

Math 104: Quantitative Literacy

Section 01

Math 104 is a 3 credit course focused on foundational algebraic and numeric skills in a context of applications and problem-solving to prepare students for Introduction to Statistics (Stat 121) or Contemporary Mathematics (Math 120). Topics include quantitative relationships, patterning, and algebraic reasoning, functional reasoning, probabilistic and statistical reasoning, and incorporate quantitative communication skills and technology.

This course is not a sufficient prerequisite for Precalculus (Math 150). If your major requires Traditional Calculus (Math 151) or Applied Calculus (Math 155), you should take Math 106: College Algebra instead of this course.

Instructor: Dr. Liz Stanwyck

Time: 3, 50-minute meetings a week

Office: Sherman Hall (B-wing) room 148B

Office hours: Wed 2-3pm, Thursday 1-3pm in Sherman Hall room 148C

E-mail: estanwy1@umbc.edu

Required: ALEKS Mathematical Literacy system– Textbook plus online course component.

Textbook: Pathways to Math Literacy by Dave Sobacki and Brian Mercer, 1st edition, McGraw Hill (available at the UMBC bookstore, bundled with the ALEKS course code). Note: you do need a PHYSICAL textbook (not an ebook) for this course, as we will use it as a workbook.

Course Outcomes

Upon course completion, the students will be able to:

1. Use number concepts to describe quantitative relationships in a variety of contexts.
2. Communicate, interpret and explain mathematical concepts using appropriate symbolic notation and vocabulary.
3. Manipulate and solve equations, using appropriate mathematical techniques and technology.
4. Solve word problems in various contexts and interpret results by using mathematical concepts with appropriate terms and units.
5. Solve systems of two equations graphically and algebraically, and interpret the results in an appropriate manner.
6. Recognize whether a linear or non-linear mathematical model is appropriate, and use the appropriate model to represent the relationships between variables.
7. Summarize and interpret data using graphs, tables, technology, and statistics (including measures of central tendencies and dispersion).
8. Collect data and use information from the data to make reasonable conclusions by employing appropriate numerical and algebraic concepts such as fractions, ratios, decimals and percents.

ALEKS Assignments and Pie Chart grade

We will be using an online program, **ALEKS**, to complete assignments electronically. To access ALEKS through Blackboard, follow the instructions posted on your Blackboard site.

What is ALEKS?

Assessment and **L**earning in **K**nowledge **S**paces is a web-based, artificially intelligent assessment and learning system that can significantly raise your proficiency and success rates in mathematics. ALEKS uses artificial intelligence and adaptive questioning to precisely assess your knowledge, and deliver individualized learning tailored to your needs.

How does ALEKS work?

ALEKS works like an online tutor. When you first log in to ALEKS, you will take a comprehensive assessment test (about 45 minutes long) so that ALEKS can determine your current knowledge. After the assessment, ALEKS represents your knowledge with a multi-colored pie chart. Each color of the pie represents a topic for this course, and each portion of the pie chart that is dark represents your knowledge level. The light parts of the pie chart represent what you will learn throughout the course.

Each week, you will be responsible for **completing an assignment**. ALEKS will present you with questions to help you learn the objectives for that assignment, and to demonstrate that you have mastered it. If you have trouble, ALEKS has tutorials and complete explanations available for you. If you complete the assignment by the due date, you receive full credit for that week's assignment. If you don't master it by the due date, you will still have another opportunity to learn that material and improve your final grade, however it is strongly recommended that you complete all assignments on time to keep up with the course.

In addition to the ALEKS weekly assignment grades, there is also an **ALEKS Pie Chart grade**. This is the portion of all course topics you have mastered by the end of the course. If you do not complete an assignment by the time it is due, you can still complete it later (before the last day of classes) and earn a higher Pie Chart grade.

NO EXTENSIONS WILL BE GRANTED ON ASSIGNMENTS FOR ANY REASON. The two lowest assignment scores will be dropped. Please work out problems on paper, and then enter the answers online – this will make it much easier for you to get help if you're not sure why a problem is incorrect.

Quizzes

Eight (8) quizzes will be administered throughout the semester. The best 6 quiz grades will count toward your final grade. Because your lowest quiz scores will be dropped, **no make-up quizzes are allowed for any reason**. Some of the quizzes *might* be open-note, so make sure that you **take notes** every day and bring them to class!

Exams

Three (3) in-class exams will be given during this course (not including the final exam). Make-up exams will only be given in case of documented emergencies. Notice must be given to the instructor **PRIOR** to the time of the exam in order to get a make-up exam! Make-up exams are different than the original test. Exams are always closed-book and closed-notes.

Exam dates:

Final Exam

The exam in this course will be a common final (all sections of Math 104 will take the same final at the same time). The time and date for the final will be announced as soon as possible. Because the final is a COMMON FINAL, final exams will not be rescheduled for any reason. Please plan accordingly.

Date to be announced later.

LAST DATE TO ADD:

LAST DAY TO CHANGE FROM REGULAR GRADE TO AUDIT:

LAST DATE TO DROP:

Last day of classes –

Grading Policy

ALEKS weekly assignments	100 points
ALEKS Pie Chart score	100 points
Quizzes (best 6, worth 25 points each)	150 points
3 exams (100 points each)	300 points
Participation	50 points
<u>Final Exam</u>	<u>150 points</u>
Total	850 points

Blackboard will be used to post grades for individual assignments. It is expected that you keep up with your course grade throughout the semester, and alert the professor to any questions or concerns as soon as possible. Be aware that **Blackboard may not calculate your grades accurately** (the “totals” column does not drop lowest quiz grades, for example), so you should verify your grade by calculating it directly.

<u>Grade</u>	<u>Range</u>	<u>Point range</u>
A	90-100%	720-800
B	80-89%	640-719
C	70-79%	560-639
D	60-69% %	480-559
F	below 59%	0-479

Academic Integrity Statement

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, the UMBC Integrity webpage www.umbc.edu/integrity, or the Undergraduate School website www.umbc.edu/undergrad_ed/ai/

Cheating will not be tolerated; **all work must always be your own**. Avoid anything that could lend an appearance of cheating. Make sure you use the restroom before quizzes and exams, as you will not be allowed to leave the classroom during them. Never use any unapproved device during a quiz or exam.

Student Disability Services

UMBC is committed to eliminating discriminatory obstacles that may disadvantage students based on disability. UMBC complies with federal legislation for individuals with disabilities (Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the ADAA of 2009) that offers reasonable accommodations to qualified students with disabilities. Student Disability Services (SDS), formerly Student Support Services, is the UMBC department designated to:

- receive and maintain **confidential** files of disability-related documentation,
- certify eligibility for services,
- determine reasonable accommodations,
- develop with each student plans for the provision of such accommodations, and
- serve as a liaison between faculty members and students regarding disability-related concerns.

If you have a documented disability and need to request academic accommodations, please refer to the SDS website at sss.umbc.edu or contact the office by phone at 410-455-2459, via email at sss@umbc.edu, or in person in Math/Psychology Room 213. If you require accommodations for this class, make an appointment to meet with me to discuss your SDS-approved accommodations.

Learning Resources Center (LRC) AKA The Math Lab

Located: first floor of the A.O.K. Library, behind the reference desk

Hours:

find hours at <http://lrc.umbc.edu/tutor/math-lab/>

The Math Lab is a walk-in tutoring center designed to support the most high-demand Math courses at UMBC. Students are welcome to visit the lab anytime during operating hour and to stay as long they would like.

When students enter the lab, they should first sign-in, ask the person working the desk about the best tutor for their course. If there is a tutor available, they will help you immediately. If there is not a tutor available, then you will be asked to sit and work quietly for a few minutes until a tutor can get to you. At this time, bring out the questions you have and the work you have already done so you are prepared. The tutors are indicated by the tutoring signs, always feel free to let them know that you need help. The wait time should not exceed ten minutes.

Due to the high demand on tutors in the Math Lab, they cannot tutor one student for more than fifteen minutes. Students should expect to work independently. Tutors will, however, circle back to check on each student. Our tutors often suggest that students in the same course sit together both for efficient tutoring and in the hope that it could lead to future study groups!

Course Help/How to earn an “A”

Spend 8-12 hours per week doing the following:

- Reading the textbook
- Working the examples
- Trying the problems
- Working on your ALEKS objectives
- Talking to a classmate about course material
- Visiting my office or Math Lab
- Going over/rewriting class notes

Before class:

Study the appropriate section in ALEKS. Take into account any announcements given in class or by email. Before you arrive for lecture, you should have an overview of the material in the section, have read/seen several examples for its use, and be ready to attempt problems with the guidance of the instructor.

During class:

Come to every class on time and prepared. Focus on the material during class (i.e. don't play with gadgets or laptops, don't nap, don't chat). Follow the lecture – it will highlight the important material and put it into context. Participate actively in class and try to work out problems at the end of class. TAKE CAREFUL NOTES! By the end of each class, you should have obtained answers to your questions and have an idea of how to approach the homework.

After class:

Work all assigned homework problems and work on the week's ALEKS objective. It may be helpful to review worked examples from class. If questions arise, review the textbook, notes from class, and worked-out examples. If you struggle with a concept or type of problem, get help AS SOON AS POSSIBLE. Help is available through your professor and the LRC (Learning Resources Center) – but you must seek help earlier rather than later. Keep up with your work, and don't get behind.

Create a schedule to work on math problems, and work on homework or examples for an hour or two each day. Try extra problems. Keep a list of rules you have to memorize in your pocket and quiz yourself on them until you know them by heart. When you get problems incorrect on quizzes or exams, go back and try the problems again until you can solve them correctly.

Start a study group. Even if the material seems OK to you, this can be a valuable resource to study for quizzes and exams. You can help other students understand the material better, and reinforce your own knowledge.

Keep track of your grade at all times. This way you'll never be surprised about how you're doing in the course, and you can pinpoint and address problems before they get out of control.