



## ENGR 1201 001 – Introduction to Engineering

Course Syllabus: Fall 2026

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

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| Weekday   | Office Hours               |
|-----------|----------------------------|
| Monday    | 10:00 – 12:30, 2:00 – 5:00 |
| Tuesday   | 2:00 – 3:00                |
| Wednesday | 10:00 – 12:30, 2:00 – 3:00 |
| Thursday  | By appointment             |
| Friday    | By appointment             |

**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:

This course is an introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Two hours college credit.

Prerequisite(s): TSI Complete Status

### Student Learning Outcomes:

- 1201.1. Describe the engineering profession and engineering ethics including professional practice and licensure.
- 1201.2. Use technical communication skills to explain the analysis and the results of laboratory exercises in engineering and computer science.
- 1201.3. Explain the engineering analysis and design process.
- 1201.4. Analyze data collected during laboratory exercises designed to expose students to the different engineering disciplines.
- 1201.5. Describe the impact that engineering has had on the modern world.
- 1201.6. As part of a team, design a simple engineering device, write a design report, and present the design.
- 1201.7. Demonstrate computer literacy.

## **Core Curriculum Purpose and Objectives:**

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.

Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

## **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.

### Teamwork

TW.2 Students will work with others to support and accomplish a shared goal.

## **Evaluation/Grading Policy:**

*The breakdown of the course requirements is as follows:*

| <b>%</b> | <b>Requirement</b>                      |
|----------|-----------------------------------------|
| 45%      | Exams (3 @ 15% each)                    |
| 15%      | Quizzes/Homework (17 @ 1% each, drop 2) |
| 10%      | Engineering Paper & Presentation        |
| 5%       | Small in-class projects                 |
| 10%      | Bridge Project                          |
| 15%      | Team Project                            |

*Semester grades will be earned as follows*

| <b>Percentage</b> | <b>Letter Grade</b> |
|-------------------|---------------------|
| 90% and above     | A                   |
| 80 %–89%          | B                   |
| 70 %–79%          | C                   |
| 60%–69 %          | D                   |
| 59.9% and below   | F                   |

This is a *hybrid* course, so there is a mix of online and in-class instruction. You will have lecture for two hours each week and online learning for two hours each week. This does not include time spent on homework.

**Tests/Exams:**

Exam 1: Chapters 1-5

Exam 2: Chapters 6-8, 10

Exam 3: Chapters 14, 16, 20

FINAL EXAM: Cumulative

**Required Instructional Materials:**

*Engineering Fundamentals: An Introduction to Engineering*, 5<sup>th</sup> ed. by Moaveni

**Publisher:** Cengage Learning

**ISBN Number:** 9781305084766

**Scientific Calculator****Optional Instructional Materials:**

None

**Minimum Technology Requirements:**

Scientific Calculator

**Required Computer Literacy Skills:**

Access to Blackboard and McGraw-Hill Connect to complete all assignments and tests.

**Course Structure and Overview:**

Students will be responsible for completing the reading assignments listed in the syllabus schedule to perform well on the homework, quizzes, and exams. Discussion assignments are made to assist in critical thinking and connecting individual facts to make a more complete concept.

## **Communications:**

Blackboard Course Messages and NTCC Teams messages are the only recognized methods of communication. Messages will be responded to within 24 hours IF SENT SUNDAY-THURSDAY. Any information that I send out will be done via Blackboard. I will NOT email sensitive information to a non-NTCC address.

## **Institutional/Course Policy:**

Due to the short timeline of the course, late work will be accepted or denied on a case by case basis. Quizzes and Tests will not be accepted late without prior approval by the instructor. Students and instructor are expected to treat each other with respect in all communication (email, phone call, and discussion board).

## **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.

## **Statement Regarding the Use of Artificial Intelligence (AI) Technology:**

Employees and students shall be permitted to explore artificial intelligence (AI) and implement its use in and out of the classroom in accordance with policy and administrative regulations. The use of AI shall only be as a support tool to enhance student outcomes or as necessary to engage in research and shall never take the place of faculty, staff, and student decision-making. Any use of AI must comply with law, policy, and administrative regulations relating to student and employee privacy and data security. A student shall only use AI tools with faculty permission and shall be expected to produce original work and properly credit sources, including AI tools used in creating the work.

Example:

APA (7th edition)

OpenAI. (2026). ChatGPT (March 25 version) [Large language model]. <https://chat.openai.com/>

MLA (9th edition)

OpenAI. ChatGPT. 25 Mar. 2026, <https://chat.openai.com/>.

Employees or students who use AI tools to deceptively harm, bully, or harass others shall be disciplined in accordance with policy. [See DH, DIA series, FFD series, FFE, FLB, and the FM series] AI Use by Employees and Students. Northeast Texas Community College 225500 TECHNOLOGY RESOURCES CRB ARTIFICIAL INTELLIGENCE (LOCAL) DATE ISSUED: 12/8/2025 1 of 1 UPDATE 50 CRB(LOCAL)-AJC Adopted: 12/16/2025

### **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 accommodation 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 accommodation as required to afford equal educational opportunity. It is the student's responsibility to request accommodation. 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 Schedule:

| Chapter | Title                                                                                                       | Week |
|---------|-------------------------------------------------------------------------------------------------------------|------|
|         | Course Introduction                                                                                         | 1    |
| 1       | Introduction to the Engineering Profession                                                                  | 2    |
| 2       | Preparing for an Engineering Career                                                                         | 3    |
| 3       | Introduction to Engineering Design                                                                          | 4    |
| 4       | Engineering Communication                                                                                   | 5    |
| 5       | Engineering Ethics                                                                                          | 6    |
|         | <b>Exam 1</b>                                                                                               | 7    |
| 6/7     | Fundamental Dimensions and Units / Length and Length-Related Variables in Engineering (Assign Team Project) | 8    |
| 8       | Time and Time-Related Variables in Engineering                                                              | 9    |
| 10      | Force and Force-Related Variables in Engineering                                                            | 10   |
|         | <b>Exam 2</b>                                                                                               | 11   |
|         | Bridge Design Project                                                                                       | 11   |
|         | Bridge Design Project (continued)                                                                           | 12   |
| 14      | Computational Engineering Tools Electronic Spreadsheets                                                     | 13   |
| 20      | Engineering Economics                                                                                       | 14   |
| 16      | Engineering Drawings and Symbols / Team Project Presentations / Review for Final Exam                       | 15   |
|         | <b>Final Exam</b>                                                                                           | 16   |