SYLLABUS

Engineering Materials Laboratory

ENGR 3450-Labsection

FALL 2025

**Laboratory Instructor:**

Dan Nguyen, CSWA, Ph.D. Candidate, Department of Mechanical Engineering

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Available Office Hours: In person office hours: TBD; Meeting can be also schedule by zoom on Mondays, Time: TBD

**Brief Description:**

The purpose of this laboratory is to give students practical experience in materials engineering through hands-on experiments, data acquisition and analysis, technical report writing, and oral presentations.

**Course Materials:**

There is no textbook required for this laboratory. Handouts will be posted on the UNT Canvas website website <https://unt.instructure.com/> throughout the semester. Students are expected to read the materials, including safety rules and guidelines for laboratory reports, before attending each lab session. A printed copy of the lab handout will be provided by the instructor during the lab session.

References:

1. *Metals Handbook*, ASM International, Materials Park, Ohio. (Available online through UNT library)
2. Annual Books of ASTM on Materials Testing. (Available online through UNT library)
3. Textbook for ENGR 3450-Materilas Engineering course.

**Laboratory Guidelines**

1. Overview:
* **Laboratory guidelines** will be posted by the lab instructor on the UNT Canvas website during the first week of class.
* Students must **review** the provided materials before attending each lab session.
* Students are expected to take notes during lectures as part of their responsibility for active learning and course success.
1. Laboratory Reports:
2. *Technical lab written reports:*
* One main guideline and one grading rubric are provided to assist students in completing their individual lab reports.
* The lab report structure will remain consistent throughout the semester; students must follow the provided rubric to receive full credit.
* High-quality writing is essential and required to earn full credit on each lab report.
1. *Team Formation:*
* **Students will submit individual laboratory reports for each lab session. Group submissions are no longer required or accepted.**
* **Each student is responsible for completing and submitting their own report according to the posted weekly instructions on Canvas.**

**Evaluation and Grading Policy:**

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| **Attendance** | **10%** |
| **Laboratory report** | **50%** |
| **Lab Quiz 1** | **20%** |
| **Lab Quiz 2** | **20%** |
| **Total** | **100%** |

**Course Policies**

1. *Class Attendance*: Attendance during scheduled lab hours is **mandatory**. Punctuality is expected.
2. *Dress Code*: Long pants, half or full long sleeve shirt. If students do not dress correctly, the instructor will remove the students from the lab room.
3. *Late Submissions*: Late submission of lab assignments will result in grade deductions. **A 50% deduction** will be applied for submissions within 24 hours after the due time, and **a 100% deduction** will be applied for submissions beyond 24 hours.
4. *Attendance*: Students will lose attendance grade if they are absent. No excuses needed, unless University excuses.
5. *University Excuses*: University-excused absences must be submitted to the instructor **at least one week** in advance of the scheduled absent day(s).
6. *Makeup Policy*: There will be **NO makeup opportunities** for missed quizzes, assignments, or lab experiments/reports on days when attendance was not recorded.
7. *Lab Etiquette*: Consumption of food and beverages **is strictly prohibited** during laboratory sessions.
8. This syllabus is subject to change at any time during the semester with changes to be announced during the class hours and will be posted on Blackboard.
9. Cell phones, iPhones, iPods, iPads, laptops **must be turned off or in silent mode** before the start of the class and left in your pocket, purse, or book bag. Cell phones and other electronic devices **are not allowed** during quizzes or examinations. Only permitted calculators are allowed.
10. *Dishonesty*: The UNT Catalog procedures on cheating and plagiarism will be vigorously enforced. It is the duty of each student to protect their work, so it is not available to others for submission as their efforts. This is especially true of files that are generated on the computer. Students that knowingly allow others to use their work are partners in this unethical behavior. All rules relating to academic dishonesty will be enforced in accordance with university policies.
11. *Distribution of Course materials*: State common law and federal copyright laws protect this course lectures and materials. They have my own original expression and revisions to the textbook author(s) and I record them at the same time that I deliver. Whereas you are authorized to take notes in class, thereby creating a derivative work from my lecture, and/or make a print of my lecture notes/slides. The authorization extends only to making one set of notes for your own personal use and no other use. You are not authorized to record my lectures, to provide your notes to anyone else or to make any commercial use of them without express prior permission from me.
12. *Absence for Religious Holidays*: In accordance with state law, a student absent due to the observance of a religious holiday may take examinations or complete assignments scheduled for the day(s) missed, including those missed for travel, within a reasonable time after the absence. The student is responsible to notify the instructor of each class of the date of the anticipated absence as early in the semester as possible. Only holidays or holy days observed by a religion whose place of worship is exempt from property taxation under Section 11.20 of the Tax Code may be included. A student who is excused under this provision may not be penalized for the absence.
13. *Student Perceptions of Teaching (SPOT)* is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SPOT to be an important part of your participation in this class.

**DISABILITIES ACCOMODATION**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at http://www.unt.edu/oda. You may also contact them by phone at 940.565.4323.

**CLASS POLICY ON DISCRIMINATION AND RELATED ACTS**

***Non-Discrimination:*** This class is open to all individuals regardless of their race, color, religion, gender, gender identity or expression, sexual orientation, national origin, disability, or any other protected status under applicable laws.

***Respectful Conduct:*** All students and the instructor are expected to engage in respectful conduct towards one another. Discriminatory language, actions, or behaviors that create a hostile or offensive environment are strictly prohibited.

***Reporting Discrimination:*** Any student who believes they have experienced or witnessed discrimination, harassment, or related acts within the class should report it promptly to the instructor. The instructor is committed to addressing such concerns discreetly and promptly.

***Investigation:*** Upon receiving a report of discrimination or related acts, the instructor will conduct a thorough and impartial investigation. The confidentiality of all parties involved will be respected to the extent possible while conducting a fair investigation.

***Consequences:*** Engaging in discriminatory acts, harassment, or related behaviors may result in consequences such as warnings, removal from the class discussion, or other appropriate disciplinary actions. The severity of the consequences will depend on the nature and severity of the violation.

***Appeals:*** Students who are subject to disciplinary actions have the right to appeal the decision, following the established procedures outlined in the class syllabus or institutional policies.

**ENGR 3450: Engineering Materials**

**FALL 2025**

**Weekly Schedule**

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| **Weeks** | **Labortory Title** |
| **Week 1****(8/18-8/22)** | **Introduction/ Laboratory safety rule/ Writing training** |
| **Week 2****(8/25-8/29)** | **X-ray Difraction (XRD) Demonstration**  |
| **Week 3****(9/1-9/5)** | **Metallography I** |
| **Week 4****(9/8-9/12)** | **Metallography II** |
| **Week 5****(9/15-9/19)** | **Hardness test** |
| **Week 6****(9/22-9/26)** | **Tensile Test** |
| **Week 7****(9/29-10/3)** | **Quiz Lab 1** |
| **Week 8****(10/6-10/10)** | **Age Hardening of Aluminum alloy** |
| **Week 9****(10/13-10/17)** | **Impact Testing** |
| **Week 10****(10/20-10/24)** | **JOMINY QUENCH TEST (PART 1)** |
| **Week 11****(10/27-10/31)** | **JOMINY QUENCH TEST (PART 2)** |
| **Week 12****(11/3-11/7)** | **Corrosion Test**  |
| **Week 13****(11/10-11/14)** | **Failure Analysis/Scanning Electron Microscope** |
| **Week 11****(11/17-11/21)** | **Quiz Lab 2** |
| **Week 11****(11/24-11/28)** | **Thankgiving week (NO LAB)** |