Mathematics & Statistics
MATH 1ZA3
Engineering Mathematics I
Fall 2025

McMaster University | SCIENCE

Instructor Information

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Course Information

See below.

Course Dates: 09/02/2025 - 12/04/2025
Units: 3.00
Course Delivery Mode: In Person
Course Description: Functions: limits, continuity, derivatives, optimization, curve sketching. Antiderivative, definite integral, techniques of integration, with applications. Three lectures, one tutorial, one lab; one term Prerequisite(s): Registration in a program in Engineering Antirequisite(s): ARTSSCI 1D06 A/B, MATH 1A03, 1LS3, 1N03, 1NN3, 1X03, 1Z04 Not open to students with credit or registration in ISCI 1A24 A/B.

Instructor-Specific Course Information

Course Website

- Consult the course webpage on childsmath for all announcements. Please check it regularly.

Calculators

- Only the McMaster standard calculators (the Casio fx 991 MS or fx 991 MS Plus) is allowed on the tests and exam. No other versions of the Casio fx-991 are allowed.

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. See above for the learning objectives.

Assignment Information

- There will be 10 online assignments. See the Important Dates in childsmath 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' in childsmath.
- **Tentative Dates** (subject to change):
- **Test #1:** Evening of Monday October 20th
- **Test #2:** Evening of Monday November 17th

Check the Announcements on childsmath for room and time information, and for instructions on what to do if you have a conflict with the test time.

Important Links

- Mosaic
- Avenue to Learn
- Student Accessibility Services - Accommodations
- McMaster University Library
- eReserves

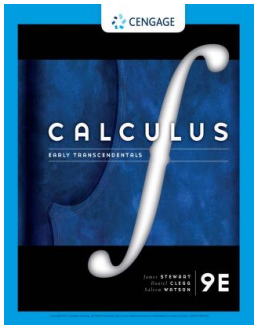
Course Learning Outcomes

- Functions: Recognize and algebraically manipulate trigonometric, hyperbolic and exponential functions and their inverses.

- Limits & Continuity: Know and understand the concept of limits and continuity.
- Limit Computation: Calculate limits both simple and of indeterminate form.
- Definition of the Derivative: Understand the definition of the derivative and its relation to tangent lines and slopes.
- Differentiation: Calculate the derivative of functions using differentiation rules.
- Curve Sketching: Use information from first and second derivatives to explore the behaviour of a given function and its graph
- Derivative Applications: Use differentiation in various elementary applications.
- Definition of Integration: Know and understand the definition of the definite integral and its relation to areas and net change.
- Integration: Know and understand techniques required to compute both indefinite and definite integrals.
- Integration Applications: Use integration techniques in various elementary applications.

Required Materials and Texts

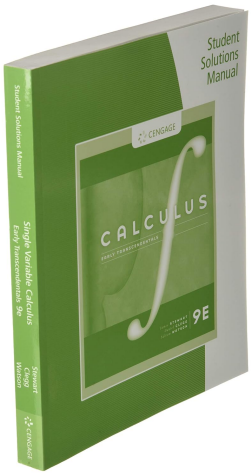
Please sign in with your MacID here to view your booklist



Calculus, Early Transcendentals, 9th Edition
Authors: Stewart, Clegg, and Watson
Publisher: Cengage

Optional Course Materials

Please sign in with your MacID here to view your booklist



Student Solutions Manual for Single Variable Calculus, Early Transcendentals

Class Format

In Person

The course will consist of in-person lectures given during class time, as well as tutorials. The tutorials will likely include examples that expand upon the lectures as well as Q&A.

Course Evaluation

10 Assignments - 1.5 % Each
2 Tests - 20% Each
Final Exam - 45%

- 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.

Undergraduate Grading Scale

The grades breakdown for McMaster's 12-Point Grading Scale

Grade	Equivalent Grade Point	Equivalent Percentages
A+	12	90-100
A	11	85-89
A-	10	80-84
B+	9	77-79
B	8	73-76
B-	7	70-72
C+	6	67-69
C	5	63-66
C-	4	60-62
D+	3	57-59
D	2	53-56
D-	1	50-52
F	0	0-49

Graduate Grading Scale

Graduate Student Grading Scale (Except for MBA and Master of Finance)

Grade	Points	Equivalent Percentage	Pass/Fail
A+	12	90-100	P+
A	11	85-89	
A-	10	80-84	
B+	9	77-79	P
B	8	73-76	
B-	7	70-72	
F	0	69 and under	F

MBA and Master of Finance Grading Scale

Grade	Points	Equivalent Percentage	Pass/Fail
A+	12	90-100	P+
A	11	85-89	P
A-	10	80-84	
B+	9	75-79	

Grade	Points	Equivalent Percentage	Pass/Fail
B	8	70-74	
B-	7	60-69	
F	0	59 and under	F

Course Schedule

Approximate Schedule: Review of Trigonometry, Inverse Functions and Logarithms (3 lectures), Continuity and Derivatives (8 lectures), Applications of Differentiation (10 lectures), Integrals (5 lectures), Applications of Integration (4 lectures), Techniques of Integration (6 lectures).

Absences, Missed Work, Illness

Requests for Relief for Missed Academic Term Work

In the event of an absence for medical or other reasons, students should review and follow the Policy on Requests for Relief for Missed Academic Term Work.

When using the MSAF, **do not report your absence to your professor**. Instead, follow the instructions below.

If your MSAF form was received, then the word "note" will appear in place of your mark on the marks page in childsmath. 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 contact 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.

Turnitin.com

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be

expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

Generative AI: Use Prohibited

Students are not permitted to use generative AI in this course. In alignment with McMaster academic integrity policy, it "shall be an offence knowingly to … submit academic work for assessment that was purchased or acquired from another source". This includes work created by generative AI tools. Also state in the policy is the following, "Contract Cheating is the act of "outsourcing of student work to third parties" (Lancaster & Clarke, 2016, p. 639) with or without payment." Using Generative AI tools is a form of contract cheating. Charges of academic dishonesty will be brought forward to the Office of Academic Integrity.

APPROVED ADVISORY STATEMENTS

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour 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. For information on the various types of

academic dishonesty please refer to the Academic Integrity Policy, located at https://secretariat.mcmaster.ca/university-policies-proceduresguidelines/

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

Authenticity / Plagiarism

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. Avenue to Learn, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

Courses with an On-line Element

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn, LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-

line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Online Proctoring

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online.**

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

Academic Accommodation of Students with Disabilities

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make

arrangements with a Program Coordinator. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

Requests for Relief for Missed Academic Term Work

In the event of an absence for medical or other reasons, students should review and follow the Policy on Requests for Relief for Missed Academic Term Work.

Academic Accommodation for Religious, Indigenous, or Spiritual Observances (RISO)

Students requiring academic accommodation based on religious, Indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students 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.

Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

Extreme Circumstances

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, Avenue to Learn and/or McMaster email.

Academic Support for Students in the Faculty of Science

Students in the Faculty of Science can seek academic support and advice from the Office of the Associate Dean of Science (Academic). Our team is committed to your success! When you need support, have a question, or need direction – please contact the Office of the Associate Dean (Academic). The knowledgeable, friendly team is here to support your academic success during your undergraduate studies with the Faculty of Science.

Our office is located in Burke Science Building (BSB) Room 136. We can be reached online at https://science.mcmaster.ca/associatedean/current-students/academic-advising.html. Students are also encouraged to familiarize themselves with policies related to Academic Accommodations for Students with Disabilities and Academic Accommodations for Religious, Indigenous or Spiritual Observances.

Checking Grades & Regrade Policy

Checking Your Grades

Your marks will be recorded on childsmath. It is your responsibility to check that all grades entered into childsmath are recorded properly. All grade concerns and discrepancies must be reported to the instructor within a week of receiving the grade.