

MATH 105
Mathematics Applications, Appreciation & Skills
Spring 2024

SECTION 1: MWF 3:00 – 3:50 CCC 212

Final Exam Session: Monday, May 13, 10:15 AM

SECTION 2: MWF 10:00 – 10:50 CCC 212

Final Exam Session: Thursday, May 16, 2:45 PM

Instructor: Terry Rood
Office: CCC 302A (inside the MathPad)
Email: trood@uwsp.edu
Office Hours: 11:00 – 12:30 MWF
2:00 – 3:00 TUES
1:00 – 2:00 THURS

Text: The Heart of Mathematics: An Invitation to Effective Thinking, 3rd.ed. by Edward Burger & Michael Starbird.

Prerequisite: Math 90 or a suitable placement score.

COVID MASKING POLICY: Masks are currently optional on campus. Please respect the choice of anyone who decides to wear a mask.

Attendance Policy:

Attendance is **EXPECTED** at each class period. It is your responsibility to obtain notes and information from any missed class time. All arrangements for make-up exams must be made before the scheduled exam time, and then will be given only for sufficient reason. Late exams will not be given for unexcused absences. Absences for serious illness, family emergencies, military duty or University sponsored activities will be excused provided you adequately notify me by email prior to the absence and provide appropriate documentation. Homework assignment due dates may be adjusted for excused absences.

Course Outline:

In this course, we will explore some of the greatest ideas within the realm of mathematics - comparable to the works of Shakespeare and Rembrandt. Mathematics is an artistic endeavor, which is shaped by each person's imagination and creativity. There are three basic goals for this course:

1. To attain a better understanding of some significant mathematical ideas.
2. To sharpen our analytic skills for life issues that are beyond mathematics.
3. To develop a fresh perspective and outlook on your view of the world.

We will cover only part of the text, as there is more than a semester's worth of material presented therein. There will also be a good deal of material from other sources. The "bottom line," so to speak, is to gain an appreciation for mathematics and to discover the power of mathematical thinking in your everyday life. It is essential in this course to have an open mind, strong curiosity, and a willingness to explore and discover. Minimal mathematical background will be assumed.

This course satisfies the Quantitative Literacy Requirement. In particular, it addresses the following:

Quantitative Literacy Learning Outcomes

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

For more information see: <http://www.uwsp.edu/acadaff/Pages/generalEducation.aspx>

Homework: (20% of final grade)

All homework assignments and due dates will be posted on Canvas. Your success in mastering the material presented requires that you complete each assignment and do not fall behind. We will use class time to go over some of your questions regarding the assignments. We might not, however, have enough class time to answer all questions that arise. The tutoring available in the TLC is one place to get HW questions answered. My office hours are a much better place for that. Drop in anytime. Your textbook and classmates are also valuable resources. You will not help yourself by searching for solutions on the internet.

Homework turned in more than one week past the due date will be scored at half credit.

NO LATE HW WILL BE ACCEPTED after the unit exam for which it was assigned.

Exams: There will be 3 exams. (60% of final grade)

Tentative dates: Exam 1 – February 21
Exam 2 – April 3
Exam 3 – Final Exam Week

Again, make-up exams will be available only in very special cases and will be handled on an individual basis. Notification and arrangements in such cases must be made prior to the examination.

Final Research Project: (20% of final grade)

This project is an opportunity to explore and discover a mathematical topic on one's own. Students often select a mathematical topic outside of those covered in our class, learn any necessary background information, and then investigate the topic. This should be a topic that is related to your discipline or personal interests, for instance, or you may choose to depict a mathematical idea in a creative way (via a song or poem, for example) or describe the mathematics underlying an essential aspect of your major/career or a hobby. Students may work individually or with a partner (collaboration is encouraged).

Create a presentation of what you want to teach us about your topic. This can take many forms, including (but not limited to): a formal paper (1000-2000 words), a narrated slide presentation (> 6 minutes or 15 slides minimum), or a narrated video (> 6 minutes). Your presentation must include some use or demonstration of the mathematical content in action. This is very open ended. Run your plan by me for approval before you get too far into it.

We'll talk about this in more detail soon.

Grading and Grading Scale:

Homework:	20%
Exams:	60%
Research Project:	20%

Course letter grades will be based on the scale below,
with +/- marks within each range:

A:	90 - 100
B:	80 - 89
C:	70 - 79
D:	60 - 69
F:	below 60

In accordance with UW system policies, Math 105 is dedicated to a safe, supportive and non-discriminatory environment for all persons regardless of age, race, religion, gender, sexual orientation or disability.

Disability Accommodations: Information regarding Section 504 of the Rehabilitation Act or the Americans with Disabilities Act can be found at the UWSP Disability Resource Center site <http://www.uwsp.edu/disability>. To request any accommodations relevant to this class, please discuss the matter with the staff at the Center and communicate with the instructor for proper accommodations. If your accommodations are sent to the instructor via email, please take time to discuss them in person as well. Their office is located on the first floor of the CCC Building.

You are expected to be fully aware of your rights and responsibilities as a UWSP student:

These are detailed in the UWSP Community Bill of Rights and Responsibilities:

<http://www.uwsp.edu/dos/Documents/CommunityRights.pdf>

<https://www.uwsp.edu/hr/Documents/Discrimination,%20Harassment,%20Title%20IX%20and%20Retaliation%20Prevention%20Final.pdf>

<https://www.wisconsin.edu/regents/policies/consensual-relationships/>

In particular, this includes the UWSP Student Academic Disciplinary Procedures:

<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap17.pdf>

Information concerning accommodations made as per Section 504 of the Rehabilitation Act or the Americans with Disabilities Act can be found at:

<http://www4.uwsp.edu/special/disability/>

SECTIONS TO BE COVERED

* This is a tentative list *

Here are the sections that I intend to cover. There may be some adjustment based on time available and student interest. Additional outside material will also be assigned.

Unit One

How to Math
Chapter One
Chapter Two
Algorithms
Exam 1

Unit Two

Chapter Three
Infinity
Strange Geometry
Exam 2

Unit Three

Chapter Four
Chapter Five
Statistics and Graphing
Math through history
Exam 3 (During Finals Week, not comprehensive)