



Course Outline

ACADEMIC FOUNDATIONS

**AFM 009F
ADVANCED MATH
Fall, 2012**

**6 CREDITS
8 HOURS PER WEEK**

Maureen Clarke, Instructor

Date

Reviewed and approved by:

Margo Vermillion, Chair

Date

Guy Harmer, Dean

Date

Instructor: Maureen Clarke

Office Hours: Monday 2:00 – 2:50
Tuesday 2:00 – 2:50

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Course Hours:	Monday	9:30 – 10:20	10:30 – 11:20
	Tuesday	10:30 – 11:20	
	Wednesday	9:30 – 10:20	10:30 – 11:20
	Thursday	9:30 – 10:20	10:30 – 11:20
	Friday	9:30 – 10:20	

Location: Room 114

Hours of Instruction: 8 50—minute classes per week

Length of course: 15 weeks

Prerequisite: AFM 007

Text: NorQuest High School Math Preparation
Castle Rock Research Group, Edmonton
ISBN: 978-1-77044-222-1

Important Dates for Academic Schedule:

Sept. 3	College closed – Labor Day
Sept. 4	Orientation Day
Sept. 5	First day of class
Sept. 11	Last day to add classes
Sept. 11	Fall semester fees due
Sept. 12	Late fee if all fees are not paid in full
Sept. 18	Last day to drop courses
Oct. 8	College closed – Thanksgiving
Oct. 12	Last day to withdraw from course(s) with 50% refund of tuition fees
Oct. 26	Last day to withdraw without academic penalty
Nov. 12	College closed – Remembrance Day
Dec. 13	Last day of class
Dec. 14-18	Final Exams

Course Description:

AFM will review all four operations (addition, subtraction, multiplication and division) of rational numbers, including rational and irrational square roots. Other topics will include algebra, exponent laws, algebraic expressions, polynomial operations, solving multi-step linear equations, graphing linear equations in two variables and solving linear inequalities in one variable. A review of two and three dimensional measurement will be applied to volume and surface area, the Pythagorean Theorem, and circle properties. Number sense will be applied to the application of probability in our society.

Course Outcomes:

At the completion of the course, students will be able to:

- Confidently perform operations (add, subtract,, multiply and divide) rational numbers
- Find rational and irrational square roots
- Comprehend and use terminology associated with course topics
- Know and apply exponent laws
- Simplify algebraic expressions
- Solve multi-step linear equations
- Solve linear inequalities in one variable
- Understand volume and surface area
- Apply the Pythagorean Theorem to solve right triangles
- Comprehend properties of circles
- Use applications involving probability
- Utilize problem solving models to generate a set of ordered steps to solve problems
- Organize written work to facilitate problem solving
- Relate learned mathematical rules and skills to new concepts

Course Content:

UNIT 1	PRE-ALGEBRA REVIEW	Sept. 5 - 21
1.	Introduction to integers	p.2
2.	Operations with integers	p. 7
3.	Oder of operations for integers	p. 20
4.	Rational numbers	p. 27
5.	Operations with rationals – fractions	p. 42
6.	Operations with rationals – decimals	p. 59
7.	Order of operations – rationals	p. 71
8.	Perimeter	p. 79
9.	Area	p. 88

UNIT 2	POLYNOMIALS	Sept. 24 – Oct. 12
1.	Square roots	p. 108
2.	Terminology	p. 116
3.	Evaluate polynomials using substitution	p. 124
4.	Exponents Laws I	p.132
5.	Exponents – Laws II	p. 141
6.	Adding and subtracting polynomials	p. 155
7.	Dividing a polynomial by a monomial	p. 161
8.	Multiplying polynomials by monomials	p. 166
UNIT 3	EQUATIONS AND PROBLEM SOLVING	Oct. 15 – Nov 9
1.	Working with patterns	p. 186
2.	One-step equations	p. 196
3.	Two-step equations	p. 204
4.	Multiple step equations – I	p. 213
5.	Multiple step equations – II	p. 220
6.	Writing expressions	p. 252
7.	Writing and solving equations – I	p. 262
8.	Writing and solving equations – II	p. 274
9.	Writing and solving equations – III	p. 289
UNIT 4	GEOMETRY	Nov. 13 - 23
1.	Working with angles	p. 324
2.	Parallel lines, transversals, and Interior angles	p. 337
3.	Congruent triangles	p. 369
4.	Pythagorean Theorem	p. 377
5.	Circles properties – I	p. 387
6.	Circle properties – II	p. 400
7.	Circle properties – III	p. 410
UNIT 5	SHAPE AND SPACE	Nov. 26 – Dec. 7
1.	2-D composite figures	p. 430
2.	3-D objects	p. 440
3.	Surface area of right prisms	p. 448
4.	Surface area of cylinders	p. 455
5.	Volume of right prisms	p. 463
6.	Volume of cylinders	p. 468
7.	3-D composite figures	p. 472

UNIT 6 GRAPHING

Dec. 10 - 13

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| 1. Working with patterns | p. 498 |
| 2. Algebraic equations and tables of values | p. 505 |
| 3. Graphing relations – I | p. 514 |
| 4. Graphing relations – II | p. 527 |
| 5. Graphing scatter plots | p. 538 |

Evaluation:

Attendance	5%
Assignments	35%
Tests & quizzes	15%
Midterm	20%
Final Exam	25%
Total	100%

Grade Point:

Descriptor	Alpha Grade	4.0 Scale	Percentage
Excellent	A ⁺	4.0	91 – 100
	A	3.8	85 – 90
	A ⁻	3.7	80 – 84
Good	B ⁺	2.7	76 – 79
	B	3.0	73 – 75
	B ⁻	2.7	70 – 72
Satisfactory	C ⁺	2.3	67 – 69
	C	2.0	64 – 66
PROGRESSION PASS	C ⁻	1.7	60 – 63
Poor	D ⁺	1.3	57 – 59
MINIMUMUM PASS	D	1.0	50 – 56
Failure	F	0,0	0 – 49

Overall Expectations:

Please turn off cell phones, MP3 players and any other electronic devices.

Assignments: Assignments must be dated and submitted to the instructor no later than 4:00 pm on the day on which the assignment is due. Late assignments will be accepted but a penalty of 2% per date to a maximum of 10% will be deducted from the assignment mark. Exemptions for assignments may be granted in exceptional circumstances beyond the control of the student. A 5% bonus mark will be given to all assignments that are turned in on time.

Punctuality: Punctuality is important. Students are expected to be ready to begin work when the class is scheduled to begin. Therefore, students are encouraged to arrive at class a minute or two early so that they may organize their working materials by starting time. Late arrival is detrimental to the student and inconsiderate of the instructor and other students. Arrival in good time is associated with success and is considerate of the instructor and other students.

Attendance: Students are expected to attend all classes. Should a student miss a class for any reason, it is his/her responsibility to cover the work missed and be ready for the next class.

If you want to be assured of success in this course, the following three things will most often grant that to you.

1. Attend every day and get involved in the class. When you can't attend, cover the work done anyway.
2. Ask a question when you do not understand the work and keep asking until you get an explanation you can understand. Feel free to ask for help from the Skill Center, your peers and the instructor. Remember that the Skill Center is for "support", not to "teach" you course content due to lack of attendance.
3. Do all of the daily work given or give it your very best effort and get help with the parts you are unable to complete.

STUDENTS RIGHTS AND RESPONSIBILITIES

Students should be aware of their rights and responsibilities as laid out in the Keyano College Credit Calendar 2012 – 2013. In order to "refrain from unduly disturbing, disrupting or otherwise interfering with studies..." (KCCC 2012 – 2013, p. 38) students should turn cell phones and pagers off when they come to class, and refrain from bringing children or other visitors to class.

Learner Assistance Program (LAP)



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If you have been diagnosed with a Learning Disability in the past, or you feel that you would benefit from some assistance from a Disabilities Counsellor, please call our office 780-792-5608 to book an appointment. Services and accommodations are intended to assist you in your course, while maintaining the academic standards of Keyano College. We can be of assistance to you in disclosing your disability to your instructor, receiving accommodations, and your overall a success at Keyano College.

HAVE A GREAT SEMESTER!