Centrally Connecticut State University
Department of Mathematical Sciences
Math 226-03-OL Linear Algebra & Prob/Engineers Spring 2021

Read this syllabus carefully. You are responsible for knowing this information!

Instructor: Luis Recoder-Núñez, Ph.D.
E-mail: recoderl@ccsu.edu
Office Hours: M 1:30-3:00 pm; T 11:00 am-1:30 pm; F 1:30-2:30 pm

Prerequisite: MATH 221 with a grade of C- or higher.


Course Description: Math 226 is a required course for engineering majors. The course will cover topics including linear systems of equations, matrix algebra, determinants, eigenvalues and eigenvectors, probability and statistics, random variables, binomial distribution, Markov chains, normal distribution.

Course Requirements: A general rule for any college course is that you are expected to put at least 2 hours of work outside of class for every hour in class. For Math 226, the expectation is at least 8 hours per week outside of class.

Coverage:

Chapter 1 Linear Equations
1.1 System of Linear Equations
1.2 Row Reduction and Echelon Forms
1.3 Vector Equations
1.4 The Matrix Equation $AX=b$
1.5 Solution Sets of Linear Systems
1.6 Application of Linear Systems
1.7 Linear Independence
1.8 Introduction to Linear Transformations (optional)
1.9 The Matrix of a Linear Transformation (optional)

Chapter 2 Matrix Algebra
2.1 Matrix Operations
2.2 The Inverse of a Matrix
2.3 Characterizations of Invertible Matrices (optional)
2.4 Subspaces of $R^n$
2.9 Dimension and Rank

Chapter 3 Determinants
3.1 Introduction to Determinants
3.2 Properties of Determinants
3.3 Cramer’s Rule, Volume and Linear Transformation

Chapter 5 Eigenvalues and Eigenvectors
5.1 Eigenvectors and Eigenvalues
5.2 The Characteristic Equation
5.3 Diagonalization (optional)

Chapter 8  Introduction to Probability and Statistics
  8.1 Basic Counting Principle and Permutation
  8.2 Combinations and Other Counting Principles
  8.3 Sample Space and Events
  8.4 Probability
  8.5 Conditional Probability and Stochastic Processes
  8.6 Independent Events
  8.7 Bayes’s Formula (optional)

Chapter 9  Additional Topics in Probability
  9.1 Discrete Random Variable and Expected Value
  9.2 The Binomial Distribution
  9.3 Markov Chains (optional)

Chapter 16  Continuous Random Variables
  16.1 Continuous Random Variables
  16.2 The Binomial Distribution
  16.3 The Normal Approximation to Binomial Distribution
Homework: Homework assignments will be posted on MyMathLab at the end of every class. It is strongly recommended that the homework assigned on a given week be completed by Tuesday of the following week. However, the deadline to do all the assignments for this course is the day of the final exam.

Resources Available:

1. If you have difficulties in solving the problems, you are strongly encouraged to make an appointment with me to address your questions. Do not wait until just before the first test to do so.
2. Free tutoring is available in The Learning Center which is located in Diloretto D-316. A schedule for hours the Center is open will be posted soon after the beginning of the summer session.
3. Form a study group with other students in your section. Explaining solutions to homework problems to each other is a good way to learn.
4. A list of private tutors for hire is available in the math department office, Room 128 Marcus White, (860) 832-2835.

University Policies:

1. You must take the final examination at the time specified in the course selection book: Tuesday, May 11, 2021 from 7:45pm to 9:45pm.

2. Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex, (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns about this should contact the Office of Equity & Inclusion at 860-832-1652, Student Affairs at 860-832-1601, or his/her faculty member. The Office of Equity & Inclusion is located in Davidson Hall, Room 102.

3. Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services in order to arrange your class accommodations. Contact Stephanie Scapeccia in Student Disability Services at: (860) 832-1952, Willard W-201, if you are not already registered with them. Student Disability Services maintains the confidential documentation of your disability and assists you in coordinating reasonable accommodations with faculty.

4. Central Connecticut State University (CCSU) will not tolerate sexual misconduct against students, staff, faculty, or visitors in any form, including but not limited to: sexual assault, sexual exploitation, sexual harassment or stalking, as defined in CCSU policies. For additional information, please consult the CCSU policies at http://www.ccsu.edu/diversity/policies/index.html.

To file a report, contact: The Office of Equity & Inclusion (860-832-1652); Student Affairs (860-832-1601); Student Conduct (860-832-1667) or the University Police (860-832-2375).

For support and advocacy, contact: Office of Victim Advocacy & Violence Prevention (Diloretto D-305) at 860-832-3795 to speak with Joanna Flanagan mailto: (jflanagan@ccsu.edu); Student Wellness Services at 860-832-1945 (confidential), the Women’s Center at 860-832-1655, the local YWCA’s Sexual
Assault Crisis Services Hotline at 860-223-1787 (confidential) and Prudence Crandall Center for Domestic Violence (confidential) at 888-774-2900 (24-hour hotline).

5. All students are expected to demonstrate integrity in the completion of their coursework. Academic integrity means doing one’s own work and giving proper credit to the work and ideas of others. It is the responsibility of each student to become familiar with what constitutes academic dishonesty and plagiarism and to avoid all forms of cheating and plagiarism. Students who engage in plagiarism and other forms of academic misconduct will face academic and possibly disciplinary consequences. Academic sanctions can range from a reduced grade for the assignment to a failing grade for the course. From a disciplinary standpoint, an Academic Misconduct Report may be filed and a Faculty Hearing Board may impose sanctions such as probation, suspension or expulsion.

For further information on academic misconduct and its consequences, please consult the Student Code of Conduct (http://www.ccsu.edu/StudentConduct/codeofconduct.asp) and the Academic Misconduct Policy (http://www.ccsu.edu/AcademicIntegrity/).

6. In the event of a weather emergency which requires curtailment or cancellation of classes, listen to WTIC (1080 AM) or call (860) 832-3333 for the “general snow message.”

7. The last day to withdraw from a course without instructor approval is Monday, April 19th. It is strongly recommended that students consult with their academic advisors prior to deciding to withdraw. Cessation of attendance, notice to the instructor, or telephone calls to the Registrar’s Office are not considered official notice of a student’s intention to drop the course. After April 19th, withdrawals are allowed only under extenuating circumstances and require approval of the course instructor and department chair (in that order).

**Exams:** There will be three non-cumulative tests and a Final cumulative test given on **Tuesday, February 23, 2021; Thursday, April 1, 2021; Thursday, April 29, 2021; Tuesday, May 11, 2021** respectively. The final exam will be from 7:45 pm-9:45 pm.

**Quizzes:** There will be three online quizzes on the following tentative days: **Tuesday, February 16, 2021; Thursday, March 18, 2021; Tuesday, April 20, 2021.**

**Grading:** Your grade for the course will be computed as follows: Three partial exams **55 %**, final exam **20 %**, quizzes **15%**, Homework **10%**.

Minimum averages for your final grade are indicated below.
A 93%, A- 90%, B+ 87%, B 83%, B- 80%, C+ 77%, C 73%, C- 70%, D+ 67%, D 63%, D- 60%. 
Online tutoring:

For online peer tutoring instructions, please visit this video link: https://www.youtube.com/watch?v=RhAlPUNdUq4

On campus tutoring:

Spring 2021 TLC Peer Tutoring Drop-In Hours
(For the most current hours please visit our webpage at https://web.ccsu.edu/tlc/tutoring/default.asp)

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To register for Math 226-03:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor’s course ID: recoder75086, and Continue.
5. Enter your existing Pearson account username and password to Sign In.
   You have an account if you have ever used a MyLab or Mastering product.
   » If you don’t have an account, select Create and complete the required fields.
6. Select an access option.
   » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
   » If available for your course,
     • Buy access using a credit card or PayPal.
     • Get temporary access.
   If you're taking another semester of a course, you skip this step.
7. From the You’re Done! page, select Go To My Courses.
8. On the My Courses page, select the course name Math 226-03 to start your work.

To sign in later:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select the course name Math 226-03 to start your work.

To upgrade temporary access to full access:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select Upgrade access for Math 226-03.
5. Enter an access code or buy access with a credit card or PayPal.