GPRC

DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – FALL 2015
MA 0110B2C2VC- Mathematics Grade 10-C Equivalent – 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, or by appointment

PREREQUISITES:
MA0091, or equivalent math placement test score

REQUIRED TEXT/RESOURCE MATERIALS:
Package of MA0110 modules, 2012
Scientific calculator, graph paper

CALENDAR DESCRIPTION:
This is a modularized course which covers measurement including surface area and volume, introduction to trigonometry, numbers, roots and exponents, polynomial multiplication and factoring, relations and functions, linear functions, and systems of equations.

CREDIT/CONTACT HOURS: Five hours/week

DELIVERY MODES:
MA0110 is a modularized math course consisting of 8 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 the final answer. 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 given in this course outline. 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 Tuesday, December 8.**

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 measurement including surface area and volume, introduction to trigonometry, numbers, roots and exponents, polynomial multiplication and factoring, relations and functions, linear functions, and systems of equations.   Problem-solving is the emphasis throughout the course.

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

1. **Measurement**
   - Convert measurements in imperial units.
   - Convert measurements between SI units and imperial units.
   - Solve problems, using SI and imperial units that involve the surface area and volume of 3-D object, including
   - Right cones and cylinders
   - Right prisms and pyramids
   - Spheres

2. **Trigonometry**
   - Solve similar right triangles using proportions.
   - Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles.

3. **Numbers and Roots**
   - Demonstrate an understanding of factors of whole numbers by determining:
     - prime factors
     - greatest common factor
     - least common multiple
     - square root and cube root.
   - Demonstrate an understanding of irrational numbers by:
     - representing, identifying, and simplifying irrational numbers
     - ordering irrational numbers.

4. **Exponents**
   - Demonstrate an understanding of powers with integral and rational exponents.
   - Apply the laws of exponents to simplify expressions.

5. **Polynomials: Multiplication and Factoring**
   - Demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials and trinomials).
   - Demonstrate the understanding of factoring a polynomial expression by:
     - factoring out a monomial or binomial common factor
     - factoring a trinomial
     - Factoring the difference of squares.

6. Relations and Functions

- Describe and represent relations, using:

  - words
  - ordered pairs
  - table of values
  - graphs
  - arrow diagrams
  - equations.

- Interpret and explain the relationships among data, graphs and situations.
- Determine the domain and range of a relation.

- Determine if a relation is a function. Or Use functional notation to determine values.

7. Linear Functions

- Demonstrate an understanding of slope with respect to:

  - rise and run
  - line segments and lines
  - rate of change
  - parallel and perpendicular lines.

- Graph a linear function by

  - constructing a table of values and plotting points
  - determining and plotting x and y-intercepts
  - using slope and y-intercept.

- Determine the characteristics of the graphs of linear relations, including:

  - intercepts
  - slope
  - domain and range.

- Relate to their graphs, linear relations expressed in:

  - slope-intercept form: $y = mx + b$
  - slope-point form: $y - y_1 = m(x - x_1)$.

- Determine the equation of a line given the following information:

  - a graph
  - a point and the slope
  - two points
  - a point and the equation of a parallel or perpendicular line
  - slope and y-intercept.

- Express an equation in general form: $Ax + By + C = 0$.

- Represent a linear function, using function notation.

8. Systems of Equations

- Solve systems of linear equations in two unknowns using:

  - graphing
  - elimination
  - substitution.

- Solve problems involving systems of equations.

GRADING CRITERIA:

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

Fall 2015
MA0110 Tests/Exams

Test #	% toward the Final Exam	Topic	Recommended Test Date	Date written	Your mark
1	6%	Measurement	Monday, September 14		
2	6%	Trigonometry	Friday, September 25		
3	12%	Numbers and Roots & Exponents	Thursday, October 15		
Midterm	17%	All of the Above	**Tuesday, October 20**		
4	6 %	Polynomials	Monday, November 2		
5	6 %	Relations and Functions	Tuesday, November 10		
6	6 %	Linear Functions	Wednesday, November 25		
7	6 %	Systems of Equations	Monday, December 7		
Final Exam	35 %	All of the Above	**T.B.A.** December 10 - 19		

Your final mark is determined by:

7module tests	48%
Midterm	17%
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

MA0110 Homework Schedule
Fall 2015

1. Measurement

1&2	3	4	5	6	Review	**Test: Monday, Sept. 14**
Sept. 3	**4**	**8**	**9**	**10**	**11**	

2. Trigonometry

1	2	3	4	5	6	7	Review	**Test: Friday, Sept. 25**
Sept. 15	**16**	**17**	**18**	**21**	**22**	**23**	**24**	

3. Numbers and Roots

1	1	2	3	4	5	Review
Sept. 28	**29**	**30**	**Oct. 1**	**2**	**5**	**6**

4. Exponents

1	2	3	4	Review	**Test 3(Mod. 3 & Mod. 4)**
Oct. 7	**8**	**9**	**13**	**14**	**Thursday, Oct. 15**

Midterm Exam on Tuesday, October 20

5. Polynomials

1&2	3	4	5	6	7	8	Review	**Test: Monday, Nov. 2**
Oct. 21	**22**	**23**	**26**	**27**	**28**	**29**	**30**	

6. Relations and Functions

1	2	3	4	Review	**Test: Tuesday, Nov. 10**
Nov. 3	**4**	**5**	**6**	**9**	

7. Linear Functions

1	1&2	3	4	5	6	Review	**Test: Wednesday, Nov. 25**
Nov. 16	**17**	**18**	**19**	**20**	**23**	**24**	

8. Systems of Equations

1	2	3	4	5	6	Review	**Test: Monday, Dec. 7**
Nov. 26	**27**	**30**	**Dec. 1**	**2**	**3**	**4**	

Final Exam: (Dec. 10 – 19) to be announced