Course Syllabus for Math 105 Section 7: Exploring Mathematics, Fall 2018

Instructor: Emily Sablan
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Web page: Log in to Blackboard at http://learn.wsu.edu/
Class Meetings: Section 6: TU/TH 9:10 – 10:25 GTZN 21

Credits: 3
UCORE Category: QUAN
Prerequisites: Math 101 or Math 103 with a C or better, or ALEKS math placement score of 45%.

REQUIRED TEXT: The text for this course is *Mathematical Ideas* (WSU custom edition bundle including MyMathLab) by Miller, Heeren and Hornsby. The ISBN is 9781323160558. This text can be purchased at the WSU Student Bookstore (the Bookie). I would recommend using the eBook that comes with the MyMathLab access code. We will not be using the book for written homework.

REQUIRED SUPPLEMENT: Access to MyMathLab is required for this course. The access fee for this is included in the WSU custom version of the textbook if you purchased this new at the Bookie; there is an access card packaged with your textbook. If you did not get this, you can purchase the access online at http://www.mymathlab.com, but contact your instructor for more information first.

COURSE ASSIGNMENTS AND GRADING
The total points you accumulate throughout the semester on the items below will determine your grade:

3 Exams @ 100 points each	300 points
Final Exam	150 points
Writing project	60 points
10 In Class Activities @ 10 points each	100 points
12 Online Homework @ 7.5 points each	90 points
Total	700 points

Your course grade will be determined by the following scale:

93 - 100% A	87 - 89.9% B+	77 - 79.9% C+	67 - 69.9% D+
90 - 92.9% A-	83 - 86.9% B	73 - 76.9% C	60 - 66.9% D
	80 - 82.9% B-	70 - 72.9% C-	0 - 59.9% F

MyMathLab: Math is not a spectator sport. It is learned by doing. Thus, homework is critical to your success in this course. Homework sets are due weekly and will consist of a list of fifteen online homework problems to be completed on the MyMathLab website (worth 7.5 points each). You will have up to three attempts to get each MyMathLab problem correct before you are given the answer and that problem is marked wrong. You can still attempt to get that problem correct by clicking on the "similar exercise" button below the question. If you are having trouble with a homework problem, you can use the "View an Example" or "Help Me Solve This" button to the right of the homework problem in MyMathLab. See the Course Calendar for MyMathLab due dates.

Late homework will NOT be accepted. However, your two lowest MyMathLab homework scores will be dropped.

WRITING PROJECT: You will be working on a writing project (a short research paper) this semester that will help you make connections between the topics we study in class and their real-world applications. The writing project can be found on the "Assignments" section of Blackboard. The writing project must be submitted in a report format, including bibliography. Include a list at the end citing the resources you used to obtain your information: websites, publications, etc. Use complete sentences to report your results, explaining any assumptions that you made, which formula you are using, where you found your data, etc. When calculations are needed, show your work. This can be done in the report or can be on a separate page, but if it's on a separate page, reference the calculations within your report. More details are available in Blackboard.

IN CLASS ACTIVITIES: This component of your grade is based on your participation in weekly in-class activity. Your grade for these will be based in part on whether you were present and participated in the activity and in part on the accuracy of your answers. In class activities cannot be made up or turned in late. However, your two lowest in class participation scores will be dropped.

A guideline for how much work to include would be to show the work for all steps that cannot be done in your head. Also, in this course we will often be just as interested in the process of solving a problem as we are in finding the actual answer, so explaining your steps is important. If you are in doubt about how much work to show, include all steps and explain your reasoning. As long as your work is correct, organized, and legible, you will not lose points for showing "too much" work.

EXAMS: Exams will be 60 minutes long and are scheduled as follows:

Day/Date	Time	Location
Tuesday, September 18th	6:15 – 7:15 pm	Todd 116
Tuesday, October 16th	6:15 – 7:15 pm	Todd 116
Tuesday, November 13th	6:15 – 7:15 pm	Todd 116

Bring your WSU student ID card with you to all exams. Exams will be closed book, closed notes. Calculators are allowed (in fact, required) during exams. **No make-ups will be allowed for exams except for prearranged absences with appropriate documentation.**

FINAL EXAM: There will be a comprehensive final exam. **Early finals will not be given for any reason.** Please make your travel plans accordingly.

Final Exam: Thursday, December 13th 10:10 – 12:10 pm

LATE WORK: Late homework will *not* be accepted. Each stage of the writing project will be accepted late but will lose 25% of the total possible credit for each day that it is late.

ATTENDANCE: It is strongly recommended that you do not miss class. You are responsible for all material covered in this course and for turning in all assignments, regardless of attendance. Attendance will be taken periodically. If circumstances beyond your control cause you to miss class or you are prevented from completing an assignment, please consult with me no later than midnight on the day you must miss.

TECHNOLOGY: A scientific calculator (one that has the functions "log" and "e^x") is required for this course.

Part of the learning experience in this course will also involve the use of the internet. If you do not have internet access, consider arranging an account at one of the campus labs. Information is available from Student Computing Services at the Information Technology Building (ITB), room 2091, 335-0534. Please see me if you are not able to arrange internet access.

A NOTE ABOUT E-MAIL: In general, I find e-mail to be a great communication tool - but it has limitations. I will not discuss homework problems through e-mail, but I can answer questions about what is expected on an assignment. Also note that e-mail is not always an immediate communication method. I will get back to you as quickly as I can.

WSU REASONABLE ACCOMODATION: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. Additional information is available on the Access Center website at http://accesscenter.wsu.edu or by contacting Access.Center@wsu.edu.

WSU SAFETY MEASURES: Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the "Alert, Assess, Act," protocol for all types of emergencies and the "Run, Hide, Fight" response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able). Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI's Run, Hide, Fight video and visit the WSU safety portal.

ACADEMIC INTEGRITY: Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will receive a zero on the assignment, will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct. Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding. If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at conduct.wsu.edu.

CLASS CANCELLATIONS: If a class meeting is ever cancelled for any reason, whatever was scheduled for the cancelled day will be done the next time we meet. This includes scheduled exams, activities, and homework submissions. If a cancellation occurs, I will email the class (your wsu.edu email) and post a note on Blackboard.

KEEPING TRACK: All graded work will be returned to you with the exception of the final exam. Keep all of your returned work for reference and for the resolution of grade discrepancies. The grade book in Blackboard will be maintained so that you may periodically check your points. However, you are expected to keep track of scores for your own information; the grade page should only serve as a quick reference and as a check for accuracy.

EXPECTATIONS: Learning is an active process and is not accomplished by sitting and observing. Thus, I expect you to work hard to accomplish our objectives. I expect you to take responsibility for your own learning by studying the textbook sections in advance. You should come to class prepared with questions about the reading, and ready to work problems from the topic covered by the reading. For each hour of class, you should expect to spend a minimum of two hours of work outside class. If you do not put forth this effort you will not learn, and you may expect that your final grade will reflect this. However, you are not alone in this venture -- please get help if you are having trouble with the material, rather than giving up!

GETTING HELP: Why struggle? Successful students make use of available resources, so don't struggle when help is just a few steps away! We want you to succeed, we're here for you, and we have FREE tutoring available in the Math Learning Center (Cleveland 130) and the computing lab in Thompson Hall (Room 1). Check it out! Tutoring begins August 20th.

For more information please go to: http://math.wsu.edu/mlc

COVERAGE: We will cover the following chapters of the text:

1.2	Inductive Reasoning: Number Patterns
1.3	Strategies for Problem Solving
2.1	Sets: Symbols and Terminology
2.2	Venn Diagrams and Subsets
2.3	Set Operations and Cartesian Products
2.4	Surveys and Cardinal Numbers
7.5	Scientific Notation
10.1	Counting by Systematic Listing
10.2	Using the Fundamental Counting Principle
10.3	Using Permutations and Combinations
10.5	Counting Using "Not" and "Or"
11.1	Basic Concepts of Probability
11.2	Events Involving "Not" and "Or"
11.3	Conditional Probability
11.5	Expected Value
12.1	Visual Displays of Data
12.2	Measures of Central Tendency
12.3	Measures of Dispersion
12.4	Measures of Position
12.5	The Normal Distribution
13.1	The Time Value of Money
13.2	Consumer Credit
13.3	Truth in Lending
13.4	Costs and Advantages of Home Ownership

Learning Outcomes

Quantitative Reasoning Skills

At the end of this course, students should be able to:

- Analyze a real-life situation and convert it into an appropriate mathematical statement (Problem-Solving and Sets, Weeks 1-3; Probability, Weeks 4-8; Statistics, Weeks 9-11; Finance, Weeks 12-14. This will be evaluated by homework assignments, worksheet assignments, and exam questions.
- Use set theory and Venn diagrams to organize and analyze data (Sets, Weeks 2-3). This will be evaluated by homework assignments and exam questions.
- Identify the components affecting financial problems including principal, interest, interest rate, compounding periods and time (Finance, Weeks 12-14). This will be evaluated by homework assignments, worksheet assignments, and exam questions.
- Recognize the difference between simple and compound interest and apply this information to solve finance problems (Finance, Weeks 12-14). This will be evaluated by homework assignments and exam questions.
- Compute the annual percentage rate of a loan (Finance, Weeks 12-14). This will be evaluated by homework assignments and exam questions.
- Understand the concept of sample spaces and events and compute probabilities of events (Probability, Weeks 4-8). This will be evaluated by homework assignments, worksheet assignments, and exam questions.
- Read and create graphical representations of data such as bar graphs and pie charts (Statistics, Weeks 9-11). This will be evaluated by homework assignments, worksheet assignments, and exam questions.
- Understand and determine measures of central tendency and variance in a set of data (Statistics, Weeks 9-11). This will be evaluated by homework assignments, worksheet assignments, and exam questions.
- Determine the mathematical expectation of a random variable (Statistics, Weeks 9-11). This will be evaluated by homework assignments and exam questions.
- Recognize normally distributed sets of data and apply the properties of a normal distribution to analyze that data (Statistics, Weeks 9-11). This will be evaluated by homework assignments, worksheet assignments, and exam questions.

Critical and Creative Thinking

At the end of this course, students should be able to:

- Analyze a real-life situation and convert it into an appropriate mathematical statement. (Problem-Solving and Sets, Weeks 1-3; Probability, Weeks 4-8; Statistics, Weeks 9-11; Finance, Weeks 12-14). This will be evaluated by homework assignments, worksheet assignments, and exam questions.
- Use Polya's problem-solving guidelines to solve mathematics applications and problems (Problem-Solving, Week 1). This will be evaluated by homework assignments and exam questions.
- Use set theory and Venn diagrams to organize and analyze data (Sets, Weeks 2-3). This will be evaluated by homework assignments and exam questions.
- Identify patterns such as algebraic, geometric and Fibonacci-type sequences and use these patterns to solve problems (Problem-Solving, Week 1). This will be evaluated by homework assignments and exam questions.
- Identify situations where permutations and combinations can be used for counting (Probability, Weeks 4-8). This will be evaluated by homework assignments, worksheet assignments, and exam questions.

Information Literacy

At the end of this course, students should be able to:

- Obtain financial data such as current inflation rate and interest rate information (Finance, Weeks 12-14). This will be evaluated by homework assignments and worksheet assignments.
- Understand how to identify the reliability of an information source (Finance, Weeks 12-14; Probability, Weeks 4-8; Statistics, Weeks 9-11). This will be evaluated by homework assignments and worksheet assignments.
- Obtain statistical data such as current world population (Statistics, Weeks 9-11). This will be evaluated by homework assignments and worksheet assignments.
- Consider the validity of data as it is presented in advertising and the media (Probability, Weeks 4-8; Statistics, Weeks 9-11; Finance, Weeks 12-14). This will be evaluated by homework assignments, worksheet assignments, and exam questions.

COURSE SCHEDULE

(subject to change)

Week	Tuesday	Thursday
1 8/20 - 8/24	Icebreakers/Syllabus	1.2, 1.3
2 8/27 - 8/31	In Class Activity (1.2, 1.3)	2.1, 2.2 HW 1 Due (1.2)
3 9/3 - 9/7	In Class Activity (2.1, 2.2)	2.3, 2.4, 7.5 HW 2 Due (1.3, 2.1)
4 9/10 - 9/14	In Class Activity (2.3, 2.4, 7.5) Writing Project Topic Due	10.1, 10.2 HW 3 Due (2.2, 2.3)
5 9/17 - 9/21	Review **Exam 1 (1.2 - 7.5) - Evening**	In Class Activity (10.1, 10.2) HW 4 Due (2.4)
6 9/24 - 9/28	10.3, 10.5	In Class Activity (10.3, 10.5) HW 5 Due (10.1, 10.2)
7 10/1 - 10/5	11.1, 11.2 Writing Project Outline (not collected)	In Class Activity (11.1, 11.2) HW 6 Due (10.3, 10.5)
8 10/8 - 10/12	11.3, 11.5	12.1, 12.2 HW 7 Due (11.1, 11.2)
9 10/15 - 10/19	In Class Activity(11.3, 11.5) **Exam 2 (10.1 - 11.3) - Evening** HW 8 Due (11.3, 11.5)	Release Day - No Class
10 10/22 - 10/26	In Class Activity (12.1, 12.2)	12.3, 12.4 HW 9 Due (12.1, 12.2)
11 10/29 - 11/2	In Class Activity (12.3, 12.4) Final Writing Project Due	12.5 HW 10 Due (12.3, 12.4)
12 11/5 - 11/9	In Class Activity (12.5)	13.1, 13.2 HW 11 Due (12.5)
13 11/12-11/16	Review **Exam 3 (11.5 - 12.5) - Evening**	Release Day - No Class
11/19 - 11/23	Thanksgiving Break	
14 11/26 - 11/30	In Class Activity (13.1, 13.2) HW 12 Due (13.1)	13.3, 13.4 HW 13 Due (13.2)
15 12/3 - 12/7	In Class Activity (13.3, 13.4)	Review HW 14 Due (13.3, 13.4)
16 12/10 - 12/14	Final Thursday, December 13th 10:10 - 12:10	