DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – SPRING 2014

INTRODUCTION TO MATH 0123

INSTRUCTOR:	Sukhvir Sandhu	**PHONE:**	(780) 539 - 2234
OFFICE:	Math Lab A210 or C310	**E-MAIL:**	ssandhu@gprc.ab.ca
OFFICE HOURS:	Daily, 8:30 - 9:00 am, 10:20 - 11:00 am, or via appointment		

PREREQUISITE(S)/COREQUISITE:

MA0113, ≥ 60% in Math 10–C or 10–3 in the last 2 years, or equivalent math placement test score

REQUIRED TEXT/RESOURCE MATERIALS:

Math Works 11 Workbook, scientific calculator, graph paper

(Math Works 11 Textbook will be available to students in the Math Lab during lab hours.)

CALENDAR DESCRIPTION:

This is a modularized course which covers slope and rate of change; graphical representation of data and statistical reasoning; surface area, volume, and capacity of 3–D objects; trigonometry of right triangles and scale representations; financial services and personal budgets. Emphasis is placed on applications related to trades and personal use.

CREDIT/CONTACT HOURS:

MA 0123, Mathematics 20 - 3 Equivalent 5 (5-0-0)

Time: 75 Hours

DELIVERY MODE:

MA 0123 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 the Build Your Skills 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.**

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 three chapters, must be written by **Tuesday, May 27.** 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 **Thursday, June 26.**

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	49%
Midterm	16%
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**

TRANSFERABILITY:
This course is listed in the Alberta Transfer Guide. It is accepted at colleges and universities in Alberta as equivalent to Mathematics 20 – 3.

Learning Outcomes:

1. **Slopes and Rate of Change**
    - Demonstrate an understanding of slope
        - as rise over run
        - as rate of change
        - by solving problems
    - Explain, using illustrations, the relationship between slope (tangent ratio) and angle of elevation.
    - Develop an understanding and inter-connection among grade, angle of elevation, and distance.

2. **Graphical Representations**
    - Solve problems that involve creating and interpreting graphs, including:
        - bar graphs
        - histograms
        - line graphs
        - circle graphs
    - Investigate the appropriate use of different types of graphs.
    - Compare the effects of different graphing strategies.

3. **Surface Area, Volume, and Capacity**
    - Solve problems that involve SI and imperial units in surface area of three-dimensional objects.
    - Estimate and calculate the volume and capacity of a three-dimensional object.
    - Describe the relationship between volumes of :
        - cones and cylinders with the same base and height
        - pyramids and prisms with the same base and height
    - Modify the surface area and volume measurements when their dimensions increase or decrease.

4. **Trigonometry of Right Triangles**
    - Use trigonometry to calculate distances and angles.
    - Sketch a representation of a given description of a 2—D or 3—D context and determine if a solution to a problem involves one, two, or three right triangles.
    - Solve complex problems in three dimensions by breaking them down into two or three right-angled triangles.

5. **Scale Representations**
    - Make scale models.
    - Create drawings that represent two and three dimensions.
    - Draw a 2—D representation of a given 3—D object.
    - Calculate the full-size measurements of objects from drawings.
    - Construct a model of a 3—D object, given the top, front, and side views.
    - Identify the point of perspective of a given one-point perspective drawing of a 3—D object.

6. **Financial Services**
    - Demonstrate an understanding of financial institution services used to access and manage finances that best meet your needs.
    - Calculate simple and compound interest, and explain their relationship.
    - Describe the advantages and disadvantages of debit or credit card purchases and make informed decisions about the use of credit.
    - Describe ways that ensure the security of personal and financial information.

7. **Personal Budgets**
    - Identify income and expenses that should be included in a personal budget.
    - Create a personal budget based on given income and expense data.
    - Modify a budget to achieve a set of personal goals.
    - Investigate and analyze a budget.
    - Prioritize expenses to balance a budget.

Fall 2013
MA0123 Tests / Exams

Chapter	Topic	Recommended Time & Test Date	Date written	Your mark
1	Slope and Rate of Change	Thursday May 8		
2	Graphical Representations	Thursday May 15		
3	Surface Area, Volume, and Capacity	Friday May 23		
	Review for the midterm	1 Day		
	Midterm – must be written on or before	**Tuesday, May 27**		
4	Trigonometry of Right Triangles	Monday June 2		
5	Scale Representations	Monday June 9		
6	Financial Services	Monday June 16		
7	Personal Budgets	Tuesday June 24		
	Review	1 Day		
	Final Exam – 3 Hours	**Friday June 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 > Admission > Tuition > Fees) for the printing policy which limits the free use of paper; extra charges will be applied if the limit is exceeded.