DEPARTMENT OF ACADEMIC UPGRADING
COURSE OUTLINE – FALL 2021

MA0120 (A2) - Mathematics Grade 20-1 Equivalent - 5 (6-0-0) HS
90 hours for 7.5 weeks

Grande Prairie Regional College respectfully acknowledges that we are located on Treaty 8 territory, the traditional homeland and gathering place for many diverse Indigenous peoples. We are honoured to be on the ancestral lands of the Cree, Dene/Beaver and Métis, whose histories, languages, and cultures continue to influence our vibrant community. We are grateful to have the opportunity to work, learn, and live on this land.

INSTRUCTOR: Reddy Ganta **PHONE:** (780) 539-2810 or 2850
OFFICE: B301 **E-MAIL:** Rganta@gprc.ab.ca
OFFICE HOURS: TBA

CALENDAR DESCRIPTION:

This course explores sequences and series, radical expressions and equations, quadratic equations and functions, linear and quadratic inequalities, liner-quadratic and quadratic-quadratic systems of equations, rational expressions and equations, absolute value functions, reciprocal functions, and trigonometry including the sine and cosine laws.

PREREQUISITE(S)/COREQUISITE:

MA0110, Mathematics 10-C, or equivalent math placement test score

REQUIRED TEXT/RESOURCE MATERIALS:

Pre-Calculus 11 my WORKTEXT (Pearson) and Non-Graphing scientific calculator.

DELIVERY MODE: MA0120 is a lecture class. Do not hesitate to ask questions during lecture.

COURSE OBJECTIVES:

Upon successful completion of this course, the student will:

1. Develop algebraic reasoning and number sense
2. Develop trigonometric reasoning
3. Develop algebraic and graphical reasoning through the study of relations

LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to use:

1. **Sequence and Series**
   - Analyze arithmetic sequences and series to solve problems
   - Analyze geometric sequences and series to solve problems

2. **Radical Expressions and Equations**
   - Perform operations on radicals and radical expressions with numerical and variable radicands
   - Solve problems that involve radical equations (limited to square roots).

3. **Solving Quadratic Equations**
   - Factor polynomials expressions in the form of:

$$ax^2 + bx + c$$
$$a^2x^2 - b^2y^2$$
$$a(f(x))^2 + b(f(x)) + c$$
$$a^2(f(x))^2 - b^2(g(y))^2$$

   - Solve problems that involve quadratic equations using factoring and the quadratic formula

4. **Analyzing Quadratic Functions**
   - Analyze quadratic functions and determine the vertex, domain and range, direction of opening, axis of symmetry, and x- and y- intercepts
   - Convert between general, standard, and factored forms
   - Graph quadratic functions from general, standard, and factored forms
   - Solve problems modelled by quadratic functions

5. **Graphing Inequalities and Systems of Equations**
   - Solve problems that involve quadratic inequalities in one variable
   - Solve problems that involve linear and quadratic inequalities in two variables
   - Solve algebraically and graphically problems that involve systems of linear-quadratic and quadratic-quadratic equations in two variables

6. **Trigonometry**
   - Demonstrate an understanding of angles in standard position [$0°, 360°$]
   - Solve problems using the three primary trigonometric ratios for angles from $0° \; to \; 360°$ in standard position

- Solve problems using the cosine law and sine law including the ambiguous case

7. **Rational Expressions and Equations**
   - Determine equivalent forms of rational expressions
   - Perform operations on rational expressions
   - Solve problems that involve rational equations

8. **Absolute Value and Reciprocal Functions**
   - Demonstrate an understanding of the absolute value of real numbers
   - Graph and analyze value functions (limited to linear and quadratic functions) to solve problems

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.ca.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

GRADING CRITERIA: Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

EVALUATIONS:

Your course mark is determined by:

4 tests	40 %
Midterm	25 %
Final Exam	35 %

All tests and exams MUST be written at the scheduled times. A missed test (exam) will result in a score of ZERO on that test (exam). The final exam is scheduled by the registrars' office during GPRC Exam weeks.

MA 0120 Test Schedule for Fall 2021

Test #1	% Towards course mark	Topics	Test/Exam dates	Mark Obtained
1	10%	1. Sequence Series 2. Absolute Value & Radicals	September 22 Wednesday	
2	10%	3. Solving Quadratic Eq. 4. Analysing Quad. Eq.	October 19 Tuesday	
Midterm	**25%**	**All the Above**	**October 21 Thursday**	
3	10%	5. Inequalities and system of Equations 6. Trigonometry	November 16 Tuesday	
4	10%	7. Rational Ex. and Equations 8. Absolute Value and Reciprocal Functions	December 7 Tuesday	
Final Exam	**35%**		**TBA (Dec 11 - 20)**	

STUDENT RESPONSIBILITIES:

In addition to the ***Student Rights and Responsibilities*** as set out in the college websitewww.gprc.ab.ca/d/STUDENTRIGHTSRESPONSIBILITIES , 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.

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.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Calendar at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at https://www.gprc.ab.ca/about/administration/policies