DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – WINTER 2014

INTRODUCTION TO MATH 0081

INSTRUCTOR: Joelle Reynolds **PHONE:** (780) 539-2810 or 2204
OFFICE: Math Lab A210 **E-MAIL:** jreynolds@gprc.ab.ca

OFFICE HOURS: Daily 8:30 am - 9:00 am 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 **Tuesday, February 25th.** 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 **April 14th,** the last day of classes**.**

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 an integer on a graph of 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 of 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 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 a 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 Winter 2014
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	7 days Thursday Jan. 16th		
2	Decimals - reading, writing and rounding - four basic operations - order of operations	6 days Friday Jan. 24th		
3	Introduction to Fractions - proper, improper, mixed fractions - equivalent fractions; comparing fractions - reducing fractions	6 days Monday Feb. 3rd		
4	Operations with Fractions - four basic operations - complex fractions - word problems	9 days Friday Feb. 14th		
	Midterm – must be written on or before	**Tuesday, February 25th**		
5	Introduction to Integers - real life positive and negative numbers - four basic operations - exponents, order of operation	8 days Friday Mar. 7th		
6	Introduction to Algebra - basic algebraic concepts - writing variable expressions - evaluating expressions	5 days Friday Mar. 14th		
7	Introduction to Equations - solving simple linear equations - formulas	7 days Tuesday Mar. 25th		
8	Measurement - linear measurement, mass and volume - converting within metric system - time and temperature	6 days Wednesday Apr. 2nd		
9	Dimensional Geometry - perimeter, area and volume - Pythagorean Theorem	8 days Monday Apr. 14th		
	Review for Final			
	Final Exam	**To be announced** (April 16th -28th)		

MA0081 Winter 2014
Homework Schedule

1. Whole Numbers

1-3	4&5	6&7	8&9	10	Review	**Test: Thur., Jan. 16**
Jan 8	**9**	**10**	**13**	**14**	**15**	

2. Decimals

1-2	3	4-5	6	Review	**Test: Fri., Jan. 24**
Jan.17	**20**	**21**	**22**	**23**	

3. Introduction to Fractions

1–3	4&5	6&7	8&9	10&Review	**Test: Monday., Feb.3**
Jan. 27	**28**	**29**	**30**	**31**	

4. Operations with Fractions

1	2	3	4	5&6	7	8&9	**Review**	**Test: Fri., Feb.14**
Feb. 4	**5**	**6**	**7**	**10**	**11**	**12**	**13**	

Midterm Exam on Tuesday, February 25th

5. Introduction to Integers

1	2	3	4	5&6	7&8	Review	**Test: Fri., Mar.7**
Feb. 26	**27**	**28**	**Mar. 3**	**4**	**5**	**6**	

6. Introduction to Algebra

1&2	3	4	Review	**Test: Fri., Mar.14**
Mar. 10	**11**	**12**	**13**	

7. Introduction to Equations

1	2	3	4	5	Review	**Test: Tues., Mar.25**
Mar. 17	**18**	**19**	**20**	**21**	**24**	

8. Measurement

1&2	3&4	5&6	7&8	Review	**Test: Wed., Apr. 2**
Mar.26	**27**	**28**	**31**	**Apr. 1**	

9. Dimensional Geometry

1	2	3	4	5	6	Review	**Test: Mon., Apr.14**
Apr.3	**4**	**7**	**8**	**9**	**10**	**11**	

Final exam to be announced (April 16th -28th)

January, 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 New Year's Day Limited access to College buildings	2	3	4
5	6 (GP) Orientation to College for newly registered students	7 Orientation to the the Math Lab	8 Module 1: Whole Numbers Exercise 1 - 3	9 Exercise 4 & 5	10 Exercise 6 & 7	11
12	13 Exercise 8 & 9	14 Exercise 10	15 Review Exercise	16 Test #1	17 Module 2: Decimals Exercise 1 - 2	18
19	20 Exercise 3	21 Exercise 4 & 5	22 Exercise 6	23 Review Exercise	24 Test #2	25
26	27 Module 3: Intro to Fractions Exercise 1 - 3	28 Exercise 4 & 5	29 Exercise 6 & 7	30 Exercise 8 & 9	31 Exercise 10 & Review	

February, 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3 Test # 3	4 Module 4: Operations with Fractions Exercise 1	5 Exercise 2	6 Exercise 3	7 Exercise 4	8
9	10 Exercise 5 & 6	11 Exercise 7	12 Exercise 8 & 9	13 Exercise Review	14 Test #4	15
16	17 Family Day	18 Winter Break	19 Winter Break	20 Winter Break	21 Winter Break	22
23	24 Study for the Midterm	25 Midterm Exam	26 Module 5: Intro to Integers Exercise 2	27 Exercise 2	28 Exercise 3	

March, 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3 Exercise 4	4 Exercise 5 & 6	5 Exercise 7 & 8	6 Exercise Review	7 Test # 5	8
9	10 Module 6: Intro to Algebra Exercise 1 & 2	11 Exercise 3	12 Exercise 4	13 Review Exercise	14 Test # 6	15
16	17 Module 7: Intro to Equations Exercise 1	18 Exercise 2	19 Exercise 3	20 Exercise 4	21 Exercise 5	22
23 30	24 Review Exercise 31 Exercise 7 & 8	25 Test # 7	26 Module 8: Measurement Exercise 1 & 2	27 Exercise 3 - 4	28 Exercise 5 & 6	29

April, 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 Review Exercise	2 Test # 8	3 Exercise 9: Dimensional Geometry Exercise 1	4 Exercise 2	5
6	7 Exercise 3	8 Exercise 4	9 Exercise 5	10 Exercise 6	11 Review Exercise	12
13	14 Test # 9	15	16 First Day of Final Exams	17	18 Good Friday	19
20	21	22	23	24	25	26
27	28 Last Day of Final Exams	29	30			

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.

STUDENT PRINTING POLICY:

Please refer to the College website (Home > Tuition and Fees) for the printing policy which limits the free use of paper; extra charges will applied if the limit is exceeded.