Math 109—Mathematics for the Social & Management Sciences
The study systems of linear equations, matrices, linear programming, exponential growth and decay,
mathematics of finance, and differential calculus with emphasis on applications.   4 credits

Gretchen Renfert	**Availability**		**Course Meeting Times**		
	Day Time		Sec Time Room		
Office: B152 Science Bldg	M-R **10:00AM – 11:30AM**		1 **9 AM** MTWR **SCI A210**		
Phone: 715-346–2919	M-R **1:00PM – 1:40 PM**		2 **2 PM** MTWR **SCI A208**		
* email: grenfert@uwsp.edu	*Or by appointment*				
(* preferred method of contact)					

Text (rental): *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.

Calculators: You will need a calculator during the course of the semester. A graphing calculator may
        prove to be especially useful.   The TI graphing calculators are most familiar to me.
        Computers, phones, iPads, SMART watches, and calculators with a "QWERTY" keyboard
        are not allowed during exams or quizzes.

        * You will not always be allowed to use a calculator on all parts of quizzes and tests,
          so do not become too dependent on using them.

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

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:

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

Evaluation: Final course grades will be determined by the following:

        15 % **Quizzes**
        20 % **Exam I**   (in class on **Thursday,   Oct 3**)
        20 % **Exam II**   (in class on **Thursday,   Oct 31**)
        20% **Exam III**   (in class on **Thursday,   Dec 5**)
        25% **Comprehensive Final Exam**   **Tuesday, Dec 17**   or **Wednesday, Dec 18**
        100%   **10:15AM – 12:15 PM**   **2:45PM – 4:45 PM**

Course Grades (%) at or above	93	90	87	83	80	77	73	70	67	60
will receive at least a grade of	A	A -	B +	B	B -	C +	C	C -	D +	D

  * I reserve the right to exercise discretion in raising a student's grade if the final weighted average does
     not appear to reflect the quality of a student's work (for example, because of one low exam score early in
     the course). I will not use discretionary judgments to lower a student's final grade.

Homework: Almost every day a list of homework problems will be given in class. Each of these will be a *minimal* list of problems which you need to understand in order to do well in this course. Doing the homework is extremely important, so make sure you stay on top of it and ask questions on whatever you don't understand. The homework will not be graded, but it is highly recommended that you practice doing problems on your own.

* **Attendance** is expected at every class meeting. Everyone becomes ill sometimes. If you become ill, I expect you to make a reasonable effort to come to class. If the illness or other emergency require absence from class, I expect you to make every attempt to keep up with what is being taught by checking CANVAS, following in your book and making every attempt to do the homework.

* **Quizzes** and **Exams** MAY **NOT** BE MADE UP unless arranged with me ahead of time, and then only for a sufficient reason.

If a dire emergency occurs, contact me as soon as possible to see if an exception is in order.

Incompletes: A grade of incomplete may be given when circumstances arise which are beyond the student's control and the student is unable to complete the course *IF* the student was passing when the circumstances arose.

Disability Accommodations: Reasonable accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodations needed for the course. For information on accommodations available to students with disabilities, call 715-346-3365, visit the Disability and Assistive Technology Center (DATC) in room 609 of the Learning Resources Center, or visit their website: http://www.uwsp.edu/disability/Pages/default.aspx .

CANVAS   Our course management system at UWSP

To access CANVAS, use your regular campus logon ID and password, and then click on our course:
                 MATH 109   (Mathematics for Social & Management Sciences)

Homework assignments, handouts, class work, grade information, and other class announcements can be found on the web through CANVAS.

All students are expected to know the UWSP Community **Rights & Responsibilities** and the **Student Academic Standards and Disciplinary Procedures** found on the Dean of Students webpage at http://www.uwsp.edu/dos/Documents/CommunityRights.pdf.

Food/Beverage : I would prefer that you not eat in class. It is a distraction (to me).

Cell Phones: I understand that occasionally you may want to take a picture of what is on the board. Other than that, cell phones should be silenced and put away once class begins.

<u>**For Academic Support:**</u>

1) Ask questions as they arise.

2) Come to see me before or after class, stop by during my office hours, or check to see if I am available at other times.

3) Tutoring services are available for this course. **The Math Help Room** in the Science Building offers <u>free</u> drop-in tutoring just off the Main Lobby of the older part of the building, room **SCI A113A**.

4) **The Tutoring Learning Center** (lower level of the **ALB**) offers support as well.

Tutoring

The Tutoring-Learning Center (TLC) and the Department of Mathematical Sciences offer free group and drop-in tutoring to support you in your math classes. In addition, the TLC offers the option for individual math tutoring sessions. 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:
1. Visit the TLC in ALB 018 (library basement),
2. Email (tlctutor@uwsp.edu), or
3. Call (715) 346-3568 for information.

Math and Science Tutoring – Fall 2019

What	Details	Schedule	Cost
Drop-In Tutoring Center	**DUC 205**	https://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx (Begins the 2nd week of class)	**Free**
Group Tutoring	Based on course section	https://www.uwsp.edu/tlc/Pages/schedules.aspx (Begins the 3rd week of class)	**Free**
One-on-One Tutoring	By appointment	https://www.uwsp.edu/tlc/Pages/CA-tutoring.aspx Beginning the 2nd week of class, visit **ALB 018** (in the library basement) to make a request.	**$9.00/session*** *Fee waived for students listed as low-income*
The Math Room	**SCI A113A**	https://www.uwsp.edu/mathsci/Pages/tutoring.aspx	**Free**
The MathPad *Math 90, 95, 107 only*	**CCC 302**	https://www.uwsp.edu/mathsci/Pages/tutoring.aspx	**Free**
The Physics Room	**SCI A105**	https://www.uwsp.edu/physastr/Pages/Tutoring.aspx	**Free**

We will have **Group Tutoring available!

* Tentative Math 109 Schedule*

Week	Dates	Sections	Topic
1	Sept 3 - 5	0.3	Integral Exponents
		0.4	Radicals and Rational Exponents
		1.2, 1.3	Functions, Linear Functions
2	Sept 9 - 12	1.6	Apps of Functions in Business & Economics
		2.1, 2.2	Quadratic Functions
		2.3	Business Applications
		2.4 & Quiz 1	The Special Functions and Quiz 1
3	Sept 16 - 19	9.1	Limits Graphically
		9.1	Limits Algebraically
		9.2	Continuous Functions & Limits at Infinity
		9.3	The Derivative
4	Sept 23 - 26	9.4	Derivative Formulas
		9.4	Applications of the Derivative
		9.5	The Product Rule
		9.5	The Quotient Rule
5	Sept 30 – Oct 3	9.6	The Chain Rule
		Exam I	Thursday, Oct 3
6	Oct 7 - 10	5.1	Exponential Functions
		5.2	Logarithmic Functions
		11.1	Derivatives of Logarithmic Functions
		11.2	Derivatives of Exponential Functions
7	Oct 14 - 17	5.3	Apps of Exponential & Log Functions
		9.8	Higher Order Derivatives
		10.1 & Quiz 2	1st Derivative and Graphs and Quiz 2
8	Oct 21 - 24	10.2	2nd Derivative and Graphs
		10.3	Optimization
9	Oct 28 – 31	10.3	Optimization (continued)
		10.4	Applications of Maxima & Minima
		Exam II	Thursday, Oct 31
10	Nov 4 - 7	1.4	Graphing Utilities
		6.1	Simple Interest
		6.2	Compound Interest
		6.3	Future Value
11	Nov 11 - 14	6.4	Present Value
		6.5	Loans and Amortization
		Review	Review for Quiz
		Quiz 3	Quiz 3
12	Nov 18 - 21	3.1 & 3.2	Introduction to Matrices
		3.3	Gauss-Jordan Elimination
		3.3	Matrix Application Problems (multiple solutions)
		3.4	Inverse of a Square Matrix
13	Nov 25 – 27 *Thanksgiving Week*	4.1	Linear Inequalities in Two Variables
		4.1	(continued)
		4.2	Linear Programming: Graphical Models
			Thanksgiving
14	Dec 2 - 5	4.1 & 4.2	More Linear Programming Applications
		Exam III	Thursday, Dec 5
15	Dec 9 - 12	Chpt 9-11, 6 & 3	In-class review for Final Exam
Final Exam	Tuesday, Dec 17	9 AM Class	10:15AM – 12:15 PM, Science A210
	Wednesday, Dec 18	2 PM Class	2:45PM – 4:45 PM, Science A208