MA 132 **COMPUTATIONAL MATHEMATICS FOR LIFE AND MANAGEMENT SCIENCES**

Syllabus

**Instructor:** Dr. Andrew Cooper (he/him/his), andrew.cooper@math.ncsu.edu

**Website:** You’re on it

**WebAssign:** WebAssign credentials must be purchased through webassign.ncsu.edu

**Software:** You will need access to a computer with Maple and Excel. Almost all NCSU Libraries computers have these programs, and they are accessible via the Virtual Computing Lab. *Software purchase is not required.*

**Office Hours:** by appointment in 3232 SAS Hall

**Scope and Objectives**

In this course, we’ll use two software tools, Excel and Maple, to model and interact with real-world phenomena and data. We will use this software to handle the "grunt work" of calculus so that we can focus on applying mathematical concepts – derivatives, differential equations, finite-difference equations, etc. -- to understand the world.

After taking this course, a successful student will be able to:

- learn basic ways of working with data and mathematical models
- become competent at using spreadsheets and computer algebra systems (Excel and Maple)
- solidify your understanding of the concepts of calculus
- apply your knowledge to real-world problems

**Prerequisites**

The prerequisites are at least a C grade in the first semester of calculus such as MA 121 or 131. I will expect you to be passingly familiar with the calculus of a single variable. You may on occasion need to go back and consult your Calculus I notes or a textbook, but probably not -- the computer’s going to do most of the work for us.
Assignments and Grades

The semester grade is based solely on 15 assignments, submitted via WebAssign.

› Assignments are roughly one per week during the semester.
  › All assignments are visible in WebAssign from the beginning of the semester.
  › Due dates are listed in WebAssign.
  › If you wish, you may request an automatic due date extension in WebAssign, provided you have not viewed the answer key. Use this feature judiciously – you will have to complete all the assignments by the last day of the semester one way or another.
  › Feel free to work the assignments "out of order". Assignments numbered like 6-I and 6-II are related, so you may wish to work on them at the same time.
  › WebAssign allows multiple attempts on each part of each problem of each assignment.
  › Each assignment is worth 7.6 points; the introductory practice assignment is worth 1.2 points.
  › The lowest 2 assignment scores will be dropped. Your semester grade will be computed from your total score on the introductory assignment and the best 13 assignments, according to the following table:

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**WARNING:** WebAssign’s gradebook feature doesn’t support this kind of dropping-and-averaging; your grade as reported in WebAssign may differ slightly from the grading policy above. At the end of the semester I compute all grades in my own spreadsheet rather than using WebAssign’s reported semester grade.

› There will be no make-up or excused assignments.
› There will be no extra credit.