COURSE SYLLABUS
Fall 2015-2016
August 24 – December 10, 2015
Mathematics for Educators I
MTH 11505 01
School of Sciences

PROFESSOR Mary Jane Wolfe, Ph.D.  Website
OFFICE 304A Anniversary Hall
PHONE (740) 245-7243
eMAIL mjwolfe@rio.edu
OFFICE HOURS 8:30-9:30 Monday & Wednesday
1:00-2:00 Wednesday
2:00-3:00 Monday & Tuesday
Other times by appointment


CREDIT 5 semester hours

COURSE An introduction to the fundamentals of mathematics for education majors.
DESCRIPTION Topics include: problem-solving strategies, sets, numeration systems, integer and rational number operations, real numbers, and functions.

Students will be able to
• use Polya’s four-step problem-solving process to solve non-routine problems;
• select and use appropriate problem-solving tools including mental arithmetic, pencil-and-paper computation, a variety of manipulatives, visual materials, and calculators;
• explore, conjecture and reason logically using such words as all, some, and none;
• explore prenumeration concepts and whole numbers;
• understand and use the standard models for the four basic arithmetic operations (addition, subtraction, multiplication, division) to determine in problem situations which operation to use and why;
• apply the four basic operations to problems using numbers, symbols and variables to solve problems and to model;
• explain and develop computational algorithms;
• make estimations and check the reasonableness of results;
• explore fractions, decimals, percents and their relationships;
• appreciate the structure of number systems including fractions, decimals, integers and the real numbers;
• identify and apply number sequences and proportional reasoning;
• communicate about and through mathematics by writing and orally using
• everyday language;
• mathematical language including
  o symbols
  o charts and diagrams
  o manipulatives.
COURSE  Chapter 1  An Introduction to Problem Solving
CONTENT  Chapter 2  Numeration Systems and Sets
         Chapter 3  Whole Numbers and Their Operations
         Chapter 4  Number Theory
         Chapter 5  Integers
         Chapter 6  Rational Numbers and Proportional Reasoning
         Chapter 7  Decimals: Rational Numbers and Percent
         Chapter 8  Real Numbers and Algebraic Thinking

GRADING  Three 100–point exams  300 points
         Chapters 1 & 2  ~October 8
         Chapters 3, 4, & 5  ~Nov 5
         Chapters 6, 7, & 8  ~December November 30
         Three 25–point quizzes  75 points
         Chapter 1  ~Sept 17
         Chapters 3 & 4  ~October 19
         Chapters 6 & 7  ~November 19
         Selected homework assignments  75 points
         Comprehensive final exam  100 points
         Total  550 points

Obtaining course averages in the following ranges should result in receiving a grade not lower than the grade listed:
100%–90%  A, 89%–80%  B, 79%–70%  C, 69%–60%  D.

If at the end of the course you are unable to perform basis arithmetic operations with whole numbers and with fractions, or if you are not able to solve sixth-grade level percent problems; you will receive a course grade of Incomplete. That grade will be replaced with a letter grade only after you have demonstrated proficiency with these critical skills.

Note: Borderline grade decisions are influenced by class participation.

Students are expected to work all assigned problems. Class time will be used to discuss homework related questions only when requested by a student.

To receive full credit homework must be turned in within one week of the due date except for assignments due the last week of class which must be submitted by 11:20 AM December 5th. Assignments submitted more than one week late or after 11:20 December 5th will not be graded and will receive no credit.

If you feel that your in-class exam scores are not representative of your level of understanding, you may schedule appointments to meet with your instructor. At these meetings you will bring your completed homework (the answers and the accompanying work). Together we will determine where your difficulties lie and decide on more effective learning strategies, along with alternative assessments.

ATTENDANCE  Students are expected to attend all classes. No excuse is needed if you miss a class, a quiz, POLICY or an exam. A comprehensive exam will be given during class December 5th to anyone who needs to make-up a quiz or test. You must sign up during the last full week of classes if you intend to take that test. The percent score that you receive on that test will serve as the score for at most one exam and one quiz missed. If more than one quiz and/or exam is missed, no make-up credit will be given.

It is expected that all students will attend class regularly and come to class prepared to participate actively in the class activities. This includes thoughtful interactions with class members and the course instructor, completing the readings for the class as assigned, participation in class discussions-
both small group and large group, and careful attention to the contributions of classmates. If you must miss a class for any reason, please notify the instructor via email and arrange with a classmate to catch up on what you missed.

**Students who miss more than 6 classes will receive an automatic reduction of at least one letter grade in their course grade, missing more than 12 classes - two letter grades.**

A student whose participation during class is not acceptable will receive a verbal warning including suggestions for improving performance. If the student does not improve the quality of their participation, their grade for this course may be lowered up to two letter grades.

---

**IMPORTANT**

**DATES**

<table>
<thead>
<tr>
<th>IMPORTANT</th>
<th>First day of classes</th>
<th>August 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATES</td>
<td>No class, Labor Day</td>
<td>September 7</td>
</tr>
<tr>
<td></td>
<td>No Class Meetings, Internet Activities</td>
<td>October 19-22</td>
</tr>
<tr>
<td></td>
<td>Thanksgiving Break</td>
<td>November 25-26</td>
</tr>
<tr>
<td></td>
<td>Final Exam</td>
<td>December 10th, 11:00-1:00</td>
</tr>
</tbody>
</table>

**TEXTBOOK**

Students should work all assigned problems. Time will be provided during class to discuss questions only when requested by a student.

These assignments:

- furnish opportunities to refresh arithmetic skills
- provide practice using new or alternative algorithms
- emphasize and utilize problem-solving strategies
- introduce common mathematical ideas and terms, e.g., perfect numbers, Pascal’s triangle, palindromes
- improve your mathematical communication skills
- indicate where additional study is needed
- provide practice to reinforce learning and for tests
- assist you in developing skills that permit you to work all types of problems in a reasonable amount of time
- increase your understanding of the written language of mathematics, so that you are able to interpret it and to respond to it correctly.

Be aware that the homework assignments sometimes require an extensive amount of time, and that some of the problems are difficult.

**GRADING POLICY**

Full, active participation contributes 20% toward the final grade. Obtaining course averages in the following ranges should result in receiving a grade not lower than the grade listed: 100%–90% A, 89%–80% B, 79%–70% C, 69%–60% D.

See the Attendance Policy for additional information.

**ATTENDANCE**

It is expected that all students will attend class regularly and come to class prepared to participate actively in the class activities. This includes thoughtful interactions with class Members and the course instructor, completing the readings for the class as assigned, participation in class discussions—both small group and large group, and careful attention to the contributions of classmates. If you must miss a class for any reason, please notify the instructor and arrange with a classmate to catch up on what you missed.

**A student who misses more than 6 classes will receive an automatic reduction of at least one letter grade in their course grade, missing more than 12 classes - two letter grades.**

A student whose participation during class is not acceptable will receive a verbal warning including suggestions for improving performance. If the student does not improve the quality of their participation, their grade for this course may be lowered up to two letter grades.
EXTENUATING Specific components or requirements of this course may change due to CIRCUMSTANCES: extenuating circumstances or specific learner needs. If this happens, those changes will not jeopardize the students' success in terms of the quantity of work involved to meet the new requirements or the amount of time allowed to complete assignments.

ADA If a student wishes to be identified as having a physical, mental, or learning disability that may require accommodations(s), that student must register with the Office of Accessibility as soon as reasonably possible. The Office of Accessibility phone number is (740) 245-7339 and is located in Rhodes Hall, Room 116. The registered student should identify himself/herself to each instructor in a reasonable time-frame (generally within the first two weeks of the start of classes) by providing a written statement from the Accessibility Office which indicates the appropriate accommodations.

FERPA The University of Rio Grande and Rio Grande Community College are committed to fully respecting and protecting the rights of students under the Family Educational Rights and Privacy Act (FERPA). These rights generally include the right to inspect, review and seek amendment to the student’s education records and the right to provide written consent before personally identifiable information from education records is disclosed. Under FERPA, students have the right to file a complaint with the US Department of Education concerning alleged failures to comply with FERPA. Please see the Student Records Confidentiality/Rights under FERPA section of the Student Handbook for details and more information.

HONOR All work submitted for credit must be your own. The submission of another's work as your own will be considered cheating, and will be dealt with according to university policy. Students are encouraged to work together on and to discuss homework assignments. However, work turned in for credit must in the end be composed entirely by the student whose name appears on it. Information obtained from other sources must be credited to the source. If the work submitted is a group project, the quantity and quality of the work must be representative of the number of members in the group.

PLEASE "Manipulative materials demystify mathematics. As a teacher, it's a pleasure to watch children work with materials. They're actively involved. They focus intently on problems, and they respond eagerly to mathematical questions. Materials provide concrete models from which children gain real understanding of abstract ideas. Children's learning with manipulatives is testimony of the claim of the ancient Chinese proverb, 'I hear and I forget, I see and I remember, I do and I understand.'"

Excerpt from the Marilyn Burns video, Mathematics with Manipulatives: Six Models, Focal Point Productions, Inc. for Cuisenaire Company of America, Inc.