

## Math 2318.032 HY – Linear Algebra Hybrid

### Course Syllabus: Fall 2024

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*“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”*

**Instructor: Dr. Doug Richey**

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	9:00 – 10:50	9:00 – 10:50	9:00 – 10:50	9:00 – 12:20 1:30 – 3:00	Online, TEAMS or Appointment	Everyday

***This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.***

*Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.*

**Course Description:** Introduces and provides models for application of the concepts of vector algebra. Topics include finite dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvector; and applications in science and engineering. Three hours credit.

**Prerequisite(s):** MATH 2414 or equivalent with a grade of “C” or better

#### **Student Learning Outcomes:**

2318.1 Be able to solve systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion.

2318.2 Be able to carry out matrix operations, including inverses and determinants.

2318.3 Demonstrate understanding of the concepts of vector space and subspace.

2318.4 Demonstrate understanding of linear independence, span, and basis.

2318.5 Be able to determine eigenvalues and eigenvectors and solve problems involving eigenvalues.

2318.6 Apply principles of matrix algebra to linear transformations.

2318.7 Demonstrate application of inner products and associated norms.

#### **Program Student Learning Outcomes:**

### Critical Thinking Skills

CT.1 Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

### Communication Skills

CS.1 Students will effectively develop, interpret and express ideas through written communication.

### Empirical and Quantitative Skills

EQS.1 Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form

EQS.2 Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

EQS.3 Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

**Evaluation/Grading Policy:** Two major 150 point examinations, a midterm and a final, will be given to comprise 75% of the final grade. The average of a series of special assignments, online engagements, and homework exercises totaling 100 points will be worth 25% of the final grade.

2 Major Exams	75%
Weekly Grade	25%
TOTAL	100%

Make-up exams will not be given unless the student has coordinated with the instructor at least two days prior to the exam. Late work will incur a penalty of 10 points per day for whatever reason for the absence, unless otherwise indicated by the instructor.

#### Grading System

"A"	90-100%
"B"	80-89%
"C"	70-79%
"D"	60-69%
"F"	< 60%

**Required Instructional Materials: Elementary Linear Algebra; Ron Larson**

**Publisher: Cengage      ISBN Number:13:978-1-305-65800-4**

**Optional Instructional Materials: None**

**Minimum Technology Requirements: TI-83/84/Inspire suggested**

**Required Computer Literacy Skills:** As an online student you will have a much different

"classroom" experience than a traditional student. To ensure that you are fully prepared for your online courses, following is a list of expectations and requirements: Students in a hybrid and/or on-line program should be comfortable with and possess the following skill sets:

1. Self-discipline
2. Problem solving skills
3. Critical thinking skills
4. Enjoy communication in the written word

As part of your online experience, you can expect to utilize a variety of technology mediums as part of your curriculum:

1. Communicate via email including sending attachments
2. Navigate the World Wide Web using a Web browser such as Internet Explorer
3. Use office applications such as Microsoft Office (or similar) to create documents
4. Be willing to learn how to communicate using a discussion board and upload assignments to a classroom Web site
5. Be comfortable uploading and downloading saved files
6. Have easy access to the Internet
7. Navigate Blackboard, including using the email component within Blackboard. Instructions and tutorials for this are provided in your course.

For more information or technical assistance on using the Learning Management System, please refer to the Home Page, Orientation Module, in the important technical requirement, information and support folder in Blackboard.

#### Course Structure and Overview:

This is a hybrid learning course that is part face to face and part online. It is identical to classroom courses in terms of learner outcomes, course objectives and instructor expectations. A student desiring to enroll for this course should possess the following: Access to the internet, an e-mail address, a general knowledge of browser settings, file attachments, uploading and downloading files, word processing packages, the ability to conduct on-line research and learn independently and the initiative to use Blackboard discussion board, chat and email.

Communications: Emails will be responded to with 24 hours. If you do not receive a response within 24 hours, then the email was not received. Posts in the Discussion Forum "Questions, Comments, and/or Concerns?" will be monitored by the instructor. Responses by the instructor will be within 72 hours of post. Students are expected to abide by Netiquette rules when communicating online. See this link for details: [Netiquette Rules](#).

**Institutional/Course Policy:** Cell phone usage in the classroom will be coordinated by the professor. Students will be warned when using a phone inappropriately. A student will be removed from class if any disruption continues.

The college's official means of communication is via your campus email address. I will use your campus email address and Blackboard to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.

Students are expected to be respectful toward classmates and professor at all times!

#### **Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

### **NTCC Academic Honesty/Ethics Statement:**

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

### **ADA Statement:**

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

### **Family Educational Rights and Privacy Act (FERPA):**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**Tentative Course Timeline (\*note\* instructor reserves the right to make adjustments to this timeline at any point in the term):** Include a course outline that lists all assignments (i.e. by week and/or chapter), due dates, test dates, notable college dates, and any other information important to the course. For hybrid courses, also note what will be completed in class versus online. It is strongly suggested that you include the date of graduation for students to see.