DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – FALL 2012

INTRODUCTION TO MATH 0081

INSTRUCTOR: Alan Iwaskow **PHONE:** (780) 539-2713
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OFFICE HOURS: 6:45 – 7:00pm Tuesdays and Thursdays in the Math Lab

PREREQUISITE(S)/COREQUISITE:
MA0060, or equivalent math placement test score

REQUIRED TEXT/RESOURCE MATERIALS:
Package of MA0081 modules, 2011
Scientific calculator which will be used for module 9 (Dimensional Geometry) only

CALENDAR DESCRIPTION:
This course is a modularized program of study which covers whole numbers, decimals, fractions, integers, introduction to algebra, introduction to equations, metric measurement, dimensional geometry, and problem solving.

CREDIT/CONTACT HOURS:
MA0081 Basic Mathematics II 5 (5-0-0)
Time: 75 Hours

DELIVERY MODE:

MA 0081 is a modularized math course divided into 9 separate units called modules. The instructions for each topic are given in the modules, followed by several examples and exercises. Study the instructions and work through the examples before starting each exercise. The answers for each exercise are given at the end of the module. Check your work often to make sure you understand each new topic.

The key to success in working with modules is to ask questions whenever you have difficulty understanding the instructions, the examples, or the exercises. **Do not hesitate to ask for help.**

After each module you must write a test. When writing a test, be sure to show all of your work on the test paper. Marks are given for method as well as for final answers. A passing mark of 60% is required on the test before continuing on to the next module. If you are unable to attain this mark, you must review the material and rewrite the test. The first and second test marks will be averaged.

A 50-minute midterm, which will cover the first four modules, must be written by **Thursday, October 18.** If you miss this date, you will receive a mark of 0% on your midterm. Upon completion of all the course modules, you will write a three hour final exam. Be sure to leave time to prepare for these important exams! They are worth a large percentage of your final grade.

The recommended test date for each module and the midterm is on page 7. Follow these dates as closely as you can. You are encouraged to write a test early if you are prepared. **Consult your instructor immediately if you find yourself falling behind schedule.** Your instructor may need to reassess your math skills to ensure that you are placed in a course where you can be successful. All tests must be written by **December 11.**

Bonus

When you write your module tests on or before the given date, you will be awarded an additional 2% on your score for each test.

SUCCESS STANDARD:
Although 50% is considered a pass for this course, if you wish to be successful at the next level, we strongly recommend that you achieve a mark of 60% or better.

GRADING CRITERIA:
Your final mark is determined by:

9 module tests	45%
Midterm	20%
Final Exam	35%

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	**4-point Equivalent**	**Percentage Guidelines**	**Designation**
A^{+}	**4.0**	**90 – 100**	**EXCELLENT**
A	**4.0**	**85 – 89**	
A^{-}	**3.7**	**80 – 84**	**FIRST CLASS STANDING**
B^{+}	**3.3**	**77 – 79**	
B	**3.0**	**73 – 76**	**GOOD**
B^{-}	**2.7**	**70 – 72**	
C^{+}	**2.3**	**67 – 69**	**SATISFACTORY**
C	**2.0**	**63 – 66**	
C^{-}	**1.7**	**60 – 62**	
D^{+}	**1.3**	**55 – 59**	**MINIMAL PASS**
D	**1.0**	**50 – 54**	
F	**0.0**	**0 – 49**	**FAIL**
WF	**0.0**	**0**	**FAIL, withdrawal after the deadline**

Learning Outcomes:

1. Whole Numbers

- Give the place value of digits in standard notation.
- Convert between standard notation and expanded notation.
- Convert between standard notation and word names.
- Use < or > symbol between two numbers.
- Add two or more whole numbers.
- Subtract whole numbers.
- Convert between addition sentences and subtraction sentences.
- Multiply whole numbers.
- Divide whole numbers and use multiplication to check the answer.
- Convert between division sentences and multiplication sentences.
- Convert between exponential and expanded notation.
- Determine the perfect square root of selected whole numbers.
- Simplify expressions using the rules for order of operations.
- Simplify signs of grouping.
- Solve applied problems involving addition, subtraction, multiplication, or division for whole numbers.

Note: This section covers the entire course material for MA0060.

2. Decimals

- Given decimal notation, write a word name or vice versa.
- Given a pair of numbers in decimal notation, tell which is larger.
- Given a list of decimal numbers, arrange the list from smallest to largest or vice-versa.
- Round decimal notation to the nearest thousandth, hundredth, tenth, one, ten, hundred, or thousand.
- Add, subtract, multiply, and divide using decimal notation.
- Simplify expressions using the rules for order of operations.
- Solve applied problems involving addition, subtraction, multiplication, or division for decimal numbers.

3. Introduction to Fractions

- Identify the numerator and the denominator of a fraction and write fraction notation for a part of an object.
- Write the word name for a given fraction or vice versa.
- From a given group of fractions, identify the proper fractions, improper fractions, and mixed numbers.
- Change an improper fraction to a mixed number or vice versa.
- Change whole number or fractions to equivalent fractions with the indicated denominator.

- Verify whether or not the fractions in a pair are equivalent.
- Write a number as a product of prime factors.
- Find the greatest common factor (GCF) of two or more numbers.
- Reduce a fraction to lowest terms using GCF.
- Find the lowest common multiple (LCM) of two or more numbers.
- Determine whether two fractions are equivalent.
- Arrange a list of fractions in order of smallest to largest or vice versa.
- Write a fraction as a decimal or a decimal as a fraction.

4. Operations with Fractions

- Add and subtract fractions with a common denominator.
- Add and subtract fractions with different denominators.
- Multiply two proper or improper fractions.
- Multiply a whole number by a fraction.
- Multiply mixed fractions.
- Divide two proper or improper fractions.
- Divide a whole number and a fraction.
- Divide mixed numbers.
- Simplify complex fractions.
- Simplify complex fractions with addition or subtraction in the numerator and/or denominator.
- Solve real-life problems with fractions.

5. Introduction to Integers

- Represent the graphs of integers on the number line.
- Calculate the absolute value of an integer
- Add two or more signed numbers.
- Write the additive inverse of an integer.
- Subtract signed numbers.
- Add and subtract more than two integers.
- Multiply two or more signed numbers.
- Divide signed numbers.
- Evaluate a power of an integer.
- Evaluate expressions in which the order of performing operations must be determined.
- Evaluate expressions that contain grouping symbols.
- Work with word problems involving signed numbers.

6. Introduction to Algebra

- Write a phrase for a mathematical expression.
- Write a variable expression in words.
- Evaluate a variable expression, given the values for each variable.
- Identify the terms of an expression and state whether they are like or unlike terms.

- Simplify an expression by collecting the like terms in the expression.

7. Introduction to Equations

- Determine whether a given number is a solution of an equation or not.
- Solve equations using the addition or subtraction property, and verify the answer in the original equation.
- Solve equations using the division or multiplication property.
- Use two properties to solve an equation.
- Solve equations where the variable is on both sides an equation.
- Find the value of the indicated variable provided the values of other literal variables are given.
- Solve real life word problems involving literal variables in an equation.

8. Measurement

- Understand prefixes in metric units.
- Convert from one metric unit of length to another.
- Convert from one metric unit of mass to another.
- Convert between metric units of volume.
- Convert between units of time.
- Convert between Fahrenheit and Celsius degrees of temperature.
- Solve real life word problems involving metric units, time, or temperature.

9. Dimensional Geometry

- Indicate the proper name of a given of a polygon.
- Find the perimeters of triangles, quadrilaterals, polygons, and circles.
- Find the areas of rectangles, squares, parallelograms, triangles, trapezoids, regular pentagons, and circles.
- Find the perimeters and areas of composite figures.
- Find the hypotenuse of a right triangle given the length of each leg.
- Find the length of a leg of right triangle given the lengths of the hypotenuse and the other leg.
- Solve applied problems using the Pythagorean Theorem.
- Find the volumes of rectangular solids (box), cylinders, spheres, cones, and pyramids.
- Find the surface areas of rectangular prisms, cubes, and cylinders.

MA0081 Fall 2012
Topics / Tests / Exams

Module	DESCRIPTION	Recommended Time & Test Date	Date written	Your mark
1	Whole Numbers - reading, writing and rounding - four basic operations, order of operations - exponents and square roots; word problems	Thursday Sept. 13		
2	Decimals - reading, writing and rounding - four basic operations - order of operations	Tuesday Sept. 25		
3	Introduction to Fractions - proper, improper, mixed fractions - equivalent fractions; comparing fractions - reducing fractions	Thursday Oct. 4		
4	Operations with Fractions - four basic operations - complex fractions - word problems	Tuesday Oct. 16		
	Midterm – must be written on or before	**Thursday, Oct. 18**		
5	Introduction to Integers - real life positive and negative numbers - four basic operations - exponents, order of operation	Thursday Nov. 1		
6	Introduction to Algebra - basic algebraic concepts - writing variable expressions - evaluating expressions	Thursday Nov. 8		
7	Introduction to Equations - solving simple linear equations - formulas	Tuesday Nov. 20		
8	Measurement - linear measurement, mass and volume - converting within metric system - time and temperature	Thursday Nov. 29		
9	Dimensional Geometry - perimeter, area and volume - Pythagorean Theorem	Thursday Dec. 6		
	Final Exam	**To be announced** (Dec. 13-22)		

Fall 2012 Night Class Schedule FINAL EXAMS TO BE ANNOUNCED (December 13-22)

	MA0081	**MA0091**	**MA0110**	**MA0120**
Sep 6 Th	M1 Ex 1-6	M1 Ex 1-6	M1 Ex 1-3	M1 Ex 1-3
Sep 11 Tu	M1 Ex 7-10	M1 Ex 7-12	M1 Ex 4-6	M1 Ex 4-6
Sep 13 Th	M1 Rev, Test 1 M2 Ex 1	M1 Ex 13-14, Rev, T1	Rev, Test 1	M1 Rev, Test 1 M2 Ex 1-3
Sep 18 Tu	M2 Ex 2-4	M2 Ex 1-4	M2 Ex 1-2	M2 Ex 4-5
Sep 20 Th	M2 Ex 5-6, Rev	M2 Ex 5-8	M2 Ex 3-4	M2 Rev, Test 2
Sep 25 Tu	M2 Test 2 M3 Ex 1-4	M2 Ex 9, Rev, T2	M2 Ex 5-6	M3 Ex 1-5
Sep 27 Th	M3 Ex 5-9	M3 Ex 1-4	M2 Ex 7, Rev, Test 2	M3 Ex 6-9
Oct 2 Tu	M3 Ex 10, Rev	M3 Ex 5-8	M3 Ex 1-3	M3 Ex 10, Rev Test 3
Oct 4 Th	Test 3 M4 Ex 1-2	M3 Ex 9, Rev, T3 M4 Ex 1	M3 Ex 4-5	M4 Ex 1-4
Oct 9 Tu	M4 Ex 3-5	M4 Ex 2-5	M3 Rev, Test 3	M4 Ex 5-6
Oct 11 Th	M4 Ex 6- 9	M4 Rev, T4 M5 Ex 1-2	M4 Ex 1-3	M4 Rev, Test 4 M5 Ex 1-2
Oct 16 Tu	M4 Rev, Test 4	M5 Ex 3-7	M4 Ex 4, Rev	M5 Ex 3-6
Oct 18 Th	MT Review **MIDTERM**	M5 Ex 8, Rev, T5 Midterm Review	Test 4, Midterm Review	M5 Rev, Test 5
Oct 23 Tu	M5 Ex 1-2	Review, **MIDTERM** M6 Ex 1	MT Rev, **MIDTERM**	Midterm Review **MIDTERM**
Oct 25 Th	M5 Ex 3-5	M6 Ex 2-5	M5 Ex 1-3	M6 Ex 1-4
Oct 30 Tu	M5 Ex6-8	M6 Ex 6-10	M5 Ex 4-6	M6 Ex 3-5
Nov 1 Th	M5 Rev, T5 M6 Ex1	M6 Ex 11, Rev, T6 M7 Ex 1-2	M5 Ex 7-8, Rev, Test 5	Rev, Test 6 M7 Ex 1
Nov 6 Tu	M6 2-4	M7 Ex 3-7	M6 Ex 1-2	M7 Ex 2-4
Nov 8 Th	M6 Rev, T6 M7 Ex1	M7 Ex 8, Rev, T7	M6 Ex 3-4	M7 Ex 5-6, Rev
Nov 13 Tu	Fall Break	Fall Break	Fall Break	Fall Break
Nov 15 Th	M7 Ex 2-5	M8 Ex 1-3	M6 Rev, Test 6 M7 Ex 1-2	Test 7 M8 Ex 1-2
Nov 20 Tu	M7 Rev, T7 M8 Ex 1-2	M8 Ex 4-5, Rev	M7 Ex 3-4	M8 Ex 3-5
Nov 22 Th	M8 Ex 3-5	T8 M9 Ex 1	M7 Ex 5-6	M8 Ex 6-7
Nov 27 Tu	M8 Ex 6-8, Rev	M9 Ex 2-5	M 7 Rev, Test 7	M8 Rev, Test 8 M9 Ex 1
Nov 29 Th	Test 8 M9 Ex 1-3	M9 Rev, T9 M10 Ex 1-2	M8 Ex 1-2	M9 Ex 2-5
Dec 4 Tu	M9 Ex 4-6	M10 Ex 3-7	M8 Ex 3-5	M9 Ex 6-9
Dec 6 Th	M9 Rev, Test 9	M10 Ex 8-9, Rev, T10	Test 8	M9 Ex 10, Rev, Test 9
Dec 11 Tu	Final Review	Final Review	Final Review	Final Review
Dec 13-22	Final Exam TBA	Final Exam TBA	Final Exam TBA	Final Exam TBA

STUDENT RESPONSIBILITIES:
In addition to the ***Student Rights and Responsibilities*** as set out in the college website, the following guidelines will maintain an effective learning environment for everyone:

1. Regular attendance is expected of all students in all mathematics courses. Your success in math is directly linked to your attendance. Attendance will be taken daily.

2. Students are expected to be punctual. Arrive on time for classes and remain for the duration of scheduled classes.

3. Refrain from disruptive talking or socializing during class time.

4. Be respectful of others regarding food or beverages in the classroom. Clean up your eating area and dispose of garbage.

5. Recycle paper, bottles, and cans in the appropriate containers.

6. Children are not permitted in the classrooms.

7. Students are expected to notify the instructor of any extenuating circumstances.

ELECTRONIC DEVICES:
Students are expected to turn off cell phones during class time or in labs. No unspecified electronic devices will be allowed in exams.

STATEMENT OF PLAGIARISM:
Please refer to the College Website for policies regarding plagiarism and cheating as well as the resultant penalties. These are serious issues and will be dealt with severely.