Carleton Univ, Math & Stats Multivariable Calculus for Engineering or Physics Math 2004-A — ONLINE

(Dr. %J Cova)

Fall 2020

- LECTURES: Fresh lessons will be posted on Culearn (Big Blue Button) every Tuesday and Thursday at 14:35 h.
- CONSULTATION HOURS: Anytime by email (replies within 24 h).
- TUTORIALS: Thursday 16:35 h 17:25 h via Culearn (from 24 September). We have five awesome sections:
 - √ A1: Teaching Assistant: keithha@cmail.carleton.ca@cmail.carleton.ca
 - $\sqrt{\mathrm{A2}}$: mihailsantean@cmail.carleton.ca
 - $\sqrt{A3}$: alexandreconlon@cmail.carleton.ca
 - $\sqrt{\mathrm{A4}}$: benjaminearplynch@cmail.carleton.ca
 - $\sqrt{\mathrm{A5}}$: simonearplynch@cmail.carleton.ca
- TEXTBOOK: "The ABC's of Calculus" (Volume 2), by Angelo Mingarelli. Edition 2019. Available at the Carleton University bookstore.

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 CALCULATORS, MEMORANDA: Any calculator/memoranda may be used in our evaluations but NO help from another human being is permitted in any manner whatsoever. Cova, 2004-A 2

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.
- MOMEWORK-PRACTICE: Please practise the course content by solving the exercises suggested in Culearn and more, if possible.
- © GRADING SCHEME: Tests 30 %, Assignments 45 %, Final Exam 25 %
 - En TESTS: We will apply two tests of equal weight via Culearn on the tutorial hours of 24 September, 15 October.

We apologise that there will be NO make-up tests in this course. Absence from a test can only be excused by ill-health, events of extreme personal misfortune, jury duty, &c, supported by appropriate documentation. In this case your grade may be pro-rated.

- ASSIGNMENTS: We will administer three assignments A_j , j = 1, 2, 3, due on **22 October**, **05 November**, **26 November**, respectively. A late-submission penalty will apply. We regret that we have NO make-up assignments in this course.
- FINAL EXAMINATION (FE): This is a three-hour exam to be applied during the period 12-23 December. The exact date will be announced by the university in due course.

* REMARK *

By registering in this course you acknowledge that we may use online proctoring tools which could require your identifying yourself via webcam. Additionally, while you are sitting the evaluations, your activities may be monitored either by direct observation via webcam or through the use of a screen-recording software. Evidence of academic misconduct will be treated very seriously.