Math for the Natural Sciences (INT 503)
Blocks 2-4, 2018

Instructor: Jessica Johanningmeier
Office: 324 Cole Library
Office Phone: 4222
Office Hours: I work 8-4:30, M-F. I am not in my office that entire time, but am around. You can always email to make an appointment.

Course Description and Schedule of Topics:
Math for the Natural Sciences is an adjunct (part-time) course that you can take along with your regular courses. In the course, I will provide instruction and practice in applying mathematical skills to solving problems in the natural sciences. You will meet with me individually and in groups over the course of blocks 2, 3, and 4; you will earn one-quarter credit (total) for the three blocks.
In Block 2, the focus will be on algebra: order of operations, evaluating and solving equations, understanding the relationship between variables within a formula, and applying these algebra skills to science situations.
In Block 3, the focus will be on logarithms, writing and solving equations in quadratic form, converting a variety of types of units (linear, square, cubic, and rate), and applying these skills to science situations.
In Block 4, the focus will be on using and understanding scientific notation by hand and with a calculator, creating and interpreting graphs by hand and with a calculator, and applying these skills to science situations.
All three blocks will involve direct application of math in science contexts. A natural science faculty member will provide a demonstration once per block that will tie in with that block's math topics.

Learning Objectives:
This course supports the Educational Priorities and Outcomes of Cornell College with emphases on knowledge, inquiry, communication, reasoning, and ethical behavior. Specifically, the learning objectives of this course are:

- Understand the importance of quantitative reasoning as it relates to science (inquiry, reasoning, ethical behavior)
- Gain the math knowledge and skills necessary for success in science courses (knowledge)
- Apply math skills in a science context (knowledge, reasoning)
- Communicate quantitative information clearly and accurately (communication)
- Be confident in quantitative reasoning abilities (knowledge, reasoning)

Meeting Times:
Many of the class hours will be individual or small-group meetings with me. We will schedule these together to fit both our schedules.
Once per block, there will be a whole-class meeting. The class will work together to choose the best time. It will likely be the second Tuesday or Wednesday evening of each block.

Videos:
Much of the basic math will be covered in videos that you are required to watch in the first week of each block. Total video time will be no more than half-an-hour per block. Videos need to be complete prior to the individual meeting with me. Videos are linked on Moodle.

Quizzes and Exams:
Following each video, you will take a quick-check quiz (approximately 5 questions each).
At the end of each block, you will take an exam over the content from that block.

Papers:
There will be four reflection papers for this class, one at the beginning of the course and one at the end of each block. The purpose of the reflections is to be thoughtful about your attitude about and confidence in quantitative reasoning. Papers will be submitted on Moodle.
Please use the Writing Studio if you want help thinking through the reflections.

Grading:
This class is satisfactory/unsatisfactory and does not impact your Cornell GPA.
In order to receive a grade of satisfactory, and receive credit for taking the course, you must:

- pass all quick-check quizzes and exams
- turn in all four reflection papers
- attend all individual and small-group meetings
- attend all whole-class meetings unless other arrangements are made with me due to schedule conflicts

Support:
Sami Vetter (SVetter19) is a secondary ed. and math major and a QR peer consultant who will partner with our class to help you as needed. Feel free to email her with questions or to schedule appointments for help.
In addition to Sami, the peer consultants in the Quantitative Reasoning Studio can help you along the way.
For the reflections, consider working with the peer consultants in the Writing Studio.

Disabilities:
The official Cornell College policy is as follows:
Cornell College makes reasonable accommodations for persons with disabilities. Students should notify the Coordinator for Academic Support and Advising (Library 309) and their course instructor of any disability-related accommodations within the first three days of the term for which the accommodations are required, due to the fast pace of the block format. For more information on the documentation required to establish the need for accommodations and the process of requesting the accommodations, see http://www.cornellcollege.edu/academic-support-and-advising/disabilities/index.shtml.

Academic Honesty:
The official Cornell College statement is as follows:
"Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgement of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty." (Academic Catalogue)
For more details, see page 30 of the Academic Catalogue.