MATH 107
Intermediate Algebra

Spring 2021

Instructor: **Dr. Sebastian Zamfir** Email: szamfir@uwsp.edu

MATH 107 - Algebra for Pre-Calculus

Description:
Factoring and simplifying rational expressions, interval notation, solving absolute value equations, linear inequalities, rules of exponents and logs, solving exponential equations, functional notation, evaluation of functions and graphs.

Prerequisites:
MATH 95 or suitable placement test score

2 cr.

Delivery Format: ONLINE – CANVAS

Video-lectures will be the equivalent of four class periods, each with a duration of 50 minutes, every week.

Office Hours: via Zoom (links posted on CANVAS)
Every Monday 2 – 3 PM
Every Friday 11 AM – 12 PM

OR by appointment. Send me an email and I will be happy to schedule a Zoom meeting with you, as needed and requested.

Tutoring via TLC: The Tutoring-Learning Center (TLC) offers free group, drop-in, and individual tutoring to support you in your physics and astronomy classes. The tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and content knowledge to help others succeed. Reviewing, discussing, and practicing concepts 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	Via Zoom	https://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx	Free
Group Tutoring	Via Zoom, based on course section	https://www.uwsp.edu/tlc/Pages/schedules.aspx	Free
One-on-One Tutoring	By appointment, via GoBoard. Weekly attendance required.	Complete online request form here: https://www.uwsp.edu/tlc/Pages/request-math-science-tutoring.aspx	Free

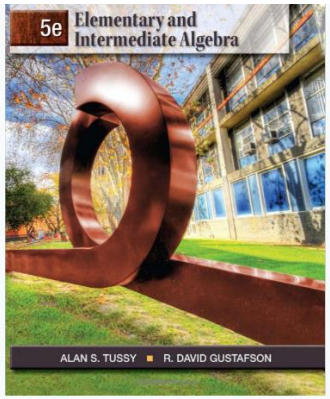
Tutoring via CANVAS/MathPad: There is yet another free tutoring option through the MathPad Canvas shell. The easiest way for students to find the daily zoom sessions is to self-enroll in the "course." The self-enrollment link is: **https://uwstp.instructure.com/enroll/GJRKW8**

The MathPad is a tutoring center dedicated to serving the needs of students in MATH 90, 95, and 107. This semester we will be providing that tutoring through Zoom instead of our normal face-to-face setting.

Daily Zoom sessions will run from 9:00 am to 7:00 pm Monday - Thursday and 9:00 am to 1:00 pm on Fridays. Drop in anytime we are open to ask for help with your homework or test review.

The Zoom sessions will be linked through this Canvas shell so you can always come here first to sign in if you can't find the daily email invitation.

Textbook: Elementary and Intermediate Algebra 5ed., **Tussy** and **Gustafson** *(should be available at the store)*



Course website: https://uwstp.instructure.com/courses/392269. Log on using your UWSP login and password. ***This website is the main hub-interface for this course. Here you will find your grades, homework assignments, exams, etc.***

Calculators:

- No phones and phone calculators are to be used with the course.
- Calculators: You may use any four-function, scientific, or graphing calculator,
- Invalid calculators including pocket organizers, handheld or laptop computers, electronic writing pads or pen-input devices (the Sharp EL 9600 is permitted), calculators built into cellular phones or other wireless communication devices, calculators with a typewriter keypad with keys in QWERTY format (calculators with letter keys not in QWERTY format are permitted), calculators with built-in computer algebra systems, prohibited calculators in this category include: Casio: Algebra fx 2.0, ClassPad 300, and all model numbers that begin with CFX-9970G, Texas Instruments: All model numbers that begin with TI-89 or TI-92, and TI-Nspire CAS, Hewlett-Packard: hp 48GII and all model numbers that begin with hp 40G or hp 49G. Calculators which have been modified such as calculators with paper tape (remove the tape), calculators that make noise (turn off the sound feature), calculators that can communicate wirelessly with other calculators (completely cover the infrared data port with heavy opaque material, such as duct tape or electrician's tape (includes Hewlett-Packard HP-38G series and HP-48G)).

Attendance rules: The measure of your attendance is your submission of online assignments, quizzes, exams by the set deadline.

TOPICS:

Chapter – Section(s)	**Learning Objectives** By the end of these sections, students will be able to…
Chapter 8 – Sections 8.4, 8.5 Transition to Intermediate Algebra	***8.4 Solving Compound Inequalities*** • Find the intersection and union of two sets • Solve compound inequalities containing the word AND • Solve double linear inequalities • Solve compound inequalities containing the word OR
	8.5 Solving Absolute Value Equations and Inequalities • Solve equations of the form $\|x\| = k$ • Solve equations with two absolute values • Solve inequalities of the forms $\|x\| < k$ and $\|x\| > k$
Chapter 5 – Sections 5.1, 5.2 Exponents and Polynomials	***5.1 Rules for Exponents*** • Identify bases and exponents • Multiply and Divide exponential expressions that have like bases • Raise exponential expressions to a power • Find powers of products and quotients
	5.2 Zero and Negative Exponents • Use the zero-exponent rule • Use the negative integer rule • Use exponent rules to change negative exponents in fractions of positive exponents • Use all exponent rules to simplify expressions
Chapter 9 – Section 9.2 Radical Expressions and Equations	***9.2 Rational Exponents*** • Simplify expressions of the forms $a^{1/n}$ and $a^{m/n}$ • Convert between radicals and rational exponents • Simplify expressions with negative rational exponents

	• Use rules for exponents to simplify expressions • Simplify radical expressions
Chapter 6 – Section 6.1 Factoring and Quadratic Equations	***6.1 The Greatest Common Factor; Factoring by Grouping*** • Find the greatest common factor from a list of terms • Factor out the greatest common factor • Factor by grouping
Chapter 8 – Sections 8.6, 8.7 Transition to Intermediate Algebra	***8.6 Review of Factoring Methods: GFC, Grouping & Trinomials*** • Factor out the greatest common factor (GCF) • Factor by grouping • Use factoring to solve formulas for a specified variable • Factor trinomials • Use substitution to factor trinomials • Use the grouping method to factor trinomials
	8.7 Review of Factoring Methods: The Difference of Two Squares; the Sum and Difference of Two Cubes • Factor the difference of two squares • Factor the sum and difference of two cubes
Chapter 7 – Section 7.1, 7.2, 7.3, 7.4, 7.5, 7.6 Rational Expressions and Equations	***7.1 Simplifying Rational Expressions*** • Evaluate rational expressions • Find numbers that cause a rational expression to be undefined • Simplify rational expressions • Simplify rational expressions that have factors that are opposites
	7.2 Multiplying and Dividing Rational Expressions • Multiply rational expressions • Divide rational expressions • Convert units of measurement
	7.3 Adding and Subtracting with Like Denominators; Least Common Denominators

	• Add and subtract rational expressions that have the same denominator • Find the least common denominator • Build rational expressions into equivalent expressions
	7.4 Adding and Subtracting with Unlike Denominators • Add and subtract rational expressions that have the unlike denominator • Add and subtract rational expressions that have denominators that are opposite
	7.5 Simplifying Complex Fractions • Simplify complex fractions using division • Simplify complex fractions using the LCD
	7.6 Solving Rational Equations • Solve rational equations • Solve for a specified variable in a formula
Chapter 8 – Sections 8.2, 8.3 Transition to Intermediate Algebra	***8.2 Functions*** • Define relation, domain, and range • Identify functions • Use function notation • Find the domain of a function • Graph linear functions • Write equations of linear functions • Evaluate polynomial functions
	8.3 Graphs of Functions • Find function values graphically • Find the domain and range of a function graphically • Graph nonlinear functions • Translate graphs of functions • Reflect graphs of functions • Find function values and the domain and range of polynomial functions graphically • Use the vertical line test

Chapter 11 – Sections 11.1, 11.2, 11.3, 11.4, 11.5, 11.6., 11.7 Exponential and Logarithmic Functions	***11.1 Algebra and Composition of Functions*** • Add, subtract, multiply, and divide functions • Find the composition of functions • Use graphs to evaluate functions • Use composite functions to solve problems
	11.2 Inverse Functions • Determine whether a function is a one-to-one function • Use the horizontal line test to determine whether a function is a one-to-one function • Find the equation of the inverse of a function • Find the composition of a function and its inverse • Graph a function and its inverse
	11.3 Exponential Functions • Define exponential functions • Graph exponential functions • Use exponential functions in applications involving growth or decay
	11.4 Logarithmic Functions • Define logarithm • Write logarithmic equations as exponential equations • Write exponential equations as logarithmic equations • Evaluate logarithmic expressions • Graph logarithmic functions • Use logarithmic formulas and functions in applications
	11.5 Base-e Exponential and Logarithmic Functions • Define the natural exponential functions • Graph the natural exponential functions • Use the base-e exponential formulas and functions in applications • Define base-e logarithms • Evaluate natural logarithmic expressions • Graph the natural logarithmic function

	• Use base-e logarithmic formulas and functions in applications
	11.6 Properties of Logarithms • Use the four basic properties of logarithms • Use the product rule for logarithms • Use the quotient rule for logarithms • Use the power rule for logarithms • Write logarithmic expressions as a single logarithm • Use the change-of-base formula • Use properties of logarithms to solve application problems
	11.7 Exponential and Logarithmic Equations • Solve exponential equations • Solve logarithmic equations • Use exponential and logarithmic equations to solve problem applications

Grading Policies: You will have the following contribution to your final grade:

Three midterm exams each 15%
Final exam 20%
CANVAS Homework 20%
CANVAS Quizzes 15%

TOTAL: 100%

Your current grades will be kept updated as often as possible on CANVAS. If you have any questions/confusions on the listed grades, please contact me immediately so any errors can be corrected.

The final letter grade will be assigned according to the following scale:

A → 93-100% A- → 90-92.99%
B+ → 87-89.99% B → 83-86.99% B- → 80-82.99%
C+ → 77-79.99% C → 73-76.99% C- → 70-72.99%
D+ → 67-69.99% D → 60-66.99%
F → less than 60%

Midterm Exams: There will be ***three*** midterm exams during the semester. They will be on CANVAS. There will be specific dates selected for each midterm exam. Each midterm is worth 15% of your final grade and is based on the material covered in lectures, homework, and quizzes over the past weeks. Each midterm will cover a distinct segment of the overall material. Each exam will be designed for 60 min.

Tentative dates: Exam 1 – Monday, April 12, Exam 2 – Monday, April 26, Exam 3 – Monday, May 10

Final exam: A **comprehensive 2-hr final exam will be given on Thursday, May 20.** It is worth 20% of your final grade. It will be a CANVAS (online exam).

CANVAS Homework: Every week I will post one homework assignment. Students will be expected to provide detailed (hand-written or typed) step-by-step solutions to the assigned problems. Instructions will be provided on how to submit an electronic file for grading. This homework will contribute 20% toward the final grade. The lowest score of all homework assignments will be dropped at the end of the course period, before calculating the final grade. Only one homework assignment will be dropped!

CANVAS Quizzes: Every week I will post two multiple-choice style quizzes on CANVAS. These quizzes will contribute 15% toward the final grade. The lowest score of all quizzes will be dropped at the end of the course period, before calculating the final grade. Only one quiz will be dropped!

Suggestions for Studying:

1. **Study regularly and constantly.**

There is a lot of material covered. It becomes more and more difficult to keep up with the flow of the course if you do not grasp the new concepts as they arise. Postponing study for the night before an exam rarely pays off.

2. **Do not hesitate to ask for guidance and help via email or requesting a Zoom meeting with me.**
3. **Find someone in the class to study with.**

Absences due to Military Service: You will not be penalized for class absence due to unavoidable or legitimate required military obligations, or medical appointments at a VA facility, not to exceed two (2) weeks unless special permission is granted by the instructor. You are responsible for notifying faculty members of such circumstances as far in advance as possible and for providing documentation to the Office of the Dean of Students to verify the reason for the absence. The faculty member is responsible to provide reasonable accommodations or opportunities to make up exams or other course assignments that have an impact on the course grade. For absences due to being deployed for active duty, please refer to https://www.uwsp.edu/veteran-services/Pages/Call-Up-Guidelines.aspx .

Equal Access for Students with Disabilities: Students with special needs should contact the Office of Disability Services as soon as possible (http://www.uwsp.edu/disability/Pages/default.aspx) in order to request suitable accommodation. UW-Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability.
If modifications are required due to a disability, please inform the instructor, and contact the Disability and Assistive Technology Center to complete an Accommodations Request form. Phone: 346-3365 or Room 609 Albertson Hall.

Religious Beliefs Accommodation: It is UW System policy to reasonably accommodate your sincerely held religious beliefs with respect to all examinations and other academic requirements.
You will be permitted to make up an exam or other academic requirement at another time or by an alternative method, without any prejudicial effect, if:

- There is a scheduling conflict between your sincerely held religious beliefs and taking the exam or meeting the academic requirements; and
- You have notified your instructor within the first three weeks of the beginning of classes (first week of summer or interim courses) of the specific days or dates that you will request relief from an examination or academic requirement.

Academic Honesty: Students are expected to maintain the highest standards of academic integrity. More information on your rights and responsibilities are available at: http://docs.legis.wisconsin.gov/code/admin_code/uws/14.pdf

UWSP 14.01 Statement of principles
The board of regents, administrators, faculty, academic staff and students of the University of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the University of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors.

UWSP 14.03 Academic misconduct subject to disciplinary action.
Academic misconduct is an act in which a student:
(a) Seeks to claim credit for the work or efforts of another without authorization or citation;
(b) Uses unauthorized materials or fabricated data in any academic exercise;
(c) Forges or falsifies academic documents or records;
(d) Intentionally impedes or damages the academic work of others;
(e) Engages in conduct aimed at making false representation of a student's academic performance; or
(f) Assists other students in any of these acts.

Help Resources:

Tutoring	Advising	Safety and General Support	Health
Tutoring and Learning Center helps with Study Skills, Writing, Technology, Math, & Science. 018 Albertson Hall, ext 3568	Academic and Career Advising Center, 320 Albertson Hall, ext 3226	Dean of Students Office, 212 Old Main, ext. 2611	Counseling Center, Delzell Hall, ext. 3553. Health Care, Delzell Hall, ext. 4646

UWSP Service Desk: The Office of Information Technology (IT) provides a Service Desk to assist students with connecting to the Campus Network, virus and spyware removal, file recovery, equipment loan, and computer repair. You can contact the Service Desk via email at techhelp@uwsp.edu or at (715) 346-4357 (HELP) or visit: https://www.uwsp.edu/infotech/Pages/ServiceDesk/default.aspx

I will post all video-lectures on CANVAS:

Lecture materials and recordings for Math107 are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

Final note: Common courtesy dictates that students attending the live Zoom office hour-sessions should be mindful of their classmates. While online, students should refrain from engaging in disrespectful arguments, using offensive words, etc.