GPRC

DEPARTMENT OF ACADEMIC UPGRADING
Course Outline – Winter 2015
Mathematics Grade 10-3 Equivalent

INSTRUCTOR: Sukhvir Sandhu   **PHONE:**   (780) 539 – 2234 or 2810
OFFICE: Math Lab A210   **E-MAIL:**   ssandhu@gprc.ab.ca

OFFICE HOURS: Daily, 8:00-8:30 am & 11:00 – 11:45 am in the Math Lab

PREREQUISITE(S)/COREQUISITE:
MA0091, MA0093 or equivalent math placement test score

REQUIRED TEXT/RESOURCE MATERIALS:
- Math Works 10 Workbook; Math Works 10 Textbook will be available to students in the Math Lab during lab hours.
- Other supplies you will need include a binder, lined paper, unlined paper, graph paper, mechanical pencil, scientific calculator, geometry set.

CALENDAR DESCRIPTION: (MA0113, Mathematics 10 – 3 Equivalent 5(5-0-0) HS 75 Hours)
This course is a modularized program of study which covers unit pricing and currency exchange; earning an income; measurement including surface area and volume; conversion between SI and imperial units, Celsius and Fahrenheit temperature scales; angles and parallel lines; scale diagram of polygon figures; and trigonometry of right triangles.

DELIVERY MODE:

MA 0113 is a modularized math course divided into 7 separate topics called chapters.   Each chapter is further divided into sections. Each section introduces one new skill at a time followed by a new term written in **bold letters,** with its explanation on the left margin, up to a maximum of four to six new terms. Each new skill is demonstrated with an example with clearly stated instructions, followed by **Build Your Skills** exercise questions. Study the term and its explanation and work through the example before starting the exercise. The answers to all the questions are available near the end of the Workbook under the title **Answer Key**. The mastery of all the skills covered under each section is further tested in an exercise called **Practice Your**

New Skills. Check your work often to make sure you understand the newly introduced concepts. The key to success in working with a one-to-one delivery method is to ask questions whenever you have difficulty understanding the instructions, the examples, or the exercises. **Do not hesitate to ask for help.**

Tests: After each chapter, 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 chapter. 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 chapters, must be written by **Friday, March 6.** If you miss this date, you will receive a mark of 0% on your midterm. Upon completion of all the seven chapters, 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 chapter and the midterm is included in this 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, April 14.**

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:

7 Chapter tests	42%
Midterm	20%
Final Exam	38%

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**

TRANSFERABILITY:

This course is listed in the Alberta Transfer Guide. It is accepted at colleges and universities in Alberta as equivalent to Mathematics 10 – 3.

Learning Outcomes:

1. **Unit Pricing and Currency Exchange**
    *   Find percent and solve problems that involve unit pricing using proportional reasoning.
    *   Find rates and learn how to determine which purchase is the best buy by considering quality and quantity as well as unit price.
    *   Find mark-ups, calculate taxes, and investigate sales promotions and compare their effects.
    *   Convert between Canadian currency and foreign currencies, using proportional reasoning.

2. **Earning an Income**
    *   Demonstrate an understanding of income, including:
        - wages including overtime
        - salary
        - contracts
        - commissions
        - piecework
    *   Calculate earnings, given the rate of pay and the amount of time worked.
    *   Learn about a range of payment types that vary from employer to employer and industry to industry.
    *   Explain why gross pay and net pay are not the same.
    *   Calculate deductions and find net pay.

3. **Length, Area, and Volume**
    *   Identify a conversion factor for a given common SI or imperial unit of linear measurement.
    *   Convert measurements from SI to imperial units and from imperial to SI units.
    *   Calculate perimeter, circumference, and area in imperial units.
    *   Calculate surface area and volume of three-dimensional objects in imperial units.

4. **Mass, Temperature, and Volume**
    *   Compare and make conversions within and between imperial and SI units of mass/weight.
    *   Examine the difference between mass and weight in each system.

- Solve problems involving the conversion between Celsius and Fahrenheit temperature scales.
- Perform other conversions that are important in the workplace such as conversions between mass and volume.

5. Angles and Parallel Lines

- Measure, draw, and describe angles.
- Estimate the measure of angles.
- Demonstrate an understanding of angles, including acute, right, obtuse, straight, and reflex, by:
    - drawing
    - replicating and constructing
    - bisecting
- Use certain angles to determine whether two lines are parallel.
- Solve problems involving angles and pairs of angles, and parallel, non-parallel, perpendicular, and transversal lines.

6. Similarity of Figures

- Identify similar polygons.
- Identify images that are not similar to the original diagrams.
- Understand what characteristics make triangles similar.

7. Trigonometry of Right Triangles

- Determine the primary trigonometric ratios (sine, cosine, & tangent).
- Determine lengths of sides of right triangles using the ratios.
- Determine the size of angles if you know the ratios.
- Understand the concepts of angle of elevation and angle of depression.
- Solve problems that require the manipulation and application of formulas related to the Pythagorean Theorem and primary trigonometric ratios.

Winter 2015
MA0113 Tests / Exams

Chapter	Topic	Recommended Time & Test Date	Date written	Your mark
1	Unit Pricing and Currency Exchange	9 Days Monday Jan. 19		
2	Earning An Income	8 Days Thursday Jan. 29		
3	Length, Area, and Volume	10 Days Thursday Feb. 12		
4	Mass, Temperature, and Volume	9 Days Wednesday Mar. 4		
	Review for the midterm	1 Day		
	Midterm – must be written on or before	**Friday** **Mar. 6**		
5	Angles and Parallel Lines	7 Days Tuesday Mar. 17		
6	Similarity of Figures	7 Days Thursday Mar. 26		
7	Trigonometry of Right Triangles	10 Days Friday Apr. 10		
	Review for the Final	2 Days		
	Final Exam – 3 Hours	**T.B.A** **Apr. 16 - 27**		

MA0113 Homework Schedule

Jan. 6	Do:	Get familiar with the Math Works Workbook and get to know each other.

Chapter 1:   Unit Pricing and Currency Exchange

Jan. 7	Do:	Example 1 on page 10 to Build Your Skills ending on page 21.
Jan. 8	Do:	Practice Your New Skills on page 21 to Build Your Skills ending on page 31.
Jan. 9	Do:	Practice Your New Skills on page 32 to Build Your Skills ending on page 41.
Jan. 12	Do:	Example 4 on page 42 to Practice Your New Skills ending on page 48.
Jan. 13	Do:	Example 1 on page 49 to Practice Your New Skills ending on page 58.
Jan. 14	Do:	Example 1 on page 59 to Practice Your New Skills ending on page 69.
Jan. 15	Do:	Chapter Test on page 70 to 73
Jan. 16	Do:	Review for the test.
Jan. 19	**Test #1 (Monday)**	

Chapter 2:   Earning an Income

Jan. 20	Do:	Example 1 on page 74 to Build Your Skills ending on page 82.
Jan. 21	Do:	Example 6 on page 83 to Practice Your New Skills ending on page 86.
Jan. 22	Do:	Example 1 on page 87 to Build Your Skills ending on page 94.
Jan. 23	Do:	Practice Your New Skills on page 95 to Practice Your New Skills on page 105.
Jan. 26	Do:	Example 1 on page 106 to Practice Your New Skills on page 113.
Jan. 27	Do:	Chapter Test on page 114 to 117
Jan. 28	Do:	Review for the test
Jan. 29	**Test #2 (Thursday)**	

Chapter 3:   Length, Area, and Volume

Jan. 30	Do:	Study page 118 to Build Your Skills ending on page 129.
Feb. 2	Do:	Practice Your New Skills on page 129 to Build Your Skills ending on page 132.
Feb. 3	Do:	New Skills on page 132 to Practice Your New Skills ending on page 141.
Feb. 4	Do:	Example 1 on page 142 to Build Your Skills ending on page 154.
Feb. 5	Do:	Practice Your New Skills on page 155 to 157.

Feb. 6	Do:	Example 1 on page 158 to Build Your Skills ending on page 166.
Feb. 9	Do:	Practice Your New Skills on page 166 to 168.
Feb. 10	Do:	Chapter Test on page 169 to 174
Feb. 11	Do:	Review for the test
Feb. 12	**Test #3 (Thursday)**	

Chapter 4:   Mass, Temperature, and Volume

Feb. 13	Do:	Study page 175 to Practice Your New Skills ending on page 182.
Feb. 23	Do:	Example 1 on page 183 to Build Your Skills ending on page 191.
Feb. 24	Do:	Practice Your New Skills on page 192 to 194.
Feb. 25	Do:	Example 1 on page 195 to Build Your Skills ending on page 200.
Feb. 26	Do:	Practice Your New Skills on page 200 to 202.
Feb. 27	Do:	Example 1 on page 203 to Practice Your New Skills ending on page 210.
Mar. 2	Do:	Chapter Test on page 210 to 213
Mar. 3	Do:	Review for the test
Mar. 4	**Test #4 (Wednesday)**	

Midterm on Mar. 6 (Friday)

Chapter 5:   Angles and Parallel Lines

Mar. 9	Do:	Study page 214 to Practice Your Skills ending on page 224.
Mar. 10	Do:	Study page 225 to Practice Your New Skills ending on page 230.
Mar. 11	Do:	Study page 231 to Practice New Skills ending on page 238.
Mar. 12	Do:	Study page 239 to Build Your Skills ending on page 245.
Mar. 13	Do:	Practice your New Skills on page 246 to Chapter Test ending on page 252
Mar. 16	Do:	Review for the test
Mar. 17	**Test #5 (Tuesday)**	

Chapter 6:   Similarity of Figures

Mar. 18	Do:	Study page 253 to Build Your Skills ending on page 262.
Mar. 19	Do:	Practice Your New Skills on page 262 to Build Your Skills ending on page 269.
Mar. 20	Do:	Practice Your New Skills on page 269 to Practice Your Skills ending on page 276.
Mar. 23	Do:	Study page 277 to Build Your Skills ending on page 281.
Mar. 24	Do:	Practice Your New Skills on page 282 to Chapter Test ending on page 287
Mar. 25	Do:	Review for the test
Mar. 26	**Test #6** **(Thursday)**	

Chapter 7:   Trigonometry of Right Triangles

Mar. 27	Do:	Study page 288 to Build Your Skills ending on page 295.
Mar. 30	Do:	Practice Your New Skills on page 295 to Build Your Skills ending on page 303.
Mar. 31	Do:	Example 4 on page 304 to Practice Your New Skills on page 307.
Apr. 1	Do:	Study page 308 to Practice Your New Skills ending on page 317.
Apr. 2	Do:	Study page 318 to Practice Your New Skills ending on page 323.
Apr. 6	Do:	Study page 324 to Build Your Skills ending on page 327.
Apr. 7	Do:	Example 3 on page 328 to Practice Your New Skills ending on page 335.
Apr. 8	Do:	Chapter test on page 336 to 339
Apr. 9	Do:	Review for the test
Apr. 10	**Test #7** **(Friday)**	

Final Exam (Apr. 16-27)

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.