Syllabus

Math 87 MATHEMATICAL LITERACY I
5 Credits (N)
FALL QUARTER 2015
Section A, 5545, 10:30-11:20 Daily, LDC 125


INSTRUCTOR: Crystal J. R. Holtzheimer, M.Ed.     PHONE: (360)383-3543

OFFICE: LDC 213C                                 OFFICE HOURS: 11:30-12:20 M-Th

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WEB: http://mathtastic.wordpress.com

TEXTBOOK: Pathways to Math Literacy, 1st edition, by Sobecki and Mercer

SUPPLIES:

It is expected that you will come to class each day prepared for the day's activities.
Necessary materials will include:

- Writing utensils
- Notebook/scratch paper or notepad
- Textbook
- ALEKS software
- Graphing calculator
- A valid e-mail address (check regularly for course updates)
- A mind prepared to learn

RESOURCES:

1) WCC Library – HNR
2) Calculators for check-out in library (third day of classes)
3) Course materials on reserve in the library
4) Math Center – CAS 113
5) Online math center - http://math.whatcom.ctc.edu/
6) E-tutoring – http://www.eTutoring.org (for instructions on accessing the site, please see your instructor)
7) Counseling and Advising – LDC 116

COURSE
DESCRIPTION:

First course in a two-course sequence preparing non-STEM students for college-level math coursework (either Math& 107 or Math& 146). Topics include creating and interpreting charts and graphs, order of operations, linear versus exponential growth, basic probability and statistics, dimensional analysis, rates of change, and critical reasoning. Graphing calculator required.

PREREQUISITE:

Math 94 with a grade of "C" or better, or equivalent.

LEARNING
OUTCOMES:

Upon successful completion of this course, each student should be able to:

- Organize data and information using graphical displays
- Recognize patterns and use them to make predictions
- Distinguish between linear and exponential growth
- Convert from one unit system to another
- Use the order of operations to simplify expressions and solve equations
- Calculate and interpret measures of average (mean, median, mode)
- Calculate areas and volumes of geometric figures

CORE LEARNING
ABILITIES:

WCC's core learning abilities (CLAs) – quantitative literacy, information literacy, communication, critical thinking, and global awareness – are skills taught and reinforced throughout our curriculum. These skills are integral to students' professional and personal lives. This course will give you the opportunity to practice and develop quantitative literacy.

TOPICS:

- Unit 1: Numbers and Patterns
- Unit 2: Relationships and Reasoning

STUDENTS WITH
DISABILITIES:

Any student with a disability requiring auxiliary aids, services, or other reasonable accommodations should contact the Access & Disability Services (ADS) office in the Entry and Advising Center in LDC 116 or call (360)383-3080 or (360)255-7182 (Videophone) to make an appointment. **Students with special learning needs should inform the instructor of special accommodations in writing by the end of the first week of classes.**

ABOUT THIS
COURSE:

This course will likely seem different than other math classes you have taken. This is partly due to the content, and partly due to the structure. In this course you will be working primarily with your Teams to understand the material and complete

assignments, with the instructor acting as a guide. It is expected that you will come to class prepared for the day's activities (readings and assignments completed), and that you will fully engage with the material and your fellow students while in class. My hope is that we will all have a great time together this quarter. Rather than thinking of coming to a classroom every day, I hope that we all feel that we are engaging in a "gameful collaboratory" of mathematics.

TEAMS:

Most classroom activities this quarter will be completed in Teams. I will assign Teams by the end of the first week of classes, and you will remain in these Teams for the duration of the quarter. Each week, you will be assigned an attendance and participation grade by members of your Team, so attending class regularly, coming to class prepared, and fully engaging in the in-class assignments and activities are crucial elements to earning a good grade in the course.

PREPARATION
AND PARTICIPATION:

Each week, you will grade all members of your Team on their preparation and participation. This grade will be out of 10 possible points. You will receive a worksheet to fill out that will help you to determine how to award these points to your Teammates. These worksheets will be submitted directly to me, and will not be seen by the other Teammates. Once grades have been submitted for a given week, I will average together the scores from your Teammates to determine your final preparation and participation grade for the week.

ASSESSMENTS:

There will be a graded assessment for each major unit we cover in the course. These assessments will be aligned with the learning outcomes for the course, and work shown, legibility, and correctness of the answer will weigh heavily on the grade. **If you cannot make it to class on the date an assessment is scheduled, you must contact your instructor ON OR BEFORE that date to schedule a make-up assessment.** If you do not do this, you will not be allowed to make-up the missed assessment, and that assessment will earn a grade of 0.

PORTFOLIOS:

In addition to the preparation and participation grades, and the assessments, you will also submit a portfolio assignment for each section of the textbook. The items to be included in the portfolios are described in the textbook at the end of each section. Due dates for the portfolio assignments can be found on the attached schedule. Each portfolio assignment is worth a total of 10 points. **If you need to submit a portfolio assignment late, you must contact your instructor for prior approval. Points may be deducted for late submissions, up to 2 points per day for each day late.**

GRADING POLICY:

Grades will be based on 10 preparation and participation grades, 2 assessments, 19 portfolio submissions, and a syllabus quiz. I do not grade on a curve, and no additional

extra credit problems or assignments will be given. Your final grade will be computed based on the following:

| | |
|---|---|
| Preparation/participation | 10 @ 10 points each |
| Unit Assessments | 2 @ 100 points each |
| Portfolios | 19 @ 10 points each |
| Syllabus Quiz | 1 @ 10 points |

**Total Possible**         **500 points possible**

GRADING SCALE:

Letter grades will be assigned using the following scale:

| | | |
|---|---|---|
| 93-100% = A | 80-82% = B- | 67-69% = D+ |
| 90-92% = A- | 77-79% = C+ | 60-66% = D |
| 87-89% = B+ | 73-76% = C | 00-59% = F |
| 83-86% = B | 70-72% = C- | N = Audit |

If you have registered for S/U grading, a grade of S will be given for an average of 73% or better. Please see the calendar for the last day to register for S/U, N, or W grading.

INCOMPLETES:

An "incomplete" for this course is discouraged. However, for a number of verifiable personal emergencies we may discuss grading options as long as you have shown sufficient effort and satisfactory progress (all assignments up-to-date, 72% or better in the class, good effort, and discussion with teacher). If circumstances in your life prevent your succeeding in this course at this time, you should withdraw before the official withdrawal date (check with the Registration Office) and try the course at another time.

CLASS CANCELLATION
PROCEDURES:

In the event that class needs to be canceled, due to illness or inclement weather, instructions and assignments will be distributed via e-mail and on the web at http://mathtastic.wordpress.com (click on the "News" tab at the top of the page). Please check the website and your e-mail regularly.

BEHAVIORAL
EXPECTATIONS:

It is expected that, since we are all adults here, we know how to treat others with respect and how to behave in a classroom setting. However, since everyone's definition of "appropriate behavior" differs, I will let you know what my opinion is.

- I expect that everyone will arrive in class on time, and prepared. This means doing the reading and watching videos ahead of time to be prepared for classroom problem-solving and discussion.
- If you must be late to class or leave early, please discuss this with your teammates beforehand, and try to enter/exit as quietly as possible so you don't disrupt the learning environment.
- Eating in class is acceptable, as long as you don't leave a mess behind.
- Communication in class and via e-mail must be respectful to both the instructor and other students.
- Cell phones must be silenced during class time, and it is expected that, if you are using a cell phone, laptop, or other mobile device during class, that it is being used to enhance the learning environment.
- Asking questions is always encouraged, and may be done at any time.
- Any excessively loud, rude, or threatening behavior during class will not be tolerated and will be dealt with by the instructor. I do not tolerate sexism, racism, homophobia, classism, ageism, religious intolerance, bigotry, or discriminating remarks of any kind.

Any further information about your rights and responsibilities as a student can be found in the WCC Student Handbook.

ACADEMIC
HONESTY:

Academic honesty and integrity are taken seriously at WCC. Any and all forms of cheating will result in disciplinary action. After one offence, a grade of 0 will be earned for the particular assignment, and will be reported to the Vice President for Educational Services. After more than one offence, a grade of F will be earned in the course, and formal disciplinary action may be pursued.

## Tips for Reading Mathematics

Reading the textbook is important for succeeding academically. This holds true in your math class. However, reading mathematics is different from other types of reading. Getting the most out of a math textbook will require more than just skimming through the text. Below are some tips for helping you get the most from your mathematics text.

- **Focus on concepts, not exercises**
  The most important material in a math textbook is the stuff *between* the problem sets and exercises. If in the past, you have opened your math book only when doing problem sets and exercises (looking at the rest of the book only for examples which mirror the current homework), you must rid yourself of this bad habit now. Instead, set aside a time to read the text when you are not working on a homework assignment. This will enable you to truly focus on the mathematical concepts at hand.

There are an infinite number of types of mathematics problems, so there is no way to learn every single problem-solving technique. Mathematics is about ideas. The math problems which you are assigned are expressions of these ideas. If you can learn the key concepts, you will be able to solve *any* type of problem (including ones you have never seen before) involving those concepts.

- **Read the text more than once**
  You cannot read mathematics in the same way as you would read a newspaper or a novel. Many of the ideas presented in a typical college mathematics course have confounded brilliant minds in centuries past. So it is not unexpected that you may have difficulty learning these same ideas if you quickly scan through the reading assignments just once. You should expect to go through each reading assignment several times before you can gain a full understanding of the material.

- **When reading through for the first time, scan for big ideas**
  The first time you read through a chapter of the textbook, you should be thinking to yourself: "What is the main point of the chapter?" Look for the big picture. The details are important, but you need to be aware of the forest first before focusing on the trees.

- **The second time through, fill in details**
  After you get the big picture, you should then look at the details. Take some time to think about each of the definitions, theorems, and formulas you encounter (more on this later).

- **Read with paper, pen, and calculator**
  As you are reading through the text, you should be writing notes. Check calculations. Rewrite definitions and theorems *in your own words*. See if you can come up with your own examples.

- **Read the narrative**
  There is a story to be told in mathematics. What is the progression of ideas being told? Don't just skip to the formulas and examples.

- **Study the examples**
  What points do each of the examples illustrate? Some examples are extreme cases. Other examples are supposed to illustrate "typical" situations.

- **Read the pictures**
  There are good reasons for the many pictures and graphs in mathematics texts. You should be asking yourself what features of the picture are important to the key concepts. Focus on how each picture illustrates a particular idea.

- **Learn the vocabulary and the language**
  Pay attention to definitions and what they mean. Mathematics language is very precise, and a word may have a different meaning when used in a mathematical context that in everyday use.

- **Learn the theorems and what they mean**
  Theorems are vital bricks to building mathematical knowledge. When you see a theorem in a mathematics text, look at it very closely. What does it say? What do you know from a theorem?

- **Use the index and the appendices. Know what every word means**
  Make sure that you understand all of the words and ideas. If there is a particular word which you do not know (or which you want to know better), look it up. Use the table of contents or the index to help you.

- **Make a note of things you don't understand; ask for help afterwards**
  Even after following all of the above advice, you might still find some of the ideas confusing. That's OK. You are studying difficult stuff! If there is something that you don't understand, mark it. Write down any questions you may have. You then can bring up these issues with your instructor or a classmate.

## College Readiness Attributes

Statewide Community College Mathematics teachers have assembled a set of standards for success in math classes. Students should possess the following general attributes or characteristics in order to be successful in college-level courses:

1. Take responsibility for their own learning.
2. Attend class regularly and on-time.
3. Attempt all problems assigned for homework.
4. Utilize faculty office hours and college tutoring services.
5. Persevere when faced with time-consuming or complex tasks.
6. Combine a variety of techniques to solve problems.
7. Be willing to try a second path when the first path doesn't work out.
8. Notice and attend to details.
9. Notice and retain symbols in mathematical work.
10. Communicate **clearly** in written mathematical symbolism.
11. Show work.
12. Notice patterns.
13. Display intellectual curiosity.
14. Pose questions that reveal engagement with the material.
15. Investigate beyond questions posed.
16. Be willing to take risks and be challenged when solving problems and studying the material.
17. Contribute to and benefit from problem-solving activities.
18. Be respectful of others.
19. Be cooperative.
20. Work constructively with other students and the instructor.
21. Build on others' ideas.