**Course Outline for ARTSSCI 1D06 Calculus**

**2017–18 (term 3)**

**Amended for Term 2**

**Course Home Page** The course home page can be found at http://math.mcmaster.ca/~haskell/artssci1d\_17-18/as1d\_17-18-winter.html

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

Office hours MTh 10:30—12:00, W 14:30-15:30

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

**Teaching assistants** Marco Handa handamg@mcmaster.ca

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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 coverthe 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 whatmathematics 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 differentialand integral calculus. The second is to appreciate the development of the calculus as one of the most significantintellectual achievements of humankind in the last four hundred years.

**Assessment for term 2**

WebAssign homework 10% 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% 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 three of four quizzes.

Essay 10% You will write an essay explaining a topic on mathematics to an intelligent, but uninformed audience. You should have chosen an essay topic by now. A first draft is not required, but is strongly recommended. This is due on Feb 2 if you want feedback. Final version of essay is due on March 2.

Midterms 20% each There will be two in-class midterms; tentatively scheduled for Feb 2 and Mar 2.

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 2:

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| **Week** | **Topic** | **Work due** | **Tutorial topic** | **Friday topic** |
| Week 1 Jan 4-5 | Sequences - definition, convergence Read Stewart  11.1 |  | No tutorials this week. | Regular lecture |
| Week 2 Jan 8 - 12 | series, geometric series, convergence, alternating series (lectures given by TAs this week) Read Stewart 11.2, 11.5 | WebAssign 13 due  Monday Jan 8 at 23:59 Homework 5 due Friday Jan 12 | Talk about Homework #5 on sequences | No class |
| Week 3 Jan 15 - 19 | ratio test, power series Read Stewart 11.6, 11.8 | WebAssign 14 due  Monday Jan 15 at 23:59 | Quiz 6 on convergence | Cryptography I |
| Week 4 Jan 22 - 26 | Taylor series Read Stewart 11.10 | WebAssign 15 due  Monday Jan 22 at 23:59 Homework 6 due Friday Jan 26 | Talk about Homework #6 on series | Cryptography II |
| Week 5 Jan 29 - Feb 2 | Review fundamental integrals, integration by parts Read Stewart 7.1, 7.2 | WebAssign 16 due  Monday Jan 29 at 23:59 Submit draft of essay for comment by Friday | Review for midterm | Midterm 3 covers chapter 11 |
| Week 6 Feb 5 - 9 | More integration by parts, trigonometric integrals Read Stewart 7.3 | WebAssign 17 due  Monday Feb 5 at 23:59 Homework 7 due Friday Feb 9 | Talk about Homework #7 on integration | Guest lecture: |
| Week 7 Feb 12 - 16 | Partial fractions, integration strategy, improper integrals Read Stewart 7.4, 7.5, 7.6 | WebAssign 18 due  Monday Feb 12 at 23:59 | Quiz 7 on integration | Integration bootcamp |
| Reading Week |  |  |  |  |
| Week 8 Feb 26 - Mar 2 | Parametric curves, calculus Read Stewart 10.1, 10.2 | WebAssign 19 due  Monday Feb 26 at 23:59 Essay due on Friday! | Talk about Homework #8 on parametric curves | Julia Robinson and Hilbert's 10th Problem (movie) |
| Week 9 Mar 5 - 9 | More on calculus for parametric curves, polar coordinates Read Stewart 10.2, 10.3 | WebAssign 20 due  Monday Mar 5 at 23:59 Homework 4 due Friday Nov 10 | Review for midterm | Midterm 4 covers chapter 7 |
| Week 10 Mar 12 - 16 | Area in polar coordinates, functions of several variables Read Stewart 10.4, 14.1 | WebAssign 21 due  Monday Mar 12 at 23:59 | Quiz 8 on parametric curves | Guest lecture: |
| Week 11 Mar 19 - 23 | Limits and continuity, partial derivatives Read Stewart 14.2, 14.3 | WebAssign 22 due  Monday Mar 19 at 23:59 | Talk about Homework #9 on polar coordinates |  |
| Week 12 Mar 26 - 30 | Tangent planes Read Stewart 14.4 | WebAssign 23 due  Monday Mar 26 at 23:59 | Quiz 9 on partial derivatives | Good Friday (no classes) |
| Week 13 Apr 2 - 6, 9 | Local maxima and minima, review Read Stewart 14.7 | WebAssign 24 due  Monday Apr 2 at 23:59 | Review for final | Review |

**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](http://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.