DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – FALL 2012

INTRODUCTION TO MATH 0110

INSTRUCTOR: Alan Iwaskow **PHONE:** (780) 539-2713
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OFFICE HOURS: 5:45-6:00pm Tuesdays and Thursdays in the Math Lab

PREREQUISITE(S)/COREQUISITE:
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:
MA0110, Mathematics 10-C equivalent 5 (5-0-0)
Time: 75 Hours

DELIVERY MODE:

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 five modules, must be written by **Tuesday, October 23**. 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 11.**

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.

GRADING CRITERIA:

Your final mark is determined by:

8 module tests	48%
Midterm	17%
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 10-C.

LEARNING OUTCOMES

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.
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.

Fall 2012
Topics/Tests/Exams

Module	TOPIC	Recommended Time & Test Date	Date written	Your mark
1	Measurement	Thursday, September 13		
2	Trigonometry	Thursday, September 27		
3	Numbers and Roots	Tuesday, October 9		
4	Exponents	Thursday, October 18		
	Review for midterm			
	MIDTERM - must be written on or before	**Tuesday, October 23**		
5	Polynomials: Multiplication & Factoring	Thursday, November 1		
6	Relations and Functions	Thursday, November 15		
7	Linear Functions	Tuesday, November 27		
8	Systems of Equations	Thursday, December 6		
	Review for final	2 days		
	FINAL EXAM - 3 HOURS	**T.B.A**. December 13-22		

Fall 2012 Night Class Schedule FINAL EXAMS TO BE ANNOUNCED (December 13-22)

	MA0081	**MA0091**	**MA0110**	**MA0120**
Sep 6 Th	M1 Ex 1-6	M1 Ex 1-6	M1 Ex 1-3	M1 Ex 1-3
Sep 11 Tu	M1 Ex 7-10	M1 Ex 7-12	M1 Ex 4-6	M1 Ex 4-6
Sep 13 Th	M1 Rev, Test 1 M2 Ex 1	M1 Ex 13-14, Rev, T1	Rev, Test 1	M1 Rev, Test 1 M2 Ex 1-3
Sep 18 Tu	M2 Ex 2-4	M2 Ex 1-4	M2 Ex 1-2	M2 Ex 4-5
Sep 20 Th	M2 Ex 5-6, Rev	M2 Ex 5-8	M2 Ex 3-4	M2 Rev, Test 2
Sep 25 Tu	M2 Test 2 M3 Ex 1-4	M2 Ex 9, Rev, T2	M2 Ex 5-6	M3 Ex 1-5
Sep 27 Th	M3 Ex 5-9	M3 Ex 1-4	M2 Ex 7, Rev, Test 2	M3 Ex 6-9
Oct 2 Tu	M3 Ex 10, Rev	M3 Ex 5-8	M3 Ex 1-3	M3 Ex 10, Rev Test 3
Oct 4 Th	Test 3 M4 Ex 1-2	M3 Ex 9, Rev, T3 M4 Ex 1	M3 Ex 4-5	M4 Ex 1-4
Oct 9 Tu	M4 Ex 3-5	M4 Ex 2-5	M3 Rev, Test 3	M4 Ex 5-6
Oct 11 Th	M4 Ex 6- 9	M4 Rev, T4 M5 Ex 1-2	M4 Ex 1-3	M4 Rev, Test 4 M5 Ex 1-2
Oct 16 Tu	M4 Rev, Test 4	M5 Ex 3-7	M4 Ex 4, Rev	M5 Ex 3-6
Oct 18 Th	MT Review **MIDTERM**	M5 Ex 8, Rev, T5 Midterm Review	Test 4, Midterm Review	M5 Rev, Test 5
Oct 23 Tu	M5 Ex 1-2	Review, **MIDTERM** M6 Ex 1	MT Rev, **MIDTERM**	Midterm Review **MIDTERM**
Oct 25 Th	M5 Ex 3-5	M6 Ex 2-5	M5 Ex 1-3	M6 Ex 1-4
Oct 30 Tu	M5 Ex6-8	M6 Ex 6-10	M5 Ex 4-6	M6 Ex 3-5
Nov 1 Th	M5 Rev, T5 M6 Ex1	M6 Ex 11, Rev, T6 M7 Ex 1-2	M5 Ex 7-8, Rev, Test 5	Rev, Test 6 M7 Ex 1
Nov 6 Tu	M6 2-4	M7 Ex 3-7	M6 Ex 1-2	M7 Ex 2-4
Nov 8 Th	M6 Rev, T6 M7 Ex1	M7 Ex 8, Rev, T7	M6 Ex 3-4	M7 Ex 5-6, Rev
Nov 13 Tu	Fall Break	Fall Break	Fall Break	Fall Break
Nov 15 Th	M7 Ex 2-5	M8 Ex 1-3	M6 Rev, Test 6 M7 Ex 1-2	Test 7 M8 Ex 1-2
Nov 20 Tu	M7 Rev, T7 M8 Ex 1-2	M8 Ex 4-5, Rev	M7 Ex 3-4	M8 Ex 3-5
Nov 22 Th	M8 Ex 3-5	T8 M9 Ex 1	M7 Ex 5-6	M8 Ex 6-7
Nov 27 Tu	M8 Ex 6-8, Rev	M9 Ex 2-5	M 7 Rev, Test 7	M8 Rev, Test 8 M9 Ex 1
Nov 29 Th	Test 8 M9 Ex 1-3	M9 Rev, T9 M10 Ex 1-2	M8 Ex 1-2	M9 Ex 2-5
Dec 4 Tu	M9 Ex 4-6	M10 Ex 3-7	M8 Ex 3-5	M9 Ex 6-9
Dec 6 Th	M9 Rev, Test 9	M10 Ex 8-9, Rev, T10	Test 8	M9 Ex 10, Rev, Test 9
Dec 11 Tu	Final Review	Final Review	Final Review	Final Review
Dec 13-22	Final Exam TBA	Final Exam TBA	Final Exam TBA	Final Exam TBA

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.