

McMaster University, Department of Mathematics & Statistics

MATH 1K03

Course Outline Fall: 2017/2018

MATH 1K03 is a course that covers advanced functions and serves as an introduction to calculus. The course material includes: properties of polynomial, rational, exponential and logarithmic functions, and derivatives of functions along with applications.

Instructor Dr. Rosario Monter
Office HH/204, extension 23423
E-mail monter1@math.mcmaster.ca
Office Hours TBA

Lecture Mo We Th 1:30 pm - 2:20 pm ITB AB102

Tutorials	Tu	1:30 pm - 2:20 pm	HH_305	Roger
	We	10:30 am - 11:20 am	HH_305	Roger
	We	11:30 am - 12:20 pm	HH_305	Aleks
	Th	8:30 am - 9:20 am	HH_305	Aleks

Textbooks

Textbooks are available to buy at the Campus Store located in Gilmour Hall or can be purchased online.

- "Calculus... Fear No More, A Review and Reference for College and University Courses, by M. Lovric. ISBN-10: 0176500472 ISBN-13: 9780176500474 (L)
- "Applied Calculus for Business, Economics, and the Social and Life Sciences, Canadian Edition", by L. D. Hoffman, G. L. Bradley, and D. Miners. ISBN-10: 007068717X ISBN-13: 978-0070687172 (HBM)

Course Contents: Selected material from Chapters 1, 2, 4, 6, 8 of the textbook (L) and selected material from Chapters 1 - 4 of the textbook (HBM).

Course Web: Avenue to Learn

Tests, Assignments and Exam: There are nine assignments, three tests, and a final exam. The lowest score of the assignments is dropped.

Marking Scheme:	Tests	(3 x 20%)	60%
	Final exam		30%
	Assignments	(8 x 1.25%)	10%

Test dates:
Test #1: Wednesday Evening, Oct. 4, 2017 (tentative)
Test #2: Monday Evening, Nov. 6, 2017 (tentative)
Test #3: Wednesday Evening, Nov. 29, 2017 (tentative)
Exact time and location to be announced

Assignment dates:
(Tentative)
To be submitted before midnight. Late homework will not be accepted.
HW #1: Thursday Sept. 21 HW #2: Thursday Sept. 28
HW #3: Thursday Oct. 5 HW #4: Thursday Oct. 19
HW #5: Thursday Oct. 26 HW #6: Thursday Nov. 9
HW #7: Thursday Nov. 16 HW #8: Thursday Nov. 23
HW #9: Thursday Nov. 30 Lowest score is dropped

Calculators: The only calculator allowed for the tests and final exam will be McMaster standard calculator Casio FX-991.

Exemptions from course work - Master Student Absence Form (MSAF): This is an on-line, self-reporting tool for students to report absences that last up to 3 days and to request accommodation for any missed academic work that is worth less than 25% of the final grade. Please note that this tool cannot be used during any final examination period. It is the prerogative of the instructor to determine the appropriate relief for missed term work. You may submit a maximum of one request per term. The form should be filled out within 3 days of the due date. It is your responsibility to follow up with your instructor, R. Monter at monter1@math.mcmaster.ca, immediately (within three working days) about the absence. *Where approved, the missing grade will be replaced with the grade on the final exam.* For more information about MSAF please refer to the following link:

http://academiccalendars.romcmaster.ca/content.php?catoid=13&navoid=2208#Requests_for_Relief_for_Missed_Academic_Term_Work

Academic ethics: Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf> specifically Appendix 3. The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g., the submission of work that is not one's own or which has been used for other credit.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and exams.

Course Modifications: The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

MATH 1K03 Fall 2017 COURSE TIMELINE (It may be subject to change) - R. Monter

Week	Lecture Day	Lecture #	Book Section	Topic	Evaluation
1	Sep 6	1	L1	Introduction, Numbers and Operations	
	Sep 7	2	L2	Basic Algebra	
2	Sep 11	3	L2	Basic Algebra (cont'd)	
	Sep 13	4	L4	Equations and Inequalities	
	Sep 14	5	L6	Functions	
3	Sep 18	6	L6 H1.2	Graph of Functions	
	Sep 20	7	H1.3	Linear Functions	
	Sep 21	8	H1.4	Functional Models	HW 1
4	Sep 25	9	H1.5	Limits	
	Sep 27	10	H1.5	Limits (cont'd)	
	Sep 28	11	H1.6	One-Sided Limits and Continuity	HW 2
5	Oct 2			REVIEW (Lectures 1-10)	
	Oct 4	12	H2.1	The Derivative	TEST 1
	Oct 5	13	H2.2 H2.3	Techniques of Differentiation Product and Quotient Rules; Higher-Order Derivatives	HW 3
	Oct 9			Break - No class	
	Oct 11			Break - No class	
	Oct 12			Break - No class	
6	Oct 16	14	H2.3 H2.4	Product and Quotient Rules; Higher-Order Derivatives (cont'd); The Chain Rule	
	Oct 18	15	H2.4 H2.5	The Chain Rule (cont'd); Marginal Analysis and Approximations Using Increments	
	Oct 19	16	H2.5	Marginal Analysis and Approximations Using Increments (cont'd)	HW 4
7	Oct 23	17	H2.6	Implicit Differentiation and Related Rates	
	Oct 25	18	H2.6	Implicit Differentiation and Related Rates (cont'd)	
	Oct 26	19	H3.1	Increasing and Decreasing Functions; Relative Extrema	HW 5
8	Oct 30	20	H3.1 H3.2	Increasing and Decreasing Functions; Relative Extrema (cont'd); Concavity and Points of Inflection	
	Nov 1	21	H3.3	Curve Sketching	
	Nov 2			REVIEW (Lectures 11-20)	
9	Nov 6	22	H3.3	Curve Sketching (cont'd)	TEST 2
	Nov 8	23	H3.4	Optimization	
	Nov 9	24	H3.4	Optimization (cont'd)	HW 6
10	Nov 13	25	H3.5	Additional Applied Optimization	
	Nov 15	26	L8 H4.1	Exponential Functions; Continuous Compounding	
	Nov 16	27	H4.1	Exponential Functions; Continuous Compounding (cont'd)	HW 7
11	Nov 20	28	L8 H4.2	Logarithmic Functions	
	Nov 22	29	H4.2	Logarithmic Functions (cont'd)	
	Nov 23	30	H4.3	Differentiation of Exponential and Logarithmic Functions	HW 8
12	Nov 27			REVIEW (Lectures 21-30)	
	Nov 29	31	H4.4	Applications; Exponential Models	TEST 3
	Nov 30	32	H4.4	Applications; Exponential Models (cont'd)	HW 9
	Dec 4			REVIEW FINAL (all)	
	Dec 6			REVIEW FINAL (all) - COURSES END	

Note:

L light book: "Calculus ... Fear no more"

H heavy book: "Applied Calculus.."

HW Homework = Assignment