MATHEMATICS 30-1

Mr. M Cherney

COURSE OUTLINE 2023-2024

Ch 0102 Transformations	10-7 Classes-Lessons	10 School Days	Jan 31 – Feb 14
Ch 03 Polynomial Functions	8(9 OE)-4 Classes-Lessons	8(9) School Days	Feb 15 – Mar 5
Ch 0405 Basic & Trans Trig Equations	9-8 Classes-Lessons	9 School Days	Mar 6 – Mar 19
Ch 06 Identity Trig Equations	8-4 Classes-Lessons	8 School Days	Mar 20 – Apr 12
Ch 0708 Logarithms	9-7 Classes-Lessons	9 School Days	Apr 15 – Apr 25
Ch 0910 Rational/Operations	8-6 Classes-Lessons	8 School Days	Apr 26 – May 7
Ch 11 Permutations/Combinations	10(12 OE)-8 Classes-Lessons	10(12) School Days	May 8 – May 27
Course Review	11-14 Classes-Lessons	11 School Days	May 28 – Jun 12
	73(58) Classes-Lessons	73(76) School Days	

Final

Diploma Exam June 17, 2024

COURSE MARKING 2023-2024

Heading	Date	Weight	Points Earned (%)	Percent (%)
Course Work		70		
Tests		90		
Ch 0102 Transformations		15		
Ch 03 Polynomial Functions		15		
Ch 04 05 Basic & Trans Trig Equations		15		
Ch 06 Identity Trig Equations		10		
Ch 0708 Logarithms		20		
Ch 0910 Rational/Operations		10		
Ch 11 Permutations/Combinations		15		
Homework		10		
Final Exam		30		
Final Grade				

Daily Homework for each assignment is due the day after it is assigned. It will be marked for completeness, 1 mark for each completed question out of the total assigned questions. Each question number of your work is to be highlighted once (**not** abc parts) with a marker. Each assignment is to have your Name, Date, and Assignment Label and to be clearly marked as correct or incorrect (and corrected). Notes will be collected and marked at time of the tests.

Review Quizzes are given twice per chapter or when necessary as review. Each quiz will have about 5-10 questions.

Review Summary Sheets are given for each chapter and can be used as 'I Can' statements to self assess learning or as review sheets for content covered in the chapter.

Tests may be rewritten on any chapter up to two times at any time during the semester before the beginning of the Course Review at the end of the semester. Your best score up to 79% will be taken on rewrites. Before any test is rewritten all previous tests from other chapters must be complete and at least some homework from the rewritten chapter must be handed in.

Extra Help or a quiet place to work is available during any lunch hour in my room through out the year on a come and go as you need help basis.

Web Sites that may be of help

Exam bank: http://alberta.exambank.com/
Username: pal.hca
Password: feature
Pure math 30: http://www.bmlc.ca/PureMath30.html
Kahn Academy: http://www.khanacademy.org/
Google : doodling in math class (topic)
Quest A+: https://questaplus.alberta.ca/
Math 30-1: http://www.math30.ca/index.php

Mathematics 30–1 Formula Sheet

For $ax^2 + bx + c = 0$,

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Relations and Functions

Graphing Calculator Window Format

x: $[x_{min},\ x_{max},\ x_{scl}]$

y: $[y_{min},\ y_{max},\ y_{scl}]$

Laws of Logarithms

$$\log_b(M \times N) = \log_b M + \log_b N$$

$$\log_b\left(\frac{M}{N}\right) = \log_b M - \log_b N$$

$$\log_b(M^n) = n \log_b M$$

$$\log_b c = \frac{\log_a c}{\log_a b}$$

Growth/Decay Formula

$$y = ab^{\frac{t}{P}}$$

General Form of a Transformed Function

$$y = af\left[b(x - h)\right] + k$$

Permutations, Combinations, and the Binomial Theorem

$n! = n(n-1)(n-2)\ldots 3 \times 2 \times 1$,
where $n \in N$ and $0! = 1$

$${}_nP_r = \frac{n!}{(n-r)!}$$

$${}_nC_r = \frac{n!}{(n-r)!r!} \qquad {}_nC_r = \binom{n}{r}$$

In the expansion of $(x + y)^n$, written in descending powers of x, the general term is $t_{k+1} = {}_nC_k x^{n-k} y^k$.

Trigonometry

$$\theta = \frac{a}{r}$$

$$\tan\theta = \frac{\sin\theta}{\cos\theta} \qquad \cot\theta = \frac{\cos\theta}{\sin\theta}$$

$$\csc\theta = \frac{1}{\sin\theta} \qquad \sec\theta = \frac{1}{\cos\theta}$$

$$\cot\theta = \frac{1}{\tan\theta}$$

$$\sin^2\theta + \cos^2\theta = 1$$

$$1 + \tan^2\theta = \sec^2\theta$$

$$1 + \cot^2\theta = \csc^2\theta$$

$$\sin(\alpha + \beta) = \sin\alpha\cos\beta + \cos\alpha\sin\beta$$

$$\sin(\alpha - \beta) = \sin\alpha\cos\beta - \cos\alpha\sin\beta$$

$$\cos(\alpha + \beta) = \cos\alpha\cos\beta - \sin\alpha\sin\beta$$

$$\cos(\alpha - \beta) = \cos\alpha\cos\beta + \sin\alpha\sin\beta$$

$$\tan(\alpha + \beta) = \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha\tan\beta}$$

$$\tan(\alpha - \beta) = \frac{\tan\alpha - \tan\beta}{1 + \tan\alpha\tan\beta}$$

$$\sin(2\alpha) = 2\sin\alpha\cos\alpha$$

$$\cos(2\alpha) = \cos^2\alpha - \sin^2\alpha$$

$$\cos(2\alpha) = 2\cos^2\alpha - 1$$

$$\cos(2\alpha) = 1 - 2\sin^2\alpha$$

$$\tan(2\alpha) = \frac{2\tan\alpha}{1 - \tan^2\alpha}$$

$$y = a\sin\left[b(x - c)\right] + d$$

$$y = a\cos\left[b(x - c)\right] + d$$