

**EC 203 Syllabus**  
**Quantitative Tools for Economics and Business**  
*Fall 2021*

**Instructor:** Tim Murray, PhD  
**Office:** 227 Scott Shipp Hall

**Email:** [murrayta@vmi.edu](mailto:murrayta@vmi.edu)  
**Office Hours:** By appointment

**Required Material**

- Access to Microsoft Excel
- Graphing Calculator

**Textbook**

There will be no required textbook in this class, all course material will be provided in class.

**Prerequisites**

MA 101 and MA 201 with a C or better

**Course Description**

In this course you will learn various mathematical and statistical techniques used to answer questions in economics and business that include:

- Solving economic models using algebra and calculus
- Probability and statistics
- The time value of money

You will also learn how to apply these techniques in Microsoft Excel to analyze data. These are tools you will use in future classes and throughout your personal and professional life.

**Grading and Assignments**

Homework	25%
Excel Assignments	5%
2 Midterm Exams	20% each
Final Exam	30%

**Grading Scale**

<b>A</b>	90-100	<b>B</b>	80-89	<b>C</b>	70-79	<b>D</b>	60-69	<b>F</b>	0-59
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**Homework Assignments**

Homework assignments and due dates will be posted on Canvas. Late assignments will receive a grade of 0. Homework will be a large part of how you learn in this class. The lowest homework grade will be dropped. Homework is graded on completeness using the following scale:

Grade	Description	% Grade
✓+	Attempted every problem and showed all work	100
✓	Attempted most problems and showed all work	80
✓-	Attempted some problems or did not show most work	60
✗	Does not meet criteria for ✓-	0

**Submitting Assignments:** Homework assignments will be submitted on Canvas either as a PDF (this can be done using apps on your phone like Cam Scanner) or as pictures. It is up to you to ensure that your upload is clear and shows all of the problems.

The reason for submitting your assignments on Canvas is so that you can have your assignment in front of you as we go over the problems on the day they are due.

### Excel Assignments

There will be two Microsoft Excel assignments, one covering statistics and the other finance. Late Excel assignments will not be accepted.

### Exams

There will be two midterm exams and a comprehensive final exam. Midterm exam dates will be announced in class and on Canvas. Students requesting an alternative time must inform me prior to the exam.

### Course Topics

The following is a tentative list of concepts and topics that will be discussed throughout the course. Any changes be announced on Canvas.

<b>Mathematical Concepts</b>	Review of Algebra
	Calculus and Derivatives
<b>Economic Models</b>	Supply, Demand, and Elasticity
	The Production Function
	Profit Maximization
	Utility Maximization
<b>Exam 1</b>	
<b>Probability</b>	Counting Rules and Probability
	Expected Value and Discrete Probability
<b>Describing Data and Distributions</b>	Mean and Median
	Variance and Standard Deviation
	Correlation and Covariance
	Normal Distribution
	Other Distributions
<b>Hypothesis Testing</b>	T-Test
	P-Values
<b>Exam 2</b>	

<b>Introduction to Econometrics</b>	Bivariate Linear Regression
	Interpreting Regression Output
<b>Introduction to Finance</b>	Time Value of Money
	Annuities
<b>Final Exam</b>	

### **Work for Grade Policy and Standards of Conduct**

It is your responsibility to carefully read and understand these policies both from VMI and the Department. Copies of these policies are available on Canvas.

### **Students with Disabilities**

VMI abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 which mandate reasonable accommodations are provided for all Cadets with documented disabilities. If you have a registered disability and may require some type of instructional and/or examination accommodations, please contact me early in the semester so that I can provide or facilitate provision of accommodations you may need. If you have not already done so, you will need to register with the Office of Disabilities Services, the designated office on Post to provide services for Cadets with disabilities. The office is located on the 2nd floor of the VMI Health Center. Please call or stop by the office of LTC Sarah Jones, Director of Disabilities Services, for more information, 540-464-7667 or email at: [jonessl10@vmi.edu](mailto:jonessl10@vmi.edu).

### **Statement of Diversity and Inclusion**

VMI values human diversity in all its richly complex and multi-faceted forms, whether expressed through race and ethnicity, culture, political and social views, religious and spiritual beliefs, language and geographic characteristics, gender, gender identities and sexual orientations, learning and physical abilities, age, and social or economic classes. We respect the value of every member of the class, and everyone in the class is encouraged to share their unique perspective as an individual, not as a representative of any category. Multicultural and intercultural awareness and competencies are key leadership skills. College is supposed to challenge assumptions and to provide new and sometimes uncomfortable ways of looking at issues. If you feel uncomfortable regarding content or perspectives that are presented or discussed by me, your professor, guest speakers, or other cadets, please contact me immediately so that we can discuss those issues. I also ask that you let me know your preferred gender pronoun. Your suggestions on how to incorporate diversity in this course in a meaningful way are appreciated and encouraged.