

Course Outline for ARTSSCI 1D06 Calculus

2017–18 (term 3)

Course Home Page The course home page can be found at
http://math.mcmaster.ca/~haskell/artssci1d_17-18/as1d_17-18.html

Instructor Dr Deirdre Haskell HH316, ext 27244, haskell@math.mcmaster.ca

Office hours MTh 10:30—12:00

Course meeting times M 9:30--10:20, T 10:30--11:20, Th 9:30--10:20 in BSB 106; F 11:30--12:20 in KTH B132

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Textbook Calculus: early transcendentals, 8th edition, by James Stewart, Nelson Education Ltd. The textbook package from the bookstore includes the book and access to WebAssign. WebAssign is required for the homework assignments, so if you do not buy the textbook package, then you will have to buy this separately. For this reason, I think that the package is a reasonably good deal. You may use an older edition of the textbook, but you will be responsible for making the appropriate translation of section and problem numbers

Course structure There are four lectures and one tutorial per week. You should plan to attend all of these. Three of the lectures will cover the required material for the course, and one will cover enrichment material. For the first half of the first semester, this will be review material. Then we will move on to discussing technical writing in preparation for the essay that you will write next semester. In second semester, this extra hour will be used for a wider introduction to what mathematics is beyond calculus. Topics for the fourth lecture will be posted on the course website.

Course objective There are two main objectives of the course. The first is to learn the techniques and applications of the differential and integral calculus. The second is to appreciate the development of the calculus as one of the most significant intellectual achievements of humankind in the last four hundred years.

Assessment for term 1

WebAssign homework 10% WebAssign is the online system that comes with your textbook. There will be one assignment per week. For the detailed schedule, see the table below. The WebAssign mark will be based on the best 10 of 11 or 12 assignments. Late assignments will not be accepted.

Written homework 10% Written homeworks will come from the Problems Plus section of the textbook. The assignments will be discussed in tutorial every other week. The homework mark will be based on the best four of five homeworks. See dates on the table below.

Quizzes 10% Quizzes will be held every other week during tutorial. Dates are indicated in the

table below; quiz topic will be posted on the course website. The quiz mark will be based on the best four of five quizzes.

Midterms 30% There will be two in-class midterms, on dates indicated below.

Final 40% On a date scheduled by the registrar's office.

Assessment for term 2

WebAssign homework 10% As for Term 1; dates will be announced at the beginning of second semester.

Written homework 10% As for Term 1; dates will be announced at the beginning of second semester.

Quizzes 10% As for Term 1; dates will be announced at the beginning of second semester.

Essay 10% You will write an essay explaining a topic on mathematics to an intelligent, but uninformed audience. More details about the essay will be discussed during the first semester. You should plan to choose a topic by the end of the first semester, to discuss your topic with me and your TA early in the second semester. Due dates in second semester will be announced in December.

Midterms 20% There will be two in-class midterms; dates will be announced at the beginning of second semester.

Final 40% On a date scheduled by the registrar's office.

Assessment for full year The first semester will count for 45% or 55% of the mark for the full year, whichever is better.

MSAF In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work." Please also see the MSAF statement on our website <http://artsci.mcmaster.ca/forms-requests> (and direct any questions or concerns to Shelley Anderson or Rebecca Bishop in the Arts & Science Program Office as appropriate). For each category of work, the item missed with an MSAF will be the allowed missed item from that category. So if you miss a WebAssign assignment, the missed assignment will be the one of the 11 assignments which is dropped. If you miss the midterm, you should talk to me about how it will be made up.

Academic Accommodation of Students with Disabilities Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or email sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities.

Schedule for Term 1:

Week	Topic	Work due	Tutorial topic	Friday topic
Week 1 Sept 5-8	Introduction, continuity, limits by definition Read Stewart 2.5, 2.4	Take the (optional) diagnostic test on WebAssign. Talk to me about any topics you need to review.	No tutorials this week.	The absolute value function
Week 2 Sept 11-15	Limits in practice, tangent line, derivative Read Stewart 2.3, 2.7, 2.8	WebAssign 1 due Monday Sept 11 at 23:59 Homework 1 due Friday Sept 15	Talk about Homework #1 on limits	Exponential and logarithm functions
Week 3 Sept 18-22	Derivative as a function, derivatives of polynomials and exponentials, product and quotient rule Read Stewart 2.8, 3.1, 3.2	WebAssign 2 due Monday Sept 18 at 23:59	Quiz 1	Trig functions
Week 4 Sept 25-29	Derivatives of trig functions, chain rule, inverse functions Read Stewart 3.3, 3.4, 3.6	WebAssign 3 due Monday Sept 25 at 23:59 Homework 2 due Friday Sept 29	Talk about Homework #2 on derivatives	Inverse trig functions
Week 5 Oct 2-6	Linear approximation, Newton's method, maxima and minima Read Stewart 3.10, 4.8, 4.1	WebAssign 4 due Monday Oct 2 at 23:59	Review for midterm	Midterm 1 covers chapters 2 and 3
Fall Break Oct 9-13				
Week 6 Oct 16-20	Mean value theorem, shape of graph, limits at infinity Read Stewart 4.1, 4.2, 4.3, 4.4	WebAssign 5 due Monday Oct 16 at 23:59	Quiz 2	
Week 7 Oct 23-27	Curve sketching, summation notation, area Read Stewart 4.5, appendix E, 5.1	WebAssign 6 due Monday Oct 23 at 23:59 Homework 3 due Friday Oct 27	Talk about Homework #3 on application of derivatives	
Week 8 Oct 30-Nov 3	Definite integral, fundamental theorem of calculus Read Stewart 5.2, 5.3	WebAssign 7 due Monday Oct 30 at 23:59	Quiz 3	
Week 9 Nov 6-10	More on fundamental theorem, antiderivatives Read Stewart 5.3, 4.9, 5.5	WebAssign 8 due Monday Nov 6 at 23:59 Homework 4 due Friday Nov 10	Talk about Homework #4 on fundamental theorem	

Week 10 Nov 13-17	Area between curves, volumes Read Stewart 6.1, 6.2	WebAssign 9 due Monday Nov 13 at 23:59	Quiz 4	
Week 11 Nov 20-24	Differential equations, exponential growth, Euler's method Read Stewart 9.1, 3.8, 9.2	WebAssign 10 due Monday Nov 20 at 23:59	Review for midterm	Midterm 2 covers chapters 4, 5, 6
Week 12 Nov 27-Dec 1	Separable equations, population growth Read Stewart 9.3, 9.4	WebAssign 11 due Monday Nov 27 at 23:59 Homework 5 due Friday Dec 1	Quiz 5 Talk about Homework #5 on differential equations	
Week 13 Dec 4-6	Predator-prey Read Stewart 9.6	WebAssign 12 due Monday Dec 4 at 23:59	Review	Final exam

McMaster Policy on Academic Integrity You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. The academic credentials that you earn are rooted in principles of honesty and academic integrity. 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. It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty, please refer to the Academic Integrity Policy, located at: www.mcmaster.ca/academicintegrity . The following illustrates only three forms of academic dishonesty: 1) plagiarism, i.e. 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.

Please Note 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 students to check **their McMaster email** and course websites weekly during the term and to note any changes. Announcements will be made in class and by using the course email distribution list.