MATH 272, Spring 2019 Syllabus

Course Title: Applied Mathematics for Chemists II

Time/Location: MTWF, 8:00-8:50 am, Engineering E206. Office hours TBD

Instructor: Vance Blankers, `blankers@math.colostate.edu`

Textbooks: *The Chemistry Maths Book* - 2nd Edition, Erich Steiner

Mathematics for Physical Chemistry: Opening Doors - D. A. McQuarrie

Content: The spring semester will be split into three main parts: Part III expands on topics from last semester, including Fourier series, operator theory, and some special functions. Parts IV and V build the analogous theory for functions of more than one variable.

Grading: Letter grades will correspond to 10% windows: 90-100% is an A, 80-89% is a B, etc. The following items will contribute to your final grade.

Exams (50%) - There will be three exams: one for Part I, one for Part II, and a final. Dates will be announced several weeks in advance.

Homework ($\geq 25\%$) - Assignments will be given most weeks, often using questions taken from the textbooks. Solutions will be graded on correctness and clarity of supporting work. Complete sentences are expected.

Other ($\leq 25\%$) - Class sessions will occasionally consist of labs or other in-class activities based on previously-assigned reading.

Prerequisites: You are assumed to have a working understanding of Calculus I (at CSU this is MATH 160 or MATH 155) and basic algebra. In addition, we'll use concepts we used last semester.

Academic Integrity: Don't cheat. Check out `http://tilt.colostate.edu/integrity` for more details. While many things in life operate on the "better to ask forgiveness than permission" principle, this is not one of them. When in doubt, ask me ahead of time.

Groupwork, unless specified otherwise, is *not* considered cheating in this class, and is very strongly *encouraged*. However, you are expected to write up your solutions individually unless otherwise noted; word-for-word reproductions look fishy at best, so please make sure to write things in your own words.

RDS: Have a Resources for Disabled Students (RDS) situation? No problem; just let me know as soon as possible.

Late Homework: In general, no late work will be accepted. You'll be asked to turn in homework at the beginning of class on whichever day it is due, though you can always turn it in early. Exceptions for extreme circumstances and emergencies, accompanied by written documentation of proof, will be considered but not guaranteed.
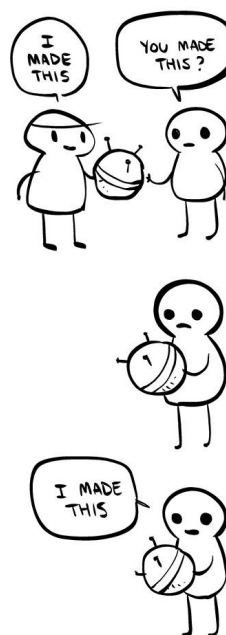
Exam Conflicts: If you are going to miss an exam for a university-sponsored event, provide the appropriate documentation at least a week ahead of time. Encourage your grandparents to stay healthy, as exam-season seems to be an extremely dangerous time for them.

Other Expectations: Treat your classmates and me with respect: silence cell phones when you get to class, don't cause distractions during lecture, don't eat delicious-smelling food without sharing, etc. Homework must be written legibly and separate sheets must be stapled, with no fringes; points will be docked for failing to meet these requirements. If your handwriting is atrocious, either practice or type up your solutions. Finally, I expect you to give an honest effort and have a good attitude. The number one cause of poor performance in a math class is an "I can't do it" mentality.

Leftovers: Extra stuff that didn't fit any of the categories above:

> As the instructor, I reserve the right to alter this syllabus at any time. I'll announce any such changes in class, in as timely a manner as possible.

> If you have any issues at all, please do not hesitate to contact me. Pretty much every (non-homework) problem can be resolved via communication.

> This is a fast-paced course. *Do not get behind.* This class will require a significant chunk of out-of-class time; make sure you respect the amount of work needed.

> Technology is a double-edged sword in learning mathematics. You should attempt to use technology to enhance your understanding without using it as a crutch. Immediately typing the problem into Wolfram Alpha and blindly copying the answer will not help you learn. Plugging the equation for a curve into Desmos (`https://www.desmos.com/calculator`) to get a good visual before finding a tangent line can be extremely beneficial.

> Related to the above, patience is your biggest ally. You will get stumped from time to time. Resist the urge to immediately ask for help or to right away Google the answer. Instead, try different things; see what you can do with the tools and techniques you have. Draw a picture. Attempt to do the stupidest, most straightforward thing possible, and work from there. The process of exploring questions and actively struggling with them will be the most helpful aspect of the class. Don't be Flanders Sr.: