hints, instructions, or answers to the questions. I will give hints to the entire class if there is a particularly challenging problem and will discuss common/typical mistakes after grading is done.

3. **Exams (midterms and finals):**
 - a. **Aids during exams:** All exams are closed-book and closed-notes. You may not communicate or cooperate with your peers during the exams. Simple, non-programmable calculators are allowed in the exams; other calculators (including cellphone calculators) are not allowed.

 - b. **Missing exams:** Midterms and finals cannot be rescheduled, nor will there be a make-up exam in case you miss one. So please plan your travels, interviews, work schedules etc., accordingly. The weights of the midterms are non-negotiable and cannot be switched to the final exam.

 - c. **Exceptions:** An exception will be made for University-approved absences. Students with this type of absence should contact me *before* the exam (if possible) and provide appropriate documentation

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within two business days of the exam.

4. Grading

- a. **The grading scale:** Participation, problem sets, and exams will be given numeric grades; they are weighted to generate a numeric course grade (0-100), which is then converted to a letter grade using the following table:

| Numeric score | Letter grade | Grade points | Numeric score | Letter grade | Grade points |
|---------------|--------------|--------------|---------------|--------------|--------------|
| [93, 100] | A | 4.0 | [77, 80) | C+ | 2.3 |
| [90, 93) | A- | 3.7 | [73, 77) | C | 2.0 |
| [87, 90) | B+ | 3.3 | [70, 73) | C- | 1.7 |
| [83, 87) | B | 3.0 | [67, 70) | D+ | 1.3 |
| [80, 83) | B- | 2.7 | [60, 67) | D | 1.0 |
| | | | [0, 60) | F | 0 |

- b. **Regrading requests:** Please submit requests to re-grade a problem set or an exam *in writing on GradeScope* within 7 calendar days after your work is returned. Please (i) read the solution thoroughly before you submit the request and (ii) include a short note explaining why you believe your answer should be re-evaluated. In such a case, I will re-grade the entire problem set or exam, which may result in an increase or a decrease in your grade.

5. Course material re-distribution is strictly prohibited.

All course materials are only intended for the currently enrolled students. Any form of re-distribution is strictly prohibited.

6. Textbook affordability.

I support the [Textbook Affordability program](#). I suggest that you make textbook purchase decisions *after* attending the first (two) lectures. Older editions of the book are very good substitutes and much more affordable. I've made digital copies of chapters that are particularly important available on the course reserve, and have two copies of the textbook (one 6th edition and one 4th edition) on reserve at the Undergraduate Library.

7. Accommodations.

The University of North Carolina at Chapel Hill facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in barriers to fully accessing University courses, programs and activities.

Accommodations are determined through the Office of Accessibility Resources and Service (ARS) for individuals with documented qualifying disabilities in accordance with applicable state and federal laws. See the ARS Website for contact information: <https://ars.unc.edu> or email ars@unc.edu.

8. Honor Code.

Information, including your responsibilities as a student is outlined in [the Instrument of Student Judicial Governance](#). Your full participation and observance of the Honor Code are expected.

9. Counseling and Psychological Services

CAPS is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services, whether for short or

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long-term needs. Go to their website: <https://caps.unc.edu/> or visit their facilities on the third floor of the Campus Health Services building for a walk-in evaluation to learn more.

10. Title IX Resources.

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Reports can be made online to the EOC at <https://eoc.unc.edu/report-an-incident/>. Please contact the University's Title IX Coordinator (Elizabeth Hall, interim – titleixcoordinator@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gvsc@unc.edu; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu.