Instructor: Michael Weselcouch
Office: Trex #175
Office Hours: WF 9:30 - 10:30 and R 10:00 - 11:00 or by appointment. All Office Hours are on Zoom.
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Course Objective. to provide the background in the quantitative techniques necessary to better understand advanced courses in Business and Economics.

Note. This course may not be taken for credit if credit has been received for Mathematics 112 or higher. If you have questions concerning this, please contact your advisor immediately. Also, you need to earn a C or better in this course or in INQ 240 to declare a major in Business Administration. Once again, please contact your advisor if you have questions regarding the necessary grades/courses.

Attendance Policy and Hybrid Structure. Students will be grouped into four groups of roughly equal size. In each class session, two of the four groups will attend in person and the other two will attend via Zoom. There is a schedule posted on Inquire that tells you what days your group attends class in person. Class attendance is expected. If you do have to miss class, you are responsible for learning all material covered that day. If you have to miss class and have not discussed your absence with me beforehand, you will be unable to make up any work missed.

Culture of Care. Masks are absolutely, without a doubt, 100% required while attending class in person. If you have a temperature of 100.4 or higher or other coronavirus symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. Do keep up with all readings, assignments, and deadlines. In order for your absence to be excused, you must give Health Services permission to notify me that you have consulted them about coronavirus symptoms. If Health Services informs you that you should isolate and not attend class for multiple days or weeks, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused.

Learning Outcomes. By the end of this course, successful students will be able to:
- Solve linear equations in one or more variables
- Solve applied problems using linear equations
- Solve systems of linear equations using graphing, substitution, elimination, or matrix methods
- Solve quadratic functions and use them in applications
- Solve systems of linear inequalities in two variables
- Use graphical methods to solve linear programming problems
- Find the derivatives of functions
- Use derivatives in business applications

Course Materials.

(1) *Textbook:Mathematical Applications for the Management, Life, and Social Sciences*, (10th edition), by Ronald Harshbarger and James J. Reynolds.
(2) *Calculator:* A scientific or graphing calculator is recommended but not required.
(3) *YouTube:* I will be posting supplementary videos to my YouTube channel.

Structure and Grading. A grade scale will be determined after final grades are computed, but will be no worse than the scale given below. Attendance and class participation will be considered when determining marginal grades.

Grading Scale

	93-100 A	90-92.99 A-
87-89.99 B+	83-86.99 B	80-82.99 B-
77-79.99 C+	73-76.99 C	70-72.99 C-
67-69.99 D+	63-66.99 D	60-62.99 D-

The final course grade is determined in the following way:

Homework Completion 10% Graded
Homework 20%
Mastery Test   70%

Mastery Tests. We will use Mastery-Based Testing rather than Points-Based Testing. Mastery-based testing is very different from what you are used to - do not hesitate to ask me questions! You will only receive credit for answers that demonstrate you completely understand (have mastered) a topic. But you will get MANY chances to display mastery throughout the semester with NO PENALTY for earlier attempts. Your solutions must be submitted as a PDF to the class Inquire page.

- The course has been summarized by 16 topics.
- Your mastery of questions on these topics is assessed through the working of problems in mastery opportunity classes and during the final exam period.
- Each problem submitted is graded as either "Mastered" or "Not Mastered". A grade of Mastery indicates that you have demonstrated a full understanding of the concept being tested and further work on the topic is unnecessary.
- Once you have mastered a topic, you need not attempt it again.
- There is no penalty for multiple attempts taken to achieve mastery.
- Mastery does not mean perfect! It means you understand and can demonstrate all fundamentals of the topic and are proficient at the level desired for the course you do not need to study the topic further.
- Your overall test grade is determined by the number of topics you have mastered illustrated in the table below:

Mastered	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Grade	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25

- All students are required to attempt to master topics for the first time in class on the date listed in the course schedule.
- Retrying to master the topics after the first attempt may be done any time after the first attempt either in class on mastery opportunity days or during office hours.
- To retry a topic in class you will request which topics you want to attempt to master using a Google Form link sent to you via email or use the link in Inquire. This request must be submitted by NOON the day prior to the mastery opportunity class.

Homework Completion. Homework problems will be collected the day they are due and checked for completion. Solutions must be submitted as a PDF to the class Inquire page to receive credit. This work will only be accepted on the day it is due. No late papers will be accepted without arrangements approved prior to absence OR without written documentation from a college official.

Graded Homework. Some homework assignments will be graded. I will let you know in advance which homework problems will be graded.

Test Make-up Policy. Test make-ups are administered in accordance with College policy. Anticipated, excused absences must be reported to the instructor with appropriate certification *well before* the scheduled test date. Legitimate emergency absences must be reported with appropriate documentation within one week of returning to class. No other make-ups will be given.

Corrections to Grading. If you think an error may have been made in the grading of your assignment, carefully review the answer key posted on Inquire and then contact the instructor **within 1 week of the assignment's return** with your question. **Do NOT alter the original work**. The entire assignment may be re-graded and the assignment grade is *subject to remain the same, increase or decrease* at the discretion of the instructor.

Expected Work Policy. This course expects you to spend at least 12 hours of work each week inside and outside of class.

Electronic Devices. You can use only your calculator during class. (This means no cell phones - please set them on silent and leave them in your bag.)

Inquire Policy. Students are required to be knowledgeable of all postings on Inquire. It is each student's responsibility to consistently monitor Inquire for course information. This means every day! Any assignment that requires an Inquire upload will not be accepted in any other form. Also, to receive credit for uploads, the file must be a PDF and readable on the instructor's college computer. It is the student's responsibility to make successful

submissions. It is the student's responsibility to resolve technology problems through the college's IT department.

Accommodations. If you may require an accommodation in this course, please provide me with your documentation within the first 2 weeks of the semester. I must have your documentation at least 48 hours prior to any accommodation made. (Check with the Center for Learning and Teaching for their scheduling guidelines.)

Mastery Topics

Topic	Section	Description
(1)	§7.5	Permutations and Combinations
(2)	§1.1	Linear Equations in One Variable
(3)	§1.2	Functions
(4)	§1.3	Linear Functions
(5)	§1.5	Systems of Linear Equations
(6)	§1.6	Applications of Functions
(7)	§3.1 – 3.2	Matrices
(8)	§3.3 – 3.4	Matrix Equations
(9)	§4.1 – 4.2	Linear Programming
(10)	§2.1	Solving Quadratic Equations
(11)	§2.2	Parabolas
(12)	§2.3	Applications of Quadratic Equations
(13)	§2.5	Curve Fitting
(14)	§9.1 – 9.2	Limits
(15)	§9.3 – 9.7	Derivatives

(16)	§9.8 – 10.2	Derivative Rules

Course Schedule

Week	Dates	Lecture Material	Assignments
1	8/20	Section 7.5	
2	8/25, 8/27	Section 1.1, 1.2, 1.3	Mastery 1 - 4 (8/28)
3	9/1, 9/3	Section 1.5, 1.6	
4	9/8, 9/10	Section 3.1, 3.2, 3.4	Mastery 5 - 7 (9/11) Redo 1 - 4
5	9/15, 9/17	Section 3.4, 3.3	
6	9/22, 9/24	Section 4.1, 4.2	Mastery 8 - 9 (9/25) Redo 1 - 7
7	9/29, 10/1	Section 2.1, 2.2	
8	10/6, 10/8	Section 2.3, 2.5	Mastery 10 - 13 (10/9) Redo 1 - 9
9	10/13, 10/15	Section 9.1, 9.2	
10	10/20, 10/22	Section 9.3, 9.4	
11	10/27, 10/29	Section 9.5, 9.6, 9.7	Mastery 14 - 15 (10/30)
12	11/3, 11/5	Section 9.8, 9.9	
13	11/10, 11/12	Section 10.1, 10.2	Mastery 16 Redo 1 - 15
14	11/17	Review	
	11/24	8:00 - 12:00	Redo 1- 16