Math 109 Syllabus (Spring 2021)

Mathematics for the Social & Management Sciences

Instructor: Austin Hitz

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Office Hours: M,T,Th,F 12-12:50pm or after class or by Appointment

Class Time: Mon, Tue, Wed, Thur 2-2:50pm

Location: Live Zoom sessions

Course Description: The study of linear equations, matrices, linear programming, exponential growth and decay, mathematics of finance, and differential calculus with emphasis on applications. 4 credits

Prerequisites: Math 100, Math 107, or a suitable placement test.

Course Text: *Mathematical Applications for the Management, Life, and Social Sciences*, 12th Ed., by Harshbarger & Reynolds (Published by Cengage) **ISBN**: 978-1-337-62534-0
Topics include most of those in Chapters 1-3, 5-6, and 9-11 (not covered in that order).

Calculator: You will need a calculator during parts of the semester. A graphing calculator will prove to be especially useful. The TI graphing calculators are the most common and familiar types. Computers, iPads, SMART watches, and calculators with a "QWERTY" keyboard are not permitted during exams or quizzes.

Modality of Course: This course is scheduled as and intended to be presented in a virtual format.

Our main method of communication will be through email and Canvas (our course management system at UWSP). Canvas will contain all assignments, quizzes, exams, handouts, course work, grades, and other class material. Our live Zoom sessions can also be accessed from Canvas.

- Virtual students will attend lectures live via Zoom.
- To submit homework, quizzes, and exams they must be uploaded as pdf files to Canvas.

Brief Covid-19 Information:

Face Coverings:

- At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the **Disability and Assistive Technology Center** to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.

Other Guidance:

- Please monitor your own health each day using the screening tool. If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
    - As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.

Quantitative Literacy Learning Outcomes: Students will develop the following communication skills and problem-solving approaches to applied problems in fields such as business, economics, life sciences, and social sciences.:

- Select, analyze, and interpret appropriate numerical data used in everyday life in a numerical and graphical format
- Identify and apply appropriate strategies of quantitative problem solving in theoretical and practical applications
- Construct a conclusion using quantitative justification

Teaching Methods:

- A variety of methods will be used to teach the course including traditional lecture, class discussion, working in groups, and video presentations.
- Coursework will consist primarily of weekly homework assignments, quizzes, tests, and a final cumulative exam.

My Expectations of Students:

- It is expected that you will attend class, read/review the chapters in a timely fashion, and actively participate in learning the material.
- It is also expected that you keep up with the given assignments, ask questions when topics are unclear, and utilize your resources such as office hours or tutoring.
- All coursework must be of your own as cheating/plagiarism will not be tolerated as in UWSP rules and guidelines.
- All students are expected to behave politely and professionally.

Attendance Policy: It is imperative to attend all classes and it is your responsibility to communicate with the instructor if a class is missed. You will be held responsible for learning the material missed.

Late Work Policy: Be sure to pay close attention to deadlines—there will be no make-up assignments, quizzes, or exams. If there is compelling reason for an absence (and documentation) a student may be allowed to make up an assignment with the instructor's permission.

Course Grade Breakdown:

Unannounced and Announced Quizzes……20%

Exam 1……..20%

Exam 2……..20%

Exam 3……..20%

Cumulative Final Exam……20%

Total ……...100%

*Missing a test or quiz without documentation for the absence will result in a zero score.

Grading Scale:

Percentage	93	90	87	83	80	77	73	70	67	60
Grade	A	A-	B+	B	B-	C+	C	C-	D+	D

Homework: Each day a list of homework problems will be given in class. These lists of assigned problems will be the *minimal* list of problems which you need to understand in order to do well in the course. It is imperative to complete the homework, so be sure to keep up with the assigned problems and ask questions on material/problems you do not understand. The homework will not be graded, but it is necessary that you practice the problems on your own.

Unannounced Quizzes: Throughout the semester there will occasionally be quizzes that are not listed on the course schedule. You cannot make up an unannounced quiz if you miss one, but the 2 lowest unannounced quiz scores will be dropped at the end of the semester.

Announced Quizzes and Exams: These may not be made up if missed, unless arrangements are made with the instructor ahead of time or if there is a legitimate absence/excuse (must be documentable). If an emergency or serious situation occurs, you must contact me as soon as possible to discuss arrangement options. Any graded material will have to be withheld from the rest of the class until everyone has completed the material in question.

Disability Statement: UWSP provides students with disabilities reasonable accommodations to participate in educational programs, activities, and services. Students with disabilities requiring accommodations to participate in class activities or meet course requirements should contact me as early as possible. If you have a disability or acquire a condition during the semester where you need assistance, please contact the Disability and Assistive Technology Center on the 6th floor of Albertson Hall (library) as soon as possible. DATC can be reached at 715-346-3365 or via DATC@uwsp.edu.

Special Assistance: Please let me know as soon as possible if you are having difficulty with the course/content. We can make arrangements to meet up, establish tutoring, or other accommodations to try to facilitate your learning.

Extra Help and Tutoring: The Tutoring-Learning Center (TLC) offers free group, drop-in, and individual tutoring to support you in your math classes. The tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and math content knowledge to help others succeed. Discussing mathematical concepts and practicing problems together clarifies and solidifies knowledge, and the tutors are eager to study with you. If you have questions about the schedules or would like to make an appointment, please contact the TLC via email (tlctutor@uwsp.edu) or phone (715-346-3568) for information.

Math and Science Tutoring – Spring 2021

What	Details	Schedule	Cost
Drop-In Tutoring	Flexible attendance	https://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx	Free
One-on-One Tutoring	Weekly attendance required	Complete online request form here: https://www.uwsp.edu/tlc/Pages/request-math-science-tutoring.aspx	Free

Gaining the Most Out of the Course: Studying and learning styles are very personal and different. In order to gain the most out of the course I suggest taking notes, reading the chapters, completing homework on time, reviewing past course work, asking questions, utilizing office hours, finding fellow students to study with (remotely), and most importantly *not procrastinating*!!

Tentative Schedule/Outline:

Week	Dates	Sections	Topic
1	January 25 - 28	Intro & 0.3 0.4 1.2 1.3	Course Intro & Integral Exponents Radicals and Rational Exponents Functions Linear Functions
2	February 1- 4	1.6 2.1 2.2 2.3 & **Quiz 1**	Apps of Functions in Business & Economics Quadratic Equations Quadratic Functions Business Applications and **Quiz 1**
3	February 8 - 11	2.4 Appendix A 9.1 9.1 (and 0.6)	The Special Functions Using a Graphing Calculator or Graphing App Limits: Graphically Limits: Algebraically (and Factoring Review)

4	February 15 - 18	9.3 9.3 9.4 9.8 & **Quiz 2**	Average Rate of Change Instantaneous Rate of Change: The Deriv. Derivative Formulas (shortcuts) Higher Order Derivatives and **Quiz 2**
5	February 22 – 25	9.5 9.5 9.6 **Exam I**	The Product Rule The Quotient Rule The Chain Rule **Thursday, February 25**
6	March 1 - 4	5.1 11.2 5.2 11.1	Exponential Functions Derivative of Exponential Functions Logarithmic Functions Derivative of Logarithmic Functions
7	March 8 - 11	10.1 10.2 and **Quiz 3**	1st Derivative and Graphs 2nd Derivative and Graphs and **Quiz 3**
8	March 15 - 18	Review **Exam II**	Review for Exam II **Wednesday, March 17**
9	March 29 – April 1	10.3 10.4 10.4 and **Quiz 4**	Optimization: Business & Economics Applications of Max and Mins More Applications of Max & Min and **Quiz 4**
10	April 5 - 8	6.1 6.2 6.3	Simple Interest Compound Interest Future Value
11	April 12 - 15	6.4 6.5 11.1 & 11.2 **Quiz 5**	Present Value Loans and Amortization Applications: Exponential & Log Derivatives **Quiz 5**
12	April 19 - 22	3.1 & 3.2 3.3	Introduction to Matrices Gauss-Jordan Elimination

		3.3 3.4	Matrix Application Problems (multiple solutions) Inverse of a Square Matrix
13	April 26 - 29	4.1 4.2 and **Quiz 6**	Linear Inequalities in Two Variables Linear Programming: Graphical Models & **Quiz 6**
14	May 3 - 6	**Exam III**	More Linear Programming Applications **Thursday, May 6**
15	May 10 - 13	Review Ch 9-11 Review Ch 3-6	In-class review for Final Exam—Day 1 In-class review for Final Exam—Day 2
	Tuesday, May 18	**12:30 - 2:30 PM**	**Final Exam**