MATH 118   **Pre-Calculus Algebra**   **SPRING 2021**
M,T,W,Th 1 – 1:50 pm

INSTRUCTOR: Dr. Kavita Bhatia

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OFFICE HOURS: M, T, Th 10am -11am, and by appointment. All office hours will be conducted via Zoom. Link for office hours is available on the Course Home page in Canvas.

CLASS FORMAT: All classes will be held via Zoom. You can access Zoom through your Canvas page. You should see the class meetings scheduled there. Click on the day of the meeting to start the meeting. All Zoom sessions will be recorded, and the recordings will be posted. I will also post a pdf file of the presentation if there is additional content added to the slide during the lecture.

REQUIRED MATERIALS for the COURSE:

- TEXT: *Algebra and Trigonometry* by Stewart, 4th Ed. An e-book is available with your Webassign account. You may purchase or rent a hard copy of the book from Cengage, if you wish.

- WebAssign Course Access Code to do your homework. An access code can be purchased from the Campus Bookstore or online. Cengage Unlimited, 1 term Printed Access Card, ISBN 978 0 357 70003 7
- A graphing calculator. Preferred calculator is the TI-83 or TI-84. Calculators like the TI-89 that have a built in CAS will not be allowed. Cell phone calculators **will not be allowed** on exams and quizzes.

PREREQUISITES: Math 107 (College Algebra) or a suitable placement score.

COURSE DESCRIPTION; 4 cr. Topics include concepts, graphs, and properties of functions, inverse and algebraic functions, techniques of graphing, conic sections, linear and nonlinear systems, arithmetic and geometric series, mathematical induction and the binomial theorem. Preparation for 120 if you did not place into 120. Prereq: 107 or suitable placement test score. GDR: MATH BS BM/BFA. GEP: QL.

COURSE OBJECTIVES:
- Solving Equations Algebraically and Graphically
- Solving Rational-Function Inequalities via Sign Charts
- Functions
   - Definition and Properties (sums, differences, products, quotients, roots, compositions, inverses, average rate of change and difference quotients)
   - Polynomial and Rational Functions (Factor Theorem, Rational Zeros Theorem, long and synthetic division)
   - Graphs of functions (intercepts and zeros, asymptotes, symmetry, transformations)
   - Exponential and Logarithmic Functions
- Conic Sections (parabolas, ellipses, hyperbolas)
- Solving Systems of Linear Equations (substitution and elimination by hand; rref)
- Partial Fraction Decompositions
- Sequences (e.g., arithmetic, geometric)
- Sigma Notation and Geometric Series

COURSE TECHNOLOGY REQUIREMENTS: View this website to see [minimum recommended computer and internet configurations for Canvas.](#) You will also need access to the following tools to participate in this course: Webcam, Microphone, a stable internet connection (don't rely on cellular)

ATTENDANCE: You are expected to attend all classes. In the event of an absence, you are responsible for making up the material that you missed. Attendance quizzes will be given randomly.

GRADING POLICY: Your course grade will be computed as follows:

Quizzes & Assignments	15%
WebAssign Homework	15%
Attendance	5%
Exams (2 x20%)	40%
Final Exam	25%
Total	**100%**

The above distribution may change at the discretion of the instructor.

GRADING SCALE: Grades will be assigned according to the scale below:

93%--100%	A	77%--79%	C+
90%--92%	A-	73%--76%	C
87%--89%	B+	70%--72%	C-
83%--86%	B	67%--69%	D+
80%--82%	B-	60% -- 66%	D
		59% or less	F

HOMEWORK: Homework will be assigned at the end of every class period. You will be using the Web Assign software to do your homework. Be prepared to spend 1-2 hours on each day's assignment. Homework will be due twice a week on Wednesday's and Sunday's by midnight.

POLICY on LATE HOMEWORK: For up to 7 days after the assignment due date extensions will be granted. However, there will be a 20% penalty on all questions answered after the assignment due date.

QUIZZES: There will be a quiz most weeks on Thursday. There will be NO make-up on the quizzes. **You will need a webcam to take the quiz.**

EXAMS: There will be two in class exams and a two-hour final. Tentative exam dates are listed in the calendar at the end of the syllabus. The final exam will be comprehensive. **Your final exam is scheduled for 5/17/2021, Monday from 2:45 - 4:45 PM.**

TUTORING SUPPORT: The Tutoring-Learning Center (TLC) offers **FREE** virtual 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. The TLC will offer two main forms of math tutoring during Spring 2021:

- **Drop-In Tutoring**. Tutors are waiting in a Zoom room where students can "drop-in" for assistance. No appointment or registration is required and attendance is flexible. The schedule and Zoom links can be found here: http://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx.

- **One-on-One Tutoring**. Tutors are available for weekly, recurring appointments. Weekly attendance is <u>required</u>, as this service is designed for long-term assistance. To sign up, students can submit a request form through the TLC webpage: https://www.uwsp.edu/tlc/Pages/Mathandscischedules.aspx.

ACCOMMODATION OF RELIGIOUS BELIEFS: Any student who cannot be present for a scheduled exam due to a religious observance will be provided with an alternative way of fulfilling that course requirement, provided the student notifies me ahead of time.

ACADEMIC MISCONDUCT: Academic integrity and honesty are central to the mission of this institution. 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.

Tentative Weekly Schedule – Spring 2021

Week	Approximate text sections to discuss this week	Events this week
1. Jan. 25 – 28	Review 1.2	
2. Feb. 1– 4	1.3, 1.7, 1.9	Quiz 1
3. Feb. 8– 11	1.10, 2.1-2.3	Quiz 2
4. Feb. 15 – 19	2.4 – 2.6	Quiz 3
5. Feb. 22 – 25	2.6 – 2.8	Quiz 4
6. March 1 – 4	Review, 3.1	**Exam 1** Thursday March 4
7. March 8 – 6	3.2-3.4	Quiz 5
8. March 15 – 13	3.6, 3.7	Quiz 6, Assignment
March 22 – 25		*Spring Break, no classes this week*
9. March 29 – April 1	4.1 - 4.3	
10. April 5 – 8	4.4 – 4.5	Quiz 7
11. April 12 – 15	4.6, 10.1, 10.2	Quiz 8
12. April 19 – 22	10.3, Review	**Exam 2** Thursday, April 22
13. April 26 – 29	11.1, 12.1, 12.2	Quiz 9
14. May 3 – 6	12.3, 12.4, 13.1	Quiz 10
15. May 10 – 13	13.2, 13.3, Review	Assignment on Ch 13
16. May 17 - 20	FINALS WEEK	**Final Exam Monday, May 17 from 2:45 – 4:45 pm**
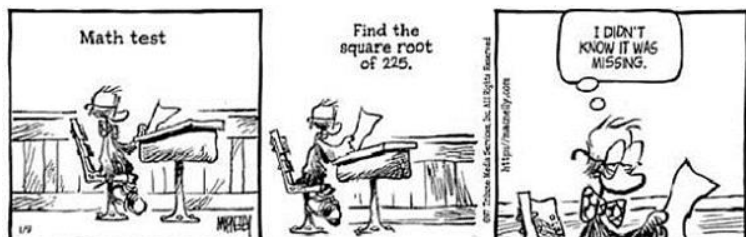
List of sections from the text

- 1.2: Graphs of Equations in Two Variables; Circles
- 1.3: Lines
- 1.7: Inequalities
- 1.9: Solving Equations and Inequalities Graphically
- 1.10: Modelling Variation
- 2.1: Functions
- 2.2: Graphs of Functions
- 2.3: Getting Information from the Graph of a Function
- 2.4: Average Rate of Change of a Function
- 2.6: Transformations of Functions
- 2.7: Combining Functions
- 2.8: One-to-One Functions and Their Inverses
- 3.1: Quadratic Functions and Models
- 3.2: Polynomial Functions and Their Graphs
- 3.3: Dividing Polynomials
- 3.4: Real Zeros of Polynomials
- 3.6: Rational Functions
- 4.1: Exponential Functions
- 4.2: The Natural Exponential Function
- 4.3: Logarithmic Functions
- 4.4: Laws of Logarithms
- 4.5: Exponential and Logarithmic Equations
- 4.6: Modeling with Exponential and Logarithmic Functions
- 10.1: Systems of Linear Equations in Two Variables
- 10.2: Systems of Linear Equations in Several Variables
- 10.3: Partial Fractions

- 11.1: Matrices and Systems of Linear Equations

- 12.1: Parabolas

- 12.2: Ellipses

- 12.3: Hyperbolas

- 12.4: Shifted Conics

- 13.1: Sequences and Summation Notation

- 13.2: Arithmetic Sequences

- 13.3: Geometric Sequences