DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – FALL 2015

MA 0081 E2 - Basic Mathematics II – 5 (5-0-0) HS

INSTRUCTOR:	Reddy Ganta	**PHONE:**	780-539-2810 or 2850
OFFICE:	Math Lab or J220	**EMAIL:**	rganta@gprc.ab.ca
OFFICE HOURS:	11:00 to 12:30 pm Tuesday and Thursday in A205, or by appointment		

PREREQUISITES:
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: Five hours/week

DELIVERY MODES:
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, October 20.** 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 8,** the last day of classes**.**

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.

OBJECTIVES:
The aims of this course are to provide students with the skills of whole numbers, decimals, fractions, integers, introduction to algebra, introduction to equations, metric measurement, dimensional geometry, and problem solving

LEARNING OUTCOMES:

As a result of taking this course, students will gain the ability to:

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.

GRADING CRITERIA:

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	**4-point Equivalent**	**Percentage of Class**	**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**

MA0081 Fall 2015
Topics / Tests / Exams

Test #1	% towards the Final Exam	Topics	Recommended Test Date	Date Written	Mark Obtained
1	10%	Whole Numbers & Decimals	September 22		
2	10%	Intro to Fractions & Operations With Fractions	October 15		
Midterm	**20%**	**All the above**	**October 20**		
3	10%	Intro to Integers & Intro to Algebra	November 5		
4	10%	Intro to Equations & Measurements	November 24		
5	5%	Dimensional Geometry	December 3		
Final	**35%**		**To be announced** (Dec. 10 - 19)		

Your final mark is determined by:

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

STUDENT RESPONSIBILITIES:

In addition to the ***Student Rights and Responsibilities*** as set out in the college website: https://www.gprc.ab.ca/files/forms_documents/StudentRightsandResponsibilities.pdf 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.

STUDENT PRINTING POLICY:
Please refer to the College website:
https://www.gprc.ab.ca/files/policies/admin/StudentPrintingPolicy.pdf
for the printing policy which limits the free use of paper; extra charges will applied if the limit is exceeded.

STATEMENT ON PLAGIARISM AND CHEATING: Refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at
http://www.gprc.ab.ca/files/forms_documents/Student_Misconduct.pdf

MA0081 FALL 2015
Homework Schedule

1. Whole Numbers

1-5	6-8	9-10, Review
Sept. 3	**8**	**10**

2. Decimals

1-3	4-6, Review	**Test 1 (Mod. 1&2)**
Sept. 15	**17**	**Tuesday, Sept. 22**

3. Introduction to Fractions

1-2	3&6	7&9	10&Review
Sept. 22	**24**	**29**	**Oct. 1**

4. Operations with Fractions

1-2	3-7	8&9&**Review**	**Test 2 (Mod. 3&4)**
Oct. 6	**8**	**13**	**Thursday, Oct. 15**

Midterm Exam on Tuesday, October 20

5. Introduction to Integers

1&2	3-7	8& Review
Oct. 20	**22**	**27**

6. Introduction to Algebra

1-3	4& Review	**Test 3 (Mod. 5&6)**
Oct. 29	**Nov.3**	**Thursday, Nov. 5**

7. Introduction to Equations

1-5	5 &Review
Nov. 5	**10**

8. Measurement

1-4	5-8&Review	**Test 4 (Mod. 7&8)**
Nov. 17	**19**	**Tuesday, Nov. 24**

9. Dimensional Geometry

1-3	4-6	7&Review	**Test: Thurs., Dec. 3**
Nov. 24	**26**	**Dec. 1**	

Final exam to be announced (December 10 - 19)