Kalamazoo College
Department of Economics and Business

Busn/Econ 155: Mathematical Methods for Economics and Business
Fall 2016, 9/12/2016 – 11/22/2016

Instructor Information:

Sining Wang, PhD
Office: Dewing Hall 302
Office Hours: 3:00 PM - 5:00 PM, Tue&Thur, or by appointment
Email: Sining.Wang @kzoo.edu
Office Phone: (269)-337-7057
Personal Website: www.siningwang.com

Class Details:

Classroom: Dewing Hall 200
Meeting Time: 2:45 PM — 4:00 PM, Monday, Wednesday & Friday

General Overview:

Math should be viewed as a language, just like the other languages we use in daily conversation. It is a way of conveying ideas and information. In this course, we will together learn the language of mathematics and how to use it to better understand economic theory.

From the principles of economics courses, most of the ideas are presented verbally (either in English or in other languages). However, words can be quite imprecise and open to misinterpretation. Math, as a more precise language, allows us to understand much more complicated phenomenon that would be possible if we restricted ourselves to words. This course will give you the quantitative skills necessary for upper-level courses, and make your other economics courses much easier.

This course consists with two major parts. In the first part, we will start with the introduction of linear function, then gradually move to system of linear functions, quadratic functions, exponential and logarithmic functions. We will see how to use these math skills to illustrate economic concepts such as demand, supply, budget, cost, depreciation and so on. In the second part, we will start with the introduction to differential calculus, and then apply it to solve optimization problems in economics. If we still have time at the end, we might spend a little time on game theory.

Textbook:

- *Basic Mathematics for Economists, 3rd Edition*, by Mike Rosser and Pioter Lis;

Evaluation:

An Individual's performance will be evaluated according to the following criteria and percentages.

- Exam I 30%
- Exam II 30%
- Exam III (Final) 30%
- Participation and Homework 10%

Grading Scheme:

100% — 90%	A	69% —65%	C+
89% — 85%	A-	64% —60%	C
84% — 80%	B+	59% —55%	C-
79% —75%	B	54% —50%	D
74% —70%	B-	50% and below	F

Explanation of the evaluation criteria:

- **Exams:** Most of the exam questions will be a straightforward review of the study material in class. All exams will be comprehensive, but focusing on different topics.

- **Homework:** There will be 5 homework assignments through the quarter. Usually, assignments will become available on Friday, and should be submitted a week later (see important date in class calendar). Four of them count for your grade. The lowest one will be dropped.

- **Class Participation:** You should be prepared for class and expect to be called upon without notice to contribute to class discussion. Occasionally, a student may be swamped with work and unprepared for a class meeting or simply not wish to be called on. This is understandable. If you occasionally do not wish to be called on, simply let me know before the class.

Academic Integrity:

Academic misconduct in any form is in violation of the Student Code of Conduct at Kalamazoo College and will not be tolerated. This includes, but is not limited to: copying or sharing answers on tests, plagiarism, and having someone else do your academic work. Any violation of the academic integrity policy will result in failure of the course and will likely be referred to the Academic Misconduct Hearing Board for further sanction. Please see the Student Code at https://reason.kzoo.edu/studev/stuconduct/ for more details and a full explanation of the Academic Misconduct policies. With respect to homework assignment and reviewing for exams, working together in a small group can be very helpful in terms of learning process. However, each person is still responsible for submitting their own (unique) work. I urge you to attend to the class in a regular manner. Ambiguity in academic integrity

policies is not an excuse for a violation. If you have any questions about how the policy applies to specific scenarios, please discuss them with me.

Student with Disabilities:

Please contact me during office hours to discuss academic accommodations that may be needed during the semester due to a documented disability. The Associate Dean of Students Office engages in an interactive process with each student and reviews requests for accommodations on an individualized, case-by-case basis. Depending on the nature and functional limitations of a student's documented disability, he/she may be eligible for academic accommodations. The Associate Dean of Students Office collaborates with students and their faculty to coordinate approved accommodations and services for qualified students with disabilities. If you have a documented disability for which you wish to request academic accommodations and have not contacted the Associate Dean of Students Office, please do so as soon as possible. The Associate Dean of Students Office is located in Weimer K. Hicks Student Center, upper level east, room 119, and could be reached at 269-337-7209 or at studev@kzoo.edu. Detailed information regarding the process to request accommodations is available at https://www.kzoo.edu/student-life/students-with-disabilities/.

Rescheduling Final Exam:

Final week for Fall 2016 takes place from November 20th through November 22th. Exam for this class is scheduled at November 21th, Monday, 8:30 am — 11:00 am. Students are required to be available for their final and/or complete and assessment during the stated time. If you have a conflict with this time you must visit the Dean of Students Office to discuss the possibility of rescheduling your final. The Associate Dean of Student Office is REQUIRING that students who have a conflict about which they have or should have had advanced notice (bunched finals, religious obligation, legal/medical appointments…) MUST seek permission to reschedule their assessment. Please note that vacations, previously purchased tickets or reservations, graduations, social events, misreading the finals schedule and over-sleeping are not viable excuses for missing a final. If you think that your situation warrants permission to reschedule, please contact the Associate Dean of Students Office.

Course Calendar (tentative)

this schedule is subject to change, with prior notification of the Instructor

WEEK	TOPICS	IMPORTANT DATE
Week 1 Sept 12 – Sept 18	Functions and Linear Equations (Chapter 4, pp. 66 -86)	Sept 16, Friday, HW1 assigned.
Week 2 Sept 19 – Sept 25	Systems of Linear Equations (Chapter 5, pp. 107 - 133)	Sept 23, Friday, HW1 Due.
Week 3 Sept 26 – Oct 2	Linear Programming (Chapter 5, pp. 148-167)	Sept 30, Friday, HW2 assigned.
Week 4 Oct 3 – Oct 9	Quadratic Functions (Chapter 6, pp. 168-188)	Oct 07, Friday, HW2 Due, **Oct 07, Friday, Exam 1.**
Week 5 Oct 10 – Oct 16	Financial Mathematics (Chapter 7, pp.189 - 245)	Oct 14, Friday, HW3 assigned.
Week 6 Oct 17 – Oct 23	Introduction to Differential Calculus (Chapter 8; Chapter 12)	Oct 19, Wednesday, HW3 Due Oct 21, Firday, Mid-term break
Week 7 Oct 24 – Oct 30	Unconstrained Optimization (Chapter 9, pp. 305-315)	Oct 28, Friday, HW 4 assigned
Week 8 Oct 31 – Nov 6	Constrained Optimization (1) (Chapter 10; pp. 326- 332)	Nov 04, Friday, HW 4 Due. **Nov,04 Friday, Exam 2**
Week 9 Nov 7 – Nov 13	Constrained Optimization (2) (Chapter 11, pp. 374-398)	Nov 11, Friday, HW 5 assigned.
Week 10 Nov 14 – Nov 20	Game Theory (TBA)	Nov 18, Friday, HW 5 Due.
Final Week Nov 20 -22	08:30 am - 11:00 am	Nov 21, Monday, Exam 3