ECONOMICS 741: ADVANCED MATHEMATICAL ECONOMICS
Fall 2022
TR 9:30pm – 10:45am
121 Bryan Building

INSTRUCTOR: Professor Dora Gicheva
Office: 459 Bryan Building
E-mail: d_gichev@uncg.edu
Office Hours: Thursday 11am – 1pm
or by appointment (https://calendly.com/dora_gicheva)

COURSE DESCRIPTION: This course focuses on mathematical modeling using the tools of mathematical optimization theory. Topics cover the theory of consumer and firm behavior under certainty and uncertainty including utility maximization, consumer demand, game theory, production, and profit maximization.

PREREQUISITE: ECO 701 or equivalent

COURSE MATERIALS: Microeconomic Theory: Basic Principles and Extensions, twelfth edition, by Walter Nicholson and Christopher Snyder. The accompanying Study Guide is also recommended.

I will post other required and recommended materials on Canvas over the course of the semester.

COURSE OBJECTIVES: By the end of this course students should be able to:

• solve utility maximization problems.
• derive individual demand functions from utility functions and aggregate the individual demand functions into market demand functions.
• derive and interpret the meaning of the own-price elasticity of demand, the cross-price elasticity of demand and the income elasticity of demand.
• understand how individuals maximize utility in the presence of risk and other forms of imperfect information.
• find the cost minimizing combination of inputs to produce a given level of output.
• derive a firm’s long run cost function from the firm’s production function.

GRADES: Grades will be based on the following components:

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Homework</td>
<td>30%</td>
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<tr>
<td>Midterm</td>
<td>30%</td>
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<tr>
<td>Final</td>
<td>40%</td>
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**Homework:** I will usually assign problem sets weekly, although I will occasionally skip a week and assign a longer problem set the following week. You can work on the homework assignments with your classmates but you have to write up your own solutions. All homework is due at the beginning of class; no late homework will be accepted.

**Exams:** There will be an in-class midterm exam and a comprehensive final exam. The University-scheduled final exam time is 8am – 11am on Thursday, December 8.

**Academic Integrity Policy:** By submitting an assignment, each student is acknowledging their understanding and commitment to the Academic Integrity Policy on all major work for the course. Refer to the following URL: https://osrr.uncg.edu/academic-integrity/.

**Accommodations:** UNCG seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must connect with the Office of Accessibility Resources and Services (OARS) in 215 Elliott University Center, (336)334-5440, oars.uncg.edu.

Students may request accommodations for religious holidays under applicable laws. See https://catalog.uncg.edu/academic-regulations-polices/university-policies for more information.

Students should remind the instructor in advance when accommodation affects course activities, e.g., before taking exams, to ensure that the instructor has updated systems accordingly.

**Health and Wellness:** Your health impacts your learning. Throughout your time in college, you may experience a range of health issues that can cause barriers to your learning. These might include physical ailments, illnesses, strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, or loss of motivation. Student Health Services and The Counseling Center can help with these or other issues you may be experiencing. You can learn about the free, confidential mental health services available on campus by calling 336-334-5874, visiting the website at https://shs.uncg.edu/ or visiting the Anna M. Gove Student Health Center at 107 Gray Drive. Help is always available.

**Faculty and Student Guidelines** can be found at https://bryan.uncg.edu/wp-content/uploads/2017/08/Faculty-and-Student-Guidelines-2018-2019.pdf. Please read them carefully in order to understand the roles and responsibilities of both students and faculty.

**Communication and Course Technical Guidelines:**
Technical support: Students with technical issues with the course and email should contact 6TECH for support either by email or phone or chat (https://its.uncg.edu/Help/6TECH/). Please also make your instructor aware of the issue, and if there will be any delays in resolving the issue.