MATH 1004 D Fall 2019
Calculus for Engineering or Physics

Instructor: Dr. Mohammad R Sadeghi,
Herzberg Physics, Office: 5260 HP
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Email: msadeghi@math.carleton.ca
Office hours: Mon & Tue.: 2:00 – 3:00 pm

Textbook: "The ABCs of Calculus", Volumes 1, by Angelo Mingarelli, Nolan Company. Will be available in Herzberg Physics Labs 4380 (Dr. Mingarelli's office) selected days on or after Sept. 5, until quantities last. Please check the door for availability. $100 net, tax in, cash only please.


Prerequisites: Ontario Grade 12 Mathematics: Advanced Functions and Introductory Calculus; or an OAC in Calculus, or MATH 0007, or equivalent.

Lectures: Tue. & Thur. 4:05:00 – 5:25 pm at AT 301


Tutorials: begin on Thursday Sept. 12, every Thursday, 5:35 - 6:25 pm.
A Teaching Assistant (TA) will be presented, to answer questions, work on some suggested problems provided by the prof. or from Tutorial Compendium and to administer the tests. The class is subdivided into the tutorial groups according to the last names of the students based on the following table

<table>
<thead>
<tr>
<th>Sec.</th>
<th>Student’s Last Name</th>
<th>Location</th>
<th>Days/Time</th>
<th>TAs name</th>
<th>TA’s email</th>
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</thead>
<tbody>
<tr>
<td>D1</td>
<td>A. -- Cam</td>
<td>TBA</td>
<td>Thur. 5:35-6:25 pm</td>
<td>Jingyi Chen</td>
<td><a href="mailto:jingyichen6@cmail.carleton.ca">jingyichen6@cmail.carleton.ca</a></td>
</tr>
<tr>
<td>D2</td>
<td>Can -- Ho</td>
<td>TBA</td>
<td>Thur. 5:35-6:25 pm</td>
<td>Grace Chang</td>
<td><a href="mailto:gracechang@cmail.carleton.ca">gracechang@cmail.carleton.ca</a></td>
</tr>
<tr>
<td>D3</td>
<td>Hu -- Na</td>
<td>TBA</td>
<td>Thur. 5:35-6:25 pm</td>
<td>Siming Tian</td>
<td><a href="mailto:simontian3@cmail.carleton.ca">simontian3@cmail.carleton.ca</a></td>
</tr>
<tr>
<td>D4</td>
<td>Ne. -- Sh.</td>
<td>TBA</td>
<td>Thur. 5:35-6:25 pm</td>
<td>David Charles</td>
<td><a href="mailto:DavidCharles3@cmail.carleton.ca">DavidCharles3@cmail.carleton.ca</a></td>
</tr>
<tr>
<td>D5</td>
<td>Si. -- Z.</td>
<td>TBA</td>
<td>Thur. 5:35-6:25 pm</td>
<td>Biftu Hulo</td>
<td><a href="mailto:biftuomar@cmail.carleton.ca">biftuomar@cmail.carleton.ca</a></td>
</tr>
</tbody>
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Evaluation:
1: Term mark 40% (best 4 out of 6 tests),
2: Tutorial attendance 5% ,
3: General knowledge test (algebra, trigonometry, logs, exponentials) 5% ,
4: Final examination 50.
The final grade is assigned as the maximum between the final exam grade evaluated out of 100% and the combined grade (1)-(4) described above.

The General Knowledge Test (0) will take place in the first tutorial on Sept. 12. It will be a 30-minute test based on basic algebraic operations with variables and elementary functions.

Term Tests: There will be six 50-minute tests during tutorials on

Sept 26, Oct 10, Oct 31, Nov 7, Nov 21, Dec 5
Note: The "best 4 of 6" rules allow you to miss some of the term events for any reason (medical or otherwise). In other words, under normal circumstances, if you miss a test for a medical or other reason then we still choose the best 4 out of 6 tests you will have written. There will be NO make-up tests as we have limited resources. This is the reason why the students are allowed to miss two tests without penalty. The instructor reserves the right not to answer the individual emails concerning make-up tests.

Final Examination: This is a 3-hour exam scheduled by the University. The exam is taking place during the period of Dec. 9 to 21 (including Sat.). It is each student’s responsibility to be available at the time of the examination. In particular, no travel plans should be made until the examination schedule is published. It is each student responsibility to find out the correct date and time of the exam and the room where it takes place. After the exam is written, the students are allowed to see their exam papers until January 4. This examination review is for the educational purpose only and NOT for negotiation of the grade with the instructor. Please remember that we do not change grades on the basis of students’ needs (such as scholarships, etc.).

Homework: Students are expected to do the exercises from the textbook which follow the sections discussed in class. The answers to all the practice problems are in the end of the textbook. These exercises are not to be handed in and will not be graded. However, in order to succeed in the course, it is absolutely essential to do the exercises on a regular basis.

Calculators: NOT allowed for tests and the exam.

Tutors: Advertise frequently on the Notice Boards around the center OR you may ask your instructor.

MATH Tutorial Center: Tutorial Centre (3422 Herzberg Physics) http://carleton.ca/math/math-tutorial-centre/This is a drop-in centre providing a one-to-one tutorial service, free of charge, for Q-year and first year students on a "first come first serve" basis.

Online help: Math & Statistics Learning Assistance Program (MS-LAP) supports first year mathematics and statistics courses. This free of charge program provides learning support and solutions to homework questions through assistance videos. These services are available on CULearn. MS-LAP gives students tools to succeed while explaining step-by-step particular problem strategies and associated theory. The program is for anyone who wants to deepen their understanding at their own pace, and in the comfort and privacy of their home.

Topics:

1. Functions, Review of Chapter 1, Trigonometry (Chapter 1, Appendices A, B, C, D).
2. Limits and Continuity, Evaluating Limits at Infinity, Derivatives, The Chain Rule (2.1-2.6,3.1-3.3).
3. Implicit differentiation, Derivatives of trigonometric functions, Inverse functions (3.4, 3.5, 3.7, 3.8).
4. Inverse trigonometric functions and their derivatives, L'Hospital's Rule (3.9, 3.10).
5. Exponentials and Logarithms and their derivatives, Curve sketching (4.1-4.6, 5.1-5.3).
7. Area, Integration by substitution (change of variable) (6.3, 6.4, 7.1, 7.2).
8. Integration by Parts (7.3).
9. Partial Fractions, Powers of Sines and Cosines, Trigonometric substitutions (5.4-5.6).
10. Improper Integrals, Area between Two Curves (7.8, 8.2).
11. Volumes of Solids of Revolution (8.3-8.5).
Students with disabilities Students with disabilities requiring academic accommodations in this course are encouraged to contact the Paul Menton Center for Students with Disabilities (500 University Center) to complete the necessary forms. After registering with the Center, make an appointment to meet with me in order to discuss your needs at least two weeks before the first in-class test or CUTV midterm exam. This will allow for sufficient time to process your request. Please note the following deadlines for submitting completed forms to the PMC for formally scheduled exam accommodations: TBA for fall and fall/winter term courses, and TBA for winter term courses."

Academic Accommodation: You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. You can visit the Equity Services web site to view the policies and to obtain more detailed information on academic accommodation at http://carleton.ca/equity/accommo