

ARIZONA WESTERN COLLEGE  
SYLLABUS

MAT 119 MATHEMATICS ACROSS CULTURES

Credit Hours: 3 Lec 3

GENERAL EDUCATION COURSE: C (Cultural Awareness)  
WI (Writing Intensive)

PREREQUISITES: MAT 081, ENG 101

**THIS COURSE IS DESIGNATED AS WRITING INTENSIVE:** Arizona Western College believes writing provides a unique opportunity to learn disciplinary content while mastering writing skills. Writing-Intensive (WI) courses at Arizona Western College integrate writing assignments in ways that help students learn both the subject matter of the courses and discipline-specific ways of thinking and writing. Writing Intensive courses help develop students' identities as good writers by linking their writing proficiency with their desire to know more about the field of study, to engage in questions in the discipline, and to become participants in academic discourse.

COURSE DESCRIPTION

Mathematical thought, concepts, and applications in non-European cultures throughout history with an emphasis on Latin American, Native American and African cultures.

1. COURSE GOALS

- 1.1 Achieve an understanding of how different cultures approached mathematical thought.
- 1.2 Develop an appreciation of how mathematical concepts and ideas are imbedded into a cultures art, science, and everyday life.

2. OUTCOMES

Upon satisfactory completion of this course, students will be able to:

- 2.1 identify the different ways various cultures used and applied mathematical concepts, particularly Native American, Latin American, and African cultures.
- 2.2 describe a historical perspective of what types of mathematical concepts were being used around the world at different times throughout history and why they were being used.
- 2.3 describe how mathematics may have different meaning and utility for different cultures.
- 2.4 define mathematics in a cultural perspective.
- 2.5 Generate appropriate writing discourse according to the AWC Writing Intensive Courses: General Education guidelines.

3. AWC GENERAL EDUCATION (GE) OUTCOMES

3.1 DIGITAL LITERACY

- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Use information effectively to accomplish a specific purpose
- Create content in a digital environment

3.2 COMMUNICATION

- Write effectively and intelligently for a range of purposes and audiences in the English language (e.g., informing, persuading, advancing an argument, expressing, creating, etc.)
- Utilize proper citations, evaluate critically, and use effectively relevant information for problem-solving and presentation of ideas, issues, and arguments
- Speak effectively to a purpose before an audience

- Demonstrate effective listening skills

### 3.3 QUANTITATIVE ANALYSIS

- Identify and extract relevant data from given mathematical or contextual situations
- Select known models or develop appropriate models that organize the data into: tables or spreadsheets (with or without technology); graphical representations (with or without technology); symbolic/equation format
- Obtain correct mathematical results and state those results with appropriate qualifiers and use the results to: determine whether they are realistic in terms of original data/problem; determine whether the mathematical model/representation of data is appropriate; describe trends in a table, graph, or formula and make predications based on these trends; draw qualitative conclusions in written form; apply them to real world problems

### 3.4 CIVIC DISCOURSE

- Describe historical, cultural, and political issues relevant in contemporary local, national, and global communities
- Analyze how such issues affect various local, national, and global regions, communities, and individuals
- Include contemporary subject matter.
- Study that is concerned with an examination of culture-specific elements of a region, country or culture group. (The area studied must be non-U.S. and contributes to understanding contemporary society)
- Cross-cultural study with an emphasis on one or more foreign areas, including courses on such subjects as comparative religions, politics and international relationships.
- Offer views of humanity from a multitude of perspectives.
- Engender an awareness of the universal aspects of humanity.
- Foster a cooperative atmosphere in which inclusive cultural relations may be improved.
- Use broad historical views, showing the interconnectedness of events/ideas/creations/themes/theories.
- Analyze sources of information that interpret human developments, ideas and institutions in the sequence or sequences of past events (example: a course that covers not only what happened in the past, but examines the historical influences that explain why this past occurred as it did or why present human developments have occurred).

### 3.5 WRITING INTENSIVE

- Written discourse is embedded into the requirements of the GE course through multiple written assignments.
- Part of the written discourse emphasizes critical inquiry, which includes the gathering, interpretation and evaluation of evidence.
- Instructor evaluates written discourse for form, which includes overall organization, analysis, grammar, mechanics, punctuation, and style.
- Some assignments are completed in class and some are completed out of class.
- Assignments within the course are arranged in a sequence of increasing complexity/skill, where applicable.
- Total formal writing for the course consists of at least 4000 words, that is, three papers of 1333 words each.
- At least 33% of the student's grade in the course is based on revised written discourse.

4. METHODS OF INSTRUCTION

- 4.1 Lecture
- 4.2 Video/photos
- 4.3 Student presentations
- 4.4 Internet research

5. LEARNING ACTIVITIES

- 5.1 Reading
- 5.2 Participation
- 5.3 Using computers/self discovery
- 5.5 Writing assignments

6. EVALUATION

- 6.1 Reading assignments
- 6.2 Research projects and reports
- 6.3 Oral presentations
- 6.4 Exams/quizzes
- 6.5 Class participation
- 6.6 At least 33% of the student's grade is based on revised written discourse.

7. STUDENT RESPONSIBILITIES

- 7.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
- 7.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.
- 7.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through AccessABILITY Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodations in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.
- 7.4 Academic Integrity: Any student participating in acts of academic dishonesty—including, but not limited to, copying the work of other students, using unauthorized “crib notes”, plagiarism, stealing tests, or forging an instructor's signature—will be subject to the procedures and consequences outlined in AWC's Student Code of Conduct.
- 7.5 Texts and Notebooks: Students are required to obtain the class materials for the course.
- 7.6 Arizona Western College students are expected to attend every class session in which they are enrolled. To comply with Federal Financial Aid regulations (34 CFR 668.21), Arizona Western College (AWC) has established an Attendance Verification process for "No Show" reporting during the first 10 days of each semester.  
Students who have enrolled but have never attended class may be issued a “No Show” (NS) grade by the professor or instructor and receive a final grade of “NS” on their official academic record. An NS grade may result in a student losing their federal financial aid.  
For online classes, *student attendance in an online class is defined as the following* (FSA Handbook, 2012, 5-90):
  - Submitting an academic assignment

- Taking an exam, an interactive tutorial or computer-assisted instruction
- Attending a study group that is assigned by the school
- Participating in an online discussion about academic matters
- Initiating contact with a faculty member to ask a question about the course