Carleton U, School of Math & Stats
Multivariable Calculus for Engineering or Physics
Math 2004-B

Dr. ℜJ Cova

Fall 2019

✎ OFFICE: HP 5250. PHONE: 520-2600 ext 1983. E-MAIL: rcova@math.carleton.ca

✎ WEBSITE: https://www.carleton.ca/culearn

✎ LECTURES: M, W 10:05 - 11:25 h, AT 101.

✎ CONSULTATION HOURS: T 17:30 - 18:30 h.

✎ TUTORIALS: M 13:35 - 14:25 h (from 16 Sept). We have five awesome sections:

√ B1: Venue SA 318. Teaching Assistant [TA]: `spencersimbul@cmail.carleton.ca`

√ B2: Venue SA 517. TA: `ahmedshaheerahnafhud@cmail.carleton.ca`

√ B3: Venue SA 516. TA: `shenlunjin@cmail.carleton.ca`

√ B4: Venue SA 402. TA: `samuelzhu@cmail.carleton.ca`

√ B5: Venue CB 2104. TA: `tobikamoru@cmail.carleton.ca`

Remark: You must attend your official tutorial section ONLY.

✎ TEXTBOOK: The ABC's of Calculus (Volume 2), by Angelo Mingarelli. Nolan Company, 2019 (latest edition). Available from the author himself from 04 September at HP 4380.
Contact: angelo.mingarelli@carleton.ca

✎ CONTENTS (chapters 1 - 7 from the textbook):

* **Vectors**, dot product, cross product, triple product, direction cosines, lines and planes, rotations and translations in the plane. * **Planar curves**, parametric representation, conic sections, area, length. * **Polar coordinates**, limits, continuity, partial derivatives. * **Directional derivatives**, gradient, the chain rule, implicit differentiation, tangent planes, normal lines. * **Conservative fields**, divergence, curl, line integral. * **Double integrals**, volume under a surface, volume of solids of revolution, area of a surface. * **Change of variables** in double integrals. * **Parametric equations** of a surface, surface integrals. * **Green's Theorem**. Stokes' Theorem. * **Triple integrals**, change of variables in triple integrals. * **Cylindrical, spherical** coordinates. * **The Divergence** Theorem. * **Extrema of functions** of two variables, Lagrange multipliers.

✎ GRADING SCHEME:

* Tutorial attendance 10 %, Tests 40 %, Final Exam 50 %

OR

* Final Exam 100 %, whichever is greater.

✍ TUTORIALS: Attendance and work therein represents 10 % of the final grade (FG). The tutorial mark shall strictly abide by the TA's records so kindly ensure to sign the attendance sheet.

✍ TESTS: Six tests of equal weight will be administered on:

30 September, 07 October, 28 October,
04 November, 18 November, 25 November.

The average of your best four tests is worth 40 % of the FG. Should you wish to review a test please advise your TA within one week after receiving the test in question. Most regretfully, grading issues brought up outside this period will not be addressed.

$\surd$ Kindly pick up your test papers from your TA asap. Due to scarcity of space, uncollected papers will be discarded.

$\surd$ We apologise that we cannot apply any make-up tests in this course. Missing up to two tests is covered by our best-4-out-of-6 policy. Absence from more than two tests can only be excused by ill-health, events of extreme personal misfortune, sports obligations, jury duty, &c, supported by appropriate documentation (hard-copy) within 5 working days of the test date.

✍ FINAL EXAMINATION: This is the customary three-hour exam to be applied during the period 09 - 21 December, and it counts for 50 % of the FG. The exact date and venue will be announced by the university in due course.

✎ CALCULATORS: Any calculator may be used in our evaluations but wireless devices are forbidden.

✎ HOMEWORK: A number of exercises will be suggested in Culearn. This homework is not to be handed in, nor will it be graded.

✎ Math TUTORIAL CENTRE: Great facility located @ HP 3422. Pop in for details.

✎ WITHDRAWAL: The last day for withdrawing the course with a convenient full fee adjustment is 30 September.

✎ ACADEMIC ACCOMMODATION, STUDENTS WITH DISABILITIES: Kindly apply before the Paul Menton Centre (500 University Centre) as soon as possible. Please visit the university website for details.

✎ Academic INTEGRITY: Please read section 14 of the academic regulations, which may be found at http://calendar.carleton.ca/undergrad/regulations.

$\star$ the outline might change depending on the course dynamics $\star$