

# Economics 110

## Quantitative Methods

Fall 2018

**Instructor:** Professor Gang Wang  
**Office:** Morgan 206  
**Office Phone:** (330)287-1986  
**Office Hours:** MWF 9:00am - 10:00am, or by appointment  
**Email:** gwang@wooster.edu

**TA:** Muyao Li  
**Email:** mli20@wooster.edu  
**Office Hours:** Tuesday 7:00pm - 9:00pm

**Lecture Hours:** MW 2:00pm - 3:20pm, Morgan 201

**Text:** *Essentials of Statistics for Business and Economics*, 7th edition, Cengage Learning, by Anderson, Sweeney, Williams, Camm, and Cochran

### Course Description and Objectives:

This course serves as an introduction to basic mathematical and statistical methods and models used in business and economics. We will discuss the limitations of quantitative methods and illustrate various decision-making techniques using computer applications.

Upon the completion of this course, you should have the ability to analyze and solve common problems in business and economics. You also should have the capability of understanding professional journal literature for IS and for future course work. Furthermore, you should know some on-line databases as a source information for empirical work in IS and in future researches.

**Prerequisite(s):** ECON 101

### Software:

You can use any statistical packages to do any empirical work related to this class. You are recommend to use STATA since the college has the subscription. A brief introduction on STATA will be given in the beginning of semester.

### Grade Distribution:

Homework	10%
Project	15%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	25%
Class Participation	5%

### Letter Grade Distribution:

>= 93.00	A	77.00 - 79.99	C+
90.00 - 92.99	A-	73.00 - 76.99	C
87.00 - 89.99	B+	70.00 - 72.99	C-
83.00 - 86.99	B	60.00 - 69.99	D
80.00 - 82.99	B-	<= 59.99	F

### Homework:

Homework will be assigned for five times during the semester. **Homework is due at the beginning of the class period** noted at each Homework sheet. Homework may be turned in one class period late for partial credit. **Students will not receive credit for homework submitted more than one class period late.** You are required to print out your homework and submit the paper version to me.

### Class Participation:

During class times students will have an opportunity to earn extra-credit points for class participation. Some class sections will begin with a short quiz based on the material discussed in the last class. During the class sections, I will give you some problems for you to work in groups (groups will be assigned at the first class of the semester). You can earn points when you provide appropriate answers for those questions and problems.

Tokens will be handed out to students who ask relevant questions or make substantive comments during class. The instructor will be the sole judge of the appropriateness of comments. Students can earn up to two tokens per class session. Students are free to participate after they have earned the maximum number of tokens for that class. Tokens must be turned in at the end of class. Each token worth 0.05 points.

Each point worth 1% of the final grade. If the total points you earn for the whole semester are over 5 (5% of the final grade), the extra points will be treated as bonuses.

### Project:

You will submit a project for this course that addresses a particular business or economic problem or issue and analyzes it using the tools you learned in this course. **You will write a proposal of your project** before you start the project itself. The proposal will be a brief summary of your intended project including a brief review of relevant literature. This will not be graded. However, the proposal provides a basis for us to agree on a topic which can result in a solid project or paper. That being said, after you turn in the proposal, **I will send you an email** to let you know if the topic is accepted or not. Due dates for the project proposal and the project itself are noted at the "Tentative Course Outline" part. The instruction for the project is named **"Econ 110 project guide"** on Moodle.

### Exams:

There will be three midterm exams and a final exam. **The final exam will be on Monday, December 10 at 3:00pm.** There will be **NO** make-up exams. If you have a legitimate reason for missing an exam (e.g., a documented serious illness or a death in the family), the exam will be distributed among the other exams and the final.

### Moodle:

We will be using Moodle course management system in this course. All assignments, hand-outs, links to websites and data sets will be posted on Moodle. It is your responsibility to check Moodle on a regular basis.

### Course Policies:

Class attendance is students responsibility and choice. If your goal is to learn and earn a good grade for this class, you will most probably need to attend all classes. There will be **NO** make-up sessions. Punctual and respectful attendance is appreciated. Students are expected to wait 15 minutes for the instructor to arrive. If the instructor has not arrived in 15 minutes, the students may leave.

Laptops are allowed but can be only used for taking notes, viewing the course slides and practicing in-class Excel or Stata exercises. **Other uses** such as online chatting, Internet surfing, watching videos, etc. are **NOT allowed** and will potentially resulting a lower grade on the participation evaluation.

### Academic Integrity:

You are expected to be familiar with and abide by the **"Code of Academic Integrity and Wooster Ethic"**. Any questions concerning the Code's or Ethic's applicability to this course should be addressed promptly to me.

### The Learning Center - APEX:

The Learning Center, which is located in APEX (Gault library) offers a variety of academic support services, programs and 1:1 meetings available to all students. Popular areas of support include time management techniques, class preparation tips and test taking strategies. In addition the Learning Center coordinates peer-tutoring for several academic departments. Students are encouraged to schedule an appointment at the APEX front desk or call x2595.

The Learning Center also coordinates accommodations for students with diagnosed disabilities. At the beginning of the semester, students should contact Amber Larson, Director of the Learning Center (ext. 2595; alarson@wooster.edu), to make arrangements for securing appropriate accommodations. Although the Learning Center will notify professors of students with documented disabilities and the approved accommodations, it is the responsibility of the students to speak with professors during the first week of each semester. If a student does not request accommodations or does not provide documentation, faculty are under no obligation to provide accommodations.

### Tentative Course Outline:

The weekly coverage might change as it depends on the progress of the class.

Date	Chapter	Short Description
Aug 22	1	Introduction
Aug 27, 29	2	Data visualization
Sep 3, 5	3	STATA; Measures of location and variability
Sep 10, 12	3	Distribution and relative location; Exam 1 review

### Exam 1 on Monday, September 17

Sep 19	4	Intro to probability (4.1 - 4.3)
Sep 24, 26	4, 5	Conditional probability; Bayes' theorem; Discrete probability

Oct 1, 3	5, 6	Discrete probability (continued), Continuous probability
<b>Fall Break</b>		
Oct 15, 17	6	Continuous probability (continued), Exam 2 review
<b>Exam 2 on Monday, October 22</b>		
Oct 24	7	Point estimation; Sampling distribution
Oct 29, 31	7, 8	Sampling distribution (continued), Interval estimation
Nov 5, 7	9	Hypothesis testing
Nov 12	9	Exam 3 review
<b>Exam 3 on Wednesday, November 14</b>		
Nov 19	10	Hypothesis testing the mean difference
<b>Thanksgiving</b>		
Nov 26, 28	10, 12	ANOVA, Simple linear regression
Dec 3, 5	12	Simple linear regression (continued)
<b>Final project due on Wednesday, December 5</b>		
<b>Final Exam on Monday, December 10 at 3:00pm</b>		