# Math 2210Q Syllabus
# Spring 2020

**Instructor:** Jeffrey Connors
**E-mail:** jeffrey.connors@uconn.edu
**Office:** MONT 230
**Office hours:** You can always drop in to see if I am available. Otherwise, e-mail to set up an appointment.
**Class time and room:** M/W/F 11:15 AM - 12:05 PM in MONT 225.
**Text:** *Linear Algebra and its Applications* by Lay, Lay and McDonald, Fifth Edition.
**Homework:** Homework will be assigned for each section and due TENTATIVELY according to the schedule shown below. We will use MyMathLab online for homework. There is a link in HuskyCT to log in, also on the course website.
**Late homework:** Credit can still be earned for late work, but problems submitted after the due date are penalized at a rate of 15% per day late.
**Course website:** There is a link in HuskyCT. The course website can also be accessed directly at `personal.math.uconn.edu/~connors`.
**Calculators:** The use of calculators will not be permitted on exams. Calculators may be used on homework, along with any desired software.
**Grading policy:** The course grade is 20% homework, 20% exam 1, 25% exam 2 and 35% for the final exam.
**Final exam:** TBD. **The exam is cumulative.**

**UConn policies:**

- **Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships** - The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community  students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate Romantic relationships can undermine the Universitys mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate Romantic relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. (More information is available at `http://policy.uconn.edu/?p=2884`).

- **Sexual Assault Reporting Policy** - To protect the campus community, all non-confidential University employees (including faculty) are required to report assaults they witness or are told about to the Office of Diversity and Equity under the Sexual Assault Response Policy. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help. (More information is available at `https://titleix.uconn.edu/`.

- **Attendance** - Your instructor expects you to attend class regularly. Besides being nearly essential for developing your understanding of the material, your regular attendance in class is good for the morale of the class and is indicative of your interest in the subject and your engagement in the course. You are responsible for the material discussed in class and in the assigned reading in the text.

- **Student Conduct Code** - Students are expected to conduct themselves in accordance with UConns Student Conduct Code: `https://community.uconn.edu/the-student-code`.

- **Academic Integrity Statement** - This course expects all students to act in accordance with the Guidelines for Academic Integrity at the University of Connecticut. Because questions of intellectual property are important to the field of this course, we will discuss academic honesty as a topic and not just a policy. If you have questions about academic integrity or intellectual property, you should consult with your instructor. Additionally, consult UConns guidelines for academic integrity: `https://community.uconn.edu/the-student-code-appendix-a`.

- **Students with Disabilities** - The Center for Students with Disabilities (CSD) at UConn provides accommodations and services for qualified students with disabilities. If you have a documented disability for which you wish to request academic accommodations and have not contacted the CSD, please do so as soon as possible. The CSD is located in Wilbur Cross, Room 204 and can be reached at (860) 486-2020 or at csd@uconn.edu. Detailed information regarding the accommodations process is also available on their website at `csd.uconn.edu`.

- **Final Exam Policy** - In accordance with UConn policy, students are required to be available for their final exam and/or complete any assessment during the time stated. If you have a conflict with this time you must obtain official permission to schedule a make-up exam with the Dean of Students; `dos.uconn.edu/reschedule-finals`. If permission is granted, OSSA will notify the instructor. Please note that vacations, previously purchased tickets or reservations, graduations, social events, misreading the assessment schedule, and oversleeping are not viable reasons for rescheduling a final.

| Dates | Book Sections | Topics |
|---|---|---|
| 1/22, 1/24 | 1.1, 1.2 | Systems of linear equations, row reduction, echelon forms |
| 1/27 - 1/31 | 1.3, 1.4, 1.5 | Vector equations, matrix form, solution sets |
| 2/3 - 2/7 | 1.7, 1.8, 1.9 | Linear independence, transformations |
| 2/10 - 2/14 | 2.1, 2.2, 2.3 | Matrix operations, inverse matrices |
| 2/17, 2/19 | 3.1, 3.2 | Determinants and their properties |
| 2/21, 2/24 | from 1.1 to 2.3 | Exam 1 review/catch-up |
| 2/26 | — | **Exam 1** |
| 2/28 | 4.1 | Vector spaces |
| 3/2 - 3/6 | 4.2, 4.3 | Null and column spaces, linear independence, bases |
| 3/9 - 3/13 | 4.4, 4.5, 4.6 | Coordinate systems, dimension, rank |
| 3/16 - 3/20 | — | **Spring break - no class** |
| 3/23 - 3/27 | 5.1, 5.2 | Eigenvectors, eigenvalues, characteristic equation |
| 3/30 - 4/3 | 5.3, 5.4 | Diagonalization, representations of linear transformations |
| 4/6, 4/8 | from 3.1 to 5.2 | Exam 2 review/catch-up |
| 4/10 | — | **Exam 2** |
| 4/13 - 4/17 | 6.1, 6.2, 6.3 | Inner products, orthogonal sets, orthogonal projections |
| 4/20 - 4/24 | 6.4, 6.5 | Gram-Schmidt, QR factorization, least-squares problems |
| 4/27 | 7.1, 7.4 | Light coverage on symmetric matrices and SVD |
| 4/29 , 5/1 | from 1.1 to 6.5 | Final review |
| TBD | — | **Final Exam** |

**HOMEWORK:**

| Book Section | Problems | Due date |
|---|---|---|
| 1.1 | 1, 3, 8, 9, 12, 16, 19, 23 | 1/31 |
| 1.2 | 2, 5, 6, 7, 8, 11, 12, 21 | 1/31 |
| 1.3 | 1, 5, 9, 12, 17, 19, 21, 24, 25 | 2/7 |
| 1.4 | 1, 6, 7, 9, 11, 15, 22, 23 | 2/7 |
| 1.5 | 1, 6, 7, 9, 10, 23 | 2/7 |
| 1.7 | 1, 3, 6, 8, 9, 15, 17, 22, 23, 24, 33, 35, 36 | 2/14 |
| 1.8 | 1, 4, 7, 10, 13, 15, 17, 19, 22, 31, 33 | 2/14 |
| 1.9 | 1, 2, 3, 5, 9, 13, 17, 25 | 2/14 |
| 2.1 | 1, 3, 7, 8, 9, 12, 16, 18, 21 | 2/19 |
| 2.2 | 1, 3, 6, 10, 21, 22, 24, 31, 32 | 2/19 |
| 2.3 | 1, 5, 9, 12, 15 | 2/19 |
| 3.1 | 1, 7, 10, 16, 37, 42 | 2/28 |
| 3.2 | 1, 4, 5, 7, 12, 15, 19, 26, 27, 28 | 2/28 |
| 4.1 | 1, 2, 5, 8, 9, 11, 14, 15, 16, 18, 21, 22, 32 | 3/6 |
| 4.2 | 1, 3, 5, 9, 13, 15, 17, 18, 20, 24, 26 | 3/13 |
| 4.3 | 1, 2, 3, 5, 6, 10, 11, 12, 14, 19, 33, 34 | 3/13 |
| 4.4 | 1, 3, 5, 7, 9, 13, 21, 28 | 3/27 |
| 4.5 | 1, 3, 9, 10, 13, 14, 20, 21, 29, 31 | 3/27 |
| 4.6 | 1, 4, 6, 8, 11, 14, 18 | 3/27 |
| 5.1 | 2, 3, 6, 11, 13, 15, 17, 18, 21, 24 | 4/3 |
| 5.2 | 1, 5, 9, 15, 17, 18, 21 | 4/3 |
| 5.3 | 1, 3, 6, 9, 12, 21, 22, 24 | 4/10 |
| 5.4 | 1, 2, 4, 13, 14, 20 | 4/10 |
| 6.1 | 1, 4, 9, 14, 15, 16, 19, 20 | 4/24 |
| 6.2 | 2, 7, 10, 14, 17, 18, 23, 24 | 4/24 |
| 6.3 | 4, 5, 8, 12, 13 | 4/24 |
| 6.4 | 5, 6, 10, 11 | 5/1 |
| 6.5 | 3, 17, 19, 20 | 5/1 |