

1ZA3/1A03 Course Outline

- **Course Home Page**

- The course home page is NOT on Avenue to Learn. It is right here!

- **Course Description**

- **Course Title:** Math 1A03/1ZA3 - Calculus for the Physical Sciences I/Engineering Mathematics I
- **Class Times and Locations:** Check [Mosaic](#)

- **Instructor Information**

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Math 1A03 Section 1 (C01) Instructor Information

- **Name:** [Matt Valeriot](#)
- **Email:** valeriot@mcmaster.ca
- **Office Location:** HH/323
- **Office Hours:** TBA

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Math 1A03 Section 2 (C02) Instructor Information

- **Name:** [Margaret Thomas](#)
- **Email:** thomam17@mcmaster.ca
- **Office Location:** HH/409
- **Office Hours:** Monday 11:30am-12:20pm and Friday 9:30am-10:20am

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Math 1ZA3 Section 1 (C01) Instructor Information

- **Name:** [Margaret Thomas](#)
- **Email:** thomam17@mcmaster.ca
- **Office Location:** HH/409

- **Office Hours:** Monday 11:30am-12:20pm and Friday 9:30am-10:20am

- Math 1ZA3 Section 2 (C02) Instructor Information

- **Name:** [Chris McLean](#)
- **Email:** mcleac3@math.mcmaster.ca
- **Office Location:** BSB Basement, B124
- **Office Hours:** Tuesday, Thursday, and Friday 12:30pm to 1:30pm

- Math 1ZA3 Section 3 (C03) Instructor Information

- **Name:** [Aaron Childs](#)
- **Email:** childs@mcmaster.ca
- **Office Location:** HH/213
- **Office Hours:** Click [here](#)

- **Textbook**

- **Required:** *Calculus, Early Transcendentals, 8th Edition*, James Stewart, Brooks/Cole. (**Note:** Older editions can be used, as long as you have access to the exercises in the 8th edition.)
- **Optional:**
 - Student Solutions Manual for Single Variable Calculus, Early Transcendentals
 - Student Solutions Manual for Multivariable Calculus

A copy of the textbook and solutions manual are available on reserve in Thode Library.

- **Material Covered**

- All sections covered in the [suggested problems](#).
- **Major Topics:** Continuity and differentiability, with emphasis on theory (intermediate value theorem, mean value theorem), practice (how to differentiate) and applications (curve sketching, optimization), theory and techniques of integration, with emphasis on practice (how to integrate) and applications

- **Assignment Information**

- There will be 10 online assignments. See the [Important Dates](#) for the due dates.

- **Test Information**

- Only the McMaster standard calculator Casio fx-991 MS or MS Plus is allowed on the tests and exam. No other versions of the Casio fx-991 are allowed.
- Some sample tests and problem samplers are available under 'Content Groups' to the left.
- **Tentative Dates** (subject to change):
Test #1: Monday October 15th
Test #2: Tuesday November 13th
- Check the [Announcements](#) for room and time information, and for instructions on what to do if you have a conflict with the test time.

- **Course Evaluation**

- 10 Assignments - 2% each
2 Tests - 20% each
Final Exam - 40%
- At the end of the course the grades may be adjusted, but this can only increase your grade and will be done uniformly. We will use the grade equivalence chart published in the Undergraduate Calendar to convert between percentages and letter grades.
- 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.

- **Missed Work Policy**

- If you are absent from the university for a minor medical reason, lasting fewer than 3 days, you may report your absence, once per term, without documentation, using the [McMaster Student Absence Form](#). Absences for a longer duration or for other reasons must be reported to your Faculty/Program office, with documentation, and relief from term work may not necessarily be granted. When using the MSAF, report your absence to childsa@mcmaster.ca. Please note that the MSAF may not be used for term work worth 25% or more, nor can it be used for the final examination. For more information look [here](#).
- If your MSAF form was received then the word "note" will appear in place of your mark on the marks page. This will show up within one week after you filled out the MSAF form. If you don't see the word "note" in place of your mark for the missed work one week after

filling out the MSAF form, then send an email to [Dr. Childs](#). If you do see the word "note" in place of your mark, then no follow-up is required.

- The percentage for a missed test will be added to your final exam.
- The percentage for a missed assignment will be distributed among your remaining assignments.

- **Academic Dishonesty**

- 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, specifically Appendix 3, located at <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>
- The following illustrates only three forms of academic dishonesty:
 1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
 2. Improper collaboration in group work.
 3. Copying or using unauthorized aids in tests and examinations.

- **Accommodation of Students With Disabilities**

- Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) to make arrangements with a Program Coordinator. [Student Accessibility Services](#) can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's [Academic Accommodation of Students with Disabilities policy](#).

- **RISO Policy**

- Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO policy](#). Students requiring a RISO accommodation should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Lecture Schedule

- **Week 1: September 4-7**

- **Lecture 1** - Introduction, Appendix D (Review of Trigonometry)
- **Lecture 2** - Appendix D (Continued), 1.5 (1.6 in 7th Ed., Inverse Functions and Logarithms)
- **Lecture 3** - 1.5 (1.6 in 7th Ed., Continued)

- **Week 2: September 10-14**

- **Lecture 4** - 2.5 (Continuity and Review of Limits)
- **Lecture 5** - 2.5 (Intermediate Value Theorem)
- **Lecture 6** - 2.7 (Derivatives and Rates of Change)

- **Week 3: September 17-21**

- **Lecture 7** - 2.8 (The Derivative as a Function)
- **Lecture 8** - 3.1 (Derivatives of Polynomials and Exponential Functions), 3.2 (The Product and Quotient Rule), 3.3 (Derivatives of Trigonometric Functions)
- **Lecture 9** - 4.8 (Newton's Method)

- **Week 4: September 24-28**

- **Lecture 10** - 3.4 (The Chain Rule), 3.5 (Implicit Differentiation)
- **Lecture 11** - 3.5 (Continued, **Note:** Do Exercise 77(a) in 3.5, or state the result in class), 3.6 (Derivatives of Logarithmic Functions)
- **Lecture 12** - 3.11 (Hyperbolic Functions)

- **Week 5: October 1-5**

- **Lecture 13** - 4.1 (Maximum and Minimum Values)
- **Lecture 14** - 4.2 (Mean Value Theorem)
- **Lecture 15** - 4.3 (How Derivatives Affect the Shape of a Graph)

- **Week 6: October 8-12 (Midterm Recess)**
- **Week 7: October 15-19**
 - **Lecture 16** - 4.4 (Indeterminate Forms and L'Hospital's Rule)
 - **Lecture 17** - 4.5 (Summary of Curve Sketching)
 - **Lecture 18** - 4.5 (Continued)
- **Week 8: October 22-26**
 - **Lecture 19** - 4.7 (Optimization Problems)
 - **Lecture 20** - 4.9/5.4 (Antiderivatives, Introduce indefinite integral notation from Section 5.4 while doing 4.9)
 - **Lecture 21** - Appendix E (Omit Mathematical Induction)
- **Week 9: October 29 - November 2**
 - **Lecture 22** - 5.1 (Area and Distance)
 - **Lecture 23** - 5.2 (The Definite Integral)
 - **Lecture 24** - 5.3 (Fundamental Theorem of Calculus)
- **Week 10: November 5-9**
 - **Lecture 25** - 5.5 (The Substitution Rule)
 - **Lecture 26** - 6.1 (Areas Between Curves)
 - **Lecture 27** - 6.2 (Volumes)
- **Week 11: November 12-16**
 - **Lecture 28** - 6.2 (Continued), 6.4 (Work)
 - **Lecture 29** - 6.5 (Average Value of a Function), 7.1 (Integration by Parts)
 - **Lecture 30** - 7.1 (Continued)

- **Week 12: November 19-23**

- **Lecture 31** - 7.2 (Trigonometric Integrals)
- **Lecture 32** - 7.3 (Trigonometric Substitution)
- **Lecture 33** - 7.4 (Integration of Rational Functions by Partial Fractions, omit rationalizing substitutions)

- **Week 13: November 26-30**

- **Lecture 34** - 7.4 (Continued)
- **Lecture 35** - 8.1 (Arc Length)
- **Lecture 36** - 7.5 (Integration Strategy)

- **Week 14: December 3-5**

- **Lecture 37** - Review
 - (Classes end on December 5th)
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