Syllabus for

LMAT 099—Introduction to College Mathematics

3 Credit Hours

Online Learning

I. COURSEDESCRIPTION

A non-specialized course in mathematics that surveys the basic concepts of high school mathematics. (Does not count toward a major or minor in mathematics. Increases the number of hours in a degree program by three credit hours. Does not satisfy general education requirement.)

II. COURSE GOALS

The purpose of this course is to enable the student to be able to do the following:

A. Understand the concrete approaches to mathematical concepts.

B. Understand effective communication (oral and written) of mathematical ideas in class and onassignments.

C. Understand the development of mathematical vocabulary.

D. Acquire a strengthening of basic algebraic skills.

E. Make a smoother transition to either of the required general education mathcourses.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

A. Pre-Algebra Units—Whole Numbers, Integers, Fractions, Decimals, Ratio, and Proportion
This unit will be a review and covered rather quickly in order to focus on the Algebra unit. As a result of successfully completing this unit, the student will be able to do the following:

1. Perform operations on whole numbers, integers, fractions, and decimals.
2. Follow the order of operations rule in evaluating mathematical expressions.
3. Evaluate expressions involving exponents.
4. Identify factors and prime numbers.
5. Translate phrases to algebraic expressions and vice versa.
6. Perform operations on equations.
7. Write ratios of like and unlike quantities in simplest form.
8. Solve word problems involving ratios.
9. Write and solveproportions.
10. Solve word problems involving proportions.
11. Find the amount, the base, or the percent in a percent problem.
12. Solve percent problems involving increase and decrease, and simple and compoundinterest.

B. Statistics Unit

As a result of successfully completing this unit, the student will be able to do the following:

1. Find the mean, median, and mode(s) of a list of numbers.
2. Interpret bar graphs, line graphs, frequency distributions, histograms, and circle graphs.

C. Algebra Unit

As a result of successfully completing this unit, the student will be able to do the following:

1. Perform operations on real number expressions and equations.
2. Solve and graph equations and inequalities.
3. Perform operations on polynomials with exponents.
4. Factor and solve quadratic equations.
5. Perform operations and solve rational expressions.
6. Solve systems of linear equations.
7. Perform operations, simplify, and solve equations with radicals.
8. Solve quadratic equations using square root method, completing the square method, and the quadratic formula.
9. Graph quadraticequations.

D. Geometry Unit

As a result of successfully completing this unit, the student will be able to do the following:

1. Correctly define geometric terms and identify their usage.
2. Solve problems involving angles formed by intersecting lines.
3. Find the perimeter and area of plane figures (both simple and composite).
4. Find the volume and surface area of selected geometric solids (both simple and composite).
5. Find the unknown side of a right triangle using the Pythagorean Theorem.
6. Find the scaling factor for given similar figures and solids.
7. Apply scaling factors to create similar figures and solids.
8. Solve similar and congruent triangles.

IV. TEXTBOOKS AND OTHER LEARNINGRESOURCES

A. Required Materials

1. Textbooks

   Margaret Lial, John Hornsby, Terry McGinnis, Stanley Salzman, Diana Hestwood, *Developmental Mathematics.* 4th ed. Boston: Addison-Wesley.
   [Hard Cover ISBN: 9780134539812]
   [Loose Leaf ISBN: 9780134541266]

   The student must purchase a MyMathLab student access code to MyMathLab.com. Access information is available on the D2L course home page. You may also email your instructor for more information.

2. Other:

   Calculator
   Loose-leaf paper
   Ruler and protractor

B. Optional Materials

3. Textbooks

If your instructor uses MyMathLab software, the textbook is available in e-book form via an access code purchased from the ORU bookstore. All homework, tests, and reports of grades are also available via the MyMathLab software.

Margaret Lial, John Hornsby, Terry McGinnis, Stanley Salzman, Diana Hestwood, *Developmental Mathematics.* 2nd ed. Boston: Addison-Wesley, 2010. ISBN-13: 978-0321-59920-9

4. Other

None

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
2. Students taking a late exam because of an unauthorized absence are charged a ($15) late exam fee.
3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, electronic, video, multimedia, or computer software. Plagiarism and other forms of cheating involve both lying and stealing and are violations of ORU's Honor Code: "I will not cheat or plagiarize; I will do my own academic work and will not inappropriately collaborate with other students on assignments." Plagiarism is usually defined as copying someone else's ideas, words, or sentence structure and submitting them as one's own. Other forms of academic dishonesty include (but are not limited to) the following:
   a. Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;
   b. Failing to meet group assignment or project requirements while claiming to have done so;
   c. Failing to cite sources used in a paper;
   d. Creating results for experiments, observations, interviews, or projects that were not done;
   e. Receiving or giving unauthorized help on assignments.

   By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means. Penalties for any of the above infractions may result in disciplinary action including failing the assignment or failing the course or expulsion from the University, as determined by department and University guidelines.
4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding Whole Person Assessment (WPA) requirements. Students should consult the WPA handbooks for requirements regarding general education and the students' majors.
   a. The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.
   b. By submitting an assignment, the student gives permission for the

assignment to be assessed electronically.

B. Department Policies and Procedures

1. Each student who uses the computer is given access to the appropriate computer resources. These limited resources and privileges are given to allow students to perform course assignments. Abuse of these privileges will result in their curtailment. Students should note that the contents of computer directories are subject to review by instructors and the computer administrative staff.
2. Any student whose unexcused absences total 33% or more of the total number of class sessions will receive an F for the course grade.

C. Course Policies andProcedures

1. EvaluationProcedures
   a. Grading scale:
      A=90%
      B=80%
      C=70%
      D=60%
      F=59% and below
      Absence, tardiness, late work, or bad behavior can negatively affect your grades.
2. Whole Person Assessment Requirements
   None

VI. COURSE CALENDAR

The tentative course calendar is listed below. Those using MyMathLab will find the calendar at MyMathLab.com. Check with the bookstore or instructor for the book or software needed for this course.

Day	**Topic**	**Section/HomeworkAssignment**
1	Introduction and Course Procedure	MML orientation videos and exercises
2	Whole Numbers, Addition, Subtraction	1.1 (Problems listed on MML) 1.2 1.3
3	Whole Numbers, Multiplying and Dividing	1.4 1.5 1.6
4	Exponents, Roots, Order of Operations	1.8 2.1 2.2
5	Fraction Basics, Multiplication	2.3 2.4 2.5

6	Fractions, Division, Using mixed numbers	2.7 2.8 3.1	
7	Fractions, Addition, Subtraction	3.2 3.3 3.4	**Week 2**
8	Order Relations, Order of Operations	3.5	
9	Decimal basics, Addition, Subtraction	4.1 4.2 4.3	
10	Decimals, Division, Multiplication	4.4 4.5 4.6	
11	Practice Test 1 and Exam 1	Chapters 1, 2, 3, 4	
12	Real Number System, Variables, Equations, Addition	9.2 9.4	
13	Real Number System, Subtract, Multiply, Divide	9.5 9.6	**Week 3**
14	Properties of Real Numbers	9.7	
15	Simplifying Expressions	9.8	
16	Addition Property of Equality	10.1	
17	Multiplication Property of Equality	10.2	
18	Solving Linear Equations	10.3	
19	Linear Graphs	11.1	
20	Graphing Linear Equations	11.2	**Week 4**
21	Slope of a Line	11.3	
22	Equations of Lines	11.4	
23	Practice Test 2 and Exam 2	Chapters 9, 10, 11	

24	Adding and Subtracting Polynomials	12.1	
25	Product and Exponent Rules	12.2	
26	Multiplying Polynomials	12.3	
27	Special Products	12.4	
28	Integer Exponents, Quotient Rule	12.5	
29	Polynomial ÷ Monomial, Polynomial ÷ Polynomial	12.6 12.7	
30	Factors	13.1	
31	Factoring Trinomials	13.2 13.4	**Week 6**
32	Multiplying Signed Numbers	13.6 13.7	
33	Practice Test 3 and Exam 3	Chapters 12, 13	
34	Evaluating Roots	16.1	
35	Introduction to Basic Statistics	16.2	
36	Rationalizing the Denominator	16.3 16.4	
37	Solving Equations with Radicals	16.6	
38	Solving Quadratic Equations	17.1	
39	Solving Equations by Completing the Square	17.2	**Week 7**
40	Quadratic Formula	17.3	
41	Triangles	7.7 7.4	
42	Lines and Angles, Review	7.1	
43	Practice Test 4 and Exam 4	Chapters 16, 17, 7	
44	Practice Final Test and Final Exam	Comprehensive	

Course Inventory for ORU's Student Learning Outcomes
LMAT 099—Introduction to College Mathematics

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment. **Moderate Contribution** – Addresses the outcome directly or indirectly and includes some assessment. **Minimal Contribution** – Addresses the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities	Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A	Biblical knowledge			X	
1B	Sensitivity to the Holy Spirit			X	
1C	Evangelistic capability				X
1D	Ethical behavior			X	
2	**Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A	Critical thinking			X	
2B	Information literacy			X	
2C	Global & historical perspectives				X
2D	Aesthetic appreciation				X
2E	Intellectual creativity			X	
3	**Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A	Healthy lifestyle				X
3B	Physically disciplined lifestyle				X
4	**Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A	Communication skills				X
4B	Interpersonal skills				X
4C	Appreciation of cultural & linguistic differences				X
4D	Responsible citizenship			X	
4E	Leadership capacity				X