

This is a SouthArk Master Syllabus. The course syllabus distributed by the instructor may include additional requirements, must be followed by the student in the given term, and is considered to supersede the Master Syllabus.

Course Number

MATH 1213

Course Title

Quantitative Literacy/ Mathematical Reasoning

Course Description

This is a college-level mathematics course designed for general education degree majors not requiring college algebra. Topics include applied concepts in the following areas: personal, state and national finance; statistics and probability; functions and modeling; and quantities and measurement. A strong emphasis will be placed on critical thinking. This course will also focus on process, conceptual understanding, communication and problem solving.

College Mission

South Arkansas Community College promotes excellence in learning, teaching, and service; provides lifelong educational opportunities; and serves as a cultural, intellectual, and economic resource for the community.

College Wide Student Learner Outcomes

Critical Thinking Responsibility Communication

ACTS Course **Program Course**

ACTS Outcomes

The student will demonstrate:

1. The ability to identify problem-solving strategies and apply them to contemporary everyday problems, both in work and in personal lives.
2. To analyze reports from media to determine completeness and accuracy noting assumptions both stated and unstated.
3. To critic public consumer and political information for better understanding, completeness, and accuracy.

Program Outcomes

Course Learner Outcomes

| CLO # | Course Learner Outcomes (CLO) | Unit Outcomes/ Competencies | ACTS | Program | Critical Thinking | Communication | Responsibility | Assessment |
|-------|---|-----------------------------|---------|---------|-------------------|---------------|----------------|--|
| CLO 1 | The ability to interpret the meaning behind numerical and graphical data. | I, III, IV | 1, 2 | | CT2 | | | Two problems embedded in the Departmental Final Exam |
| CLO 2 | Critical thinking to formulate decisions and problem solving based on reasoning and analysis. | I, III, IV | 1, 2 | | CT2 | | | Two problems embedded in the Departmental Final Exam |
| CLO 3 | The appropriate use of technology to supplement and enhance conceptual understanding, visualization, and inquiry. | II, III | 1, 2 | | CT2 | | | Two problems embedded in the Departmental Final Exam |
| CLO 4 | The ability to understand the basic concepts of statistical inference. | II, III | 1, 2, 3 | | CT2 | | | Two problems embedded in the Departmental Final Exam |
| CLO 5 | A basic understanding of functions and mathematical modeling. | II, IV | 1, 3 | | CT2 | | | Two problems embedded in the Departmental Final Exam |
| CLO 6 | An understanding of the mathematical concepts in finance systems. | II, IV | 2, 3 | | CT2 | | | Two problems embedded in the Departmental Final Exam |

Unit Outcomes/ Competencies/ Objectives

The references are to the textbook, Using & Understanding Mathematics, 6th Ed, College Algebra, fifth edition, by Bennett & Briggs.

Unit I: Logic and Problem Solving

1. Thinking Critically
 - a. Living in the Media Age
 - b. Sets and Venn Diagrams
 - c. Critical Thinking in Everyday Life
2. Approaches to Problem Solving
 - a. Working with Units
 - b. Problem-Solving with Units
 - c. Problem-Solving Guidelines and Hints

Unit II: Quantitative Information in Everyday Life

3. Numbers in the Real World
 - d. Uses and Abuses of Percentages
 - e. Dealing with Uncertainty
 - f. Index Numbers: The CPI and Beyond
 - g. How Numbers Can Deceive: Polygraphs, Mammograms, and More
4. Managing Money
 - h. Taking Control of Your Finances
 - i. The Power of Compounding
 - j. Savings Plans and Investments
 - k. Loan Payments, Credit Cards, and Mortgages
 - l. Income Taxes
 - m. Understanding the Federal Budget

Unit III: Probability and Statistics

5. Statistical Reasoning
 - n. Fundamentals of Statistics
 - o. Should You Believe a Statistical Study?
 - p. Statistical Tables and Graphs
 - q. Graphics in the Media
 - r. Correlation and Causality
6. Putting Statistics to Work
 - s. Characterizing Data
 - t. Measures of Variation
 - u. The Normal Distribution
 - v. Statistical Inference
7. Probability: Living with the Odds
 - a. Fundamentals of Probability
 - b. The Law of Large Numbers

Unit IV: Modeling

8. Exponential Astonishment
 - a. Growth: Linear versus Exponential
 - b. Doubling Time and Half-Life
 - c. Real Population Growth
9. Modeling Our World
 - a. Functions: The Building Blocks of Mathematical Models
 - b. Linear Modeling
 - c. Exponential Modeling

Assessment Description(s)

All students completing the course will take a departmental final exam. For each of the Learner Outcomes, the instructor(s) will choose two questions on the Final Exam that they determine best tests that outcome. Proficiency for each outcome will be defined as the student correctly solving at least one of those two problems. The goal is that 70% of the course completers will demonstrate proficiency for each of the Learner Outcomes.

The online sections of Quantitative Literacy/ Mathematical Reasoning will be required to take a proctored midterm and final exam either at SouthArk's Learning Center or at a testing center that has been pre-approved by the instructor.

In order to complete the course, students *must* take the final exam and satisfactorily pass, as the exam acts as an exit test. Students who do not take the final exam will receive an F for the course, no matter their semester average.

Materials and Technological Requirements

Using and Understanding Mathematics: A Quantitative Reasoning Approach plus NEW MyMathLab with Pearson eText -- Access Card Package (6th Edition) by Bennett, Jeffrey O.; Briggs, Bill. Published by Pearson. Options: Book and Access code (ISBN 10: 0321923219; ISBN 13: 9780321923219) or Access code only (ISBN 10: 0321922204; ISBN 13: 9780321922205). Students have the option of buying the hard copy textbook if needed.

Class Attendance Policy

Students are expected to attend all classes in which they are enrolled. If a student is absent from a class session, it is the student's responsibility to make arrangements to complete or make up any work missed. No make-up work for missed classes will be allowed without the approval of the instructor. Students who enroll late must assume all responsibility for work missed. Classes not attended as a result of late enrollment may be counted toward excessive absences. Students not attending the entire class period may be counted absent for that period. An instructor may drop students with a grade of "WE" if students have been absent for an excessive number of days. Warning letters will be sent to the students advising them of the consequences of nonattendance and urging them to contact their instructors immediately. Excessive absences are defined as follows:

Regular Semester

- Courses which meet once a week..... 2 absences
- Courses that meet twice per week 3 absences
- Courses that meet four times per week 5 absences

Summer Session

- Courses that meet four times per week in a five week session 3 absences
- Courses which meet two evenings per week in a 10 week session 3 absences

Students enrolled in special programs or individualized instruction should contact their program director/instructor regarding specific attendance requirements for the program/course. Some of the selective-admission, health-science programs have specific criteria regarding attendance. Students are encouraged to refer to program policies in these matters.

Jury Duty/Military/Official School Function

Scheduled absences are those that occur due to college-related activities or as a result of summons to jury duty or military duty. Classes missed as a result of scheduled absences will not be counted as excessive absences if the instructor is notified and provided documentation prior to the absence(s). Make-up work for scheduled absences will be at the discretion of the instructor.

In all instances, documentation must be provided to the instructor within 24 hours of receipt. Documentation should come from an appropriate party on letterhead or other official stationery with a signature and contact information. Documentation should list the corresponding dates of the leave.

Medical leave

For medical-related absences, documentation must include written notice from the treating medical professional documenting time needed off related to medical reasons and time student may resume classes. The medical reason does not need to be listed on the documentation; the documentation must include only that there is a medical reason, the amount of time the student needs to be absent, and the time the student should be able to return to classes. Students who elect to work at home while on excused leave must meet with their instructors to make arrangements to do so. Working on coursework while on medical leave is not a requirement but can be requested by students. If students request that they be allowed to work at home while on an excused leave, the instructor will make every reasonable effort to ensure that the student is able to do so.

For students who have a medical condition necessitating time off or accommodation:

- 1) They may work at home on assignments if they choose to if on medical leave approved by a medical professional
- 2) Receive appropriate accommodations related to coursework (i.e., excused from labs with potentially harmful chemicals, have a larger desk, etc.)
- 3) Resume their studies where they left off once they return to classes
- 4) Be allowed to make up any missed work related to medical leave
- 5) Receive incompletes on their transcripts until coursework is completed, according to the incomplete grade contract.
- 6) Be given a reasonable time frame in which to complete missed coursework

Academic Honesty Policy

Students enrolled at South Arkansas Community College are expected at all times to uphold standards of integrity. Students are expected to perform honestly and to work in every way possible to eliminate academic dishonesty. Academic dishonesty includes cheating and plagiarism, which are defined as follows:

- Cheating is an attempt to deceive the instructor in his/her effort to evaluate fairly an academic exercise. Cheating includes copying another student's homework, class work, or required project (in whole or in part) and/or presenting another's work as the student's own. Cheating also includes giving, receiving, offering, and/or soliciting information on a quiz, test, or examination.
- Plagiarism is the copying of any published work such as books, magazines, audiovisual programs, electronic media, and films or copying the theme or manuscript of another student. It is plagiarism when one uses direct quotations without proper credit or when one uses the ideas of another without giving proper credit. When three or more consecutive words are borrowed, the borrowing should be recognized by the use of quotation marks and proper parenthetical and bibliographic notations.

If, upon investigation, the instructor determines that the student is guilty of cheating or plagiarism, the following penalties will apply:

- The student will receive a penalty of no less than a zero on the work in question.
- The instructor will submit a Student Academic Misconduct Form, written report of the incident, to the appropriate dean.
- The dean will submit form to Vice President for Learning to determine disciplinary action.
- The Vice President for Learning will determine whether further disciplinary action will be taken.
- All decisions may be appealed for review through the college's academic appeals procedure.

Equal Opportunity-Affirmative Action Statement

South Arkansas Community College does not discriminate on the basis of age, race, color, creed, gender, religion, marital status, veteran's status, national origin, disability, or sexual orientation in making decisions regarding employment, student admission, or other functions, operations, or activities.

Library Services

Library Homepage: <http://southark.libguides.com/homepage> Library Contact: LibraryStaff@southark.edu or 870.864.7115

Procedures to Accommodate Students with Disabilities:

If you need reasonable accommodations because of a disability, please report this to the Vice President of Student Services with proper documentation. . VPSS Contact: 870.875.7262

The Early Alert System

In an effort to ensure student retention and success, South Arkansas Community College employs an Early Alert System to identify and support at-risk students as soon as possible in a given semester. The intent of Early Alert is to provide this assistance while there is still time to address behaviors or issues that have the potential of preventing students from completing their courses and degree plans. Students referred through the Early Alert System will be required to work on a corrective action plan with their student advising coach and to include attendance accountability and mandatory academic tutoring either in the academic division or in the Testing and Learning Center (TLC).

Once the Student Advising Coach has met with the referred student, and again when the student has met the prescribed corrective actions, the coach will update the Early Alert System so that the instructor is kept informed of the progress in resolving issues.

Behavioral Review Team

At South Arkansas Community College (SouthArk), we are committed to proactive leadership in student wellbeing and campus safety. By focusing on prevention and early intervention with campus situations that involve any person experiencing distress or engaging in harmful or disruptive behaviors, the BRT will serve as the coordinating hub of existing resources to develop intervention and support strategies and offer case management. Students, faculty, staff, and campus guests are encouraged to report any person on campus who is a concern. BRT Contact: 870.875.7262 BRT@southark.edu

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