

**Syllabus****Fall 2024**

**LECTURE:** Tu & Th 11:00 AM – 12:20 PM, Lincoln Hall 1092.  
**LAB:** 201 Talbot Lab

**OFFICE; EMAIL:** 4414 MEL; [lilicai@illinois.edu](mailto:lilicai@illinois.edu)

**OFFICE HOURS:** Tue 1:30 – 2:30 PM on Zoom or by appointment  
<https://illinois.zoom.us/j/82505814493?pwd=R1VJMG5tZnBBZFFtNkIrb0NDNWtoUT09>  
 Meeting ID: 825 0581 4493, Password: 359517

<b>GRADING:</b>	In-Class Assignments	2%
	Midterm Exam 1	20%
	Midterm Exam 2	20%
	Final exam	30%
	Laboratory Reports	30%

Letter grades are assigned according to the following scale:

97% ≤ A+ ≤ 100%	93% ≤ A < 97%	90% ≤ A- < 93%
87% ≤ B+ < 90%	83% ≤ B < 87%	80% ≤ B- < 83%
77% ≤ C+ < 80%	73% ≤ C < 77%	70% ≤ C- < 73%
67% ≤ D+ < 70%	63% ≤ D < 67%	60% ≤ D- < 63%
	00% ≤ F < 60%	

**WEBSITE:** All course info (lecture notes, lab manual & questions, etc.) will be posted at:  
<https://canvas.illinois.edu/courses/51143>.

**TEXTBOOK:** W.D. Callister and D.G. Rethwisch, “Materials Science and Engineering, An Introduction,” 10<sup>th</sup> Edition, Wiley, 2018.

**PARTICIPATION:** Class attendance and participation are required. You will have at least one in-class assignment each week due in class.

**EXAMS (3):** The **Midterm Exam 1** will be **Tuesday, Oct 1, 11am-12:20pm**. The **Midterm Exam 2** will be **Tuesday, Nov 12, 11am-12:20pm**. The **Final** is **Friday, Dec 13, 8-11am**. Mark your calendars!

**LAB (11):** You will submit an electronic copy of your lab reports (doc or pdf files; before your lab section begins) via Canvas. The labs are a critical part of the course. You must read the lab manual prior to each lab in preparation for the weekly quiz and bring the manual with you to lab. Check the schedule for specific lab report format that is to be followed for each week. These formats vary from week to week. You are responsible for the content of the lab manuals and the policy documents. **You cannot participate in the Lab Sections without safety glasses and your own lab notebook.** You must bring your own. SEE LAB POLICIES FOR MORE DETAIL.

**OBJECTIVES:** The basic structure of polymers, metals and ceramics is utilized to explain similarities and differences in their mechanical behavior. Changes in properties by manipulation of structure through processes such as heat treatment and solidification are introduced. Different mechanisms of material failure in service (yielding, fracture, fatigue, creep, corrosion, wear) are related to design algorithms.

*General Rules:*

- 1) Class and laboratory attendance and participation are required. Most, but not all of the material is covered in the text. Absence is not an excuse for missing class and laboratory announcements or assignments. You should expect to spend 8 to 12 hours outside of class per week on laboratory reports and preparation for in-class assignments and exams. See lab policies for specifics relating to the laboratories.
- 2) At least one In-Class Assignment will be completed and turned in during class each week. **There are no make-up assignments.**
- 3) Homework will be assigned every week. However, homework will not be collected or graded.
- 4) You must attend your assigned laboratory section. Only up to 20 students are allowed in the lab at a time. This is due to safety considerations and the desire to provide a "hands-on" laboratory experience in which students work in small groups. You are expected to have read the material pertaining to the lab before attending your session. **You may not be late to the lab due to safety concerns.**
- 5) There will be quizzes at the start of the lab section on the material in the previous or current laboratory (worth up to 10% of that lab grade). You must read the lab manual before coming to the lab. The quiz may be an examination of the state of your lab notebook. Please refer to the document *Maintaining an Engineering Notebook*.
- 6) Laboratory Reports are due at the beginning of your lab section and are otherwise considered to be late. All lab reports must be completed and turned in, but your lowest lab grade will be dropped. Lab 0 report is weighted half of the other lab reports. *Late laboratory reports will receive penalty as described in lab policies document.* You cannot drop a lab report grade for a lab report you did not submit or that you submitted late. You must submit an electronic copy to Canvas (doc or pdf files). See lab policies document for more details.
- 7) The Midterm Exams and the Final Exam will be open notes (up to 5 pages, double-sided). Mark the dates on your calendar now.
- 8) You must provide official documentation on exam conflicts to the instructor at least a week before the exam date. Example official documentation includes the absence letter from the Office of the Dean of Students, see <https://odos.illinois.edu/community-of-care/resources/students/absence-letters/>. You must email the documentation to your instructor. Any excused make-up exams will be scheduled prior to the regular exam date unless extenuating circumstances arise. Judgement of such circumstances is at the discretion of the instructor.
- 9) The results of the midterm exams will be returned within 2 weeks. Laboratory reports/quizzes will be returned at the next lab session. We will not hold anything for more than 2 weeks, it is your responsibility to pick up your graded material.
- 10) Any discussion of grading will be handled by the primary lecturer (i.e., Prof. Cai). **There is a 2-week limit on grade discussions.** There will be no discussions after the graded item after two weeks from when it was returned to the class.
- 11) All graded work is an individual effort (laboratory reports, independent in-class assignments, and exams). "Working together" or "studying together" is not an acceptable excuse for plagiarism or cheating. This offense, when detected, will be dealt with severely.
- 12) *All students are responsible for knowing and understanding the University policies on academic integrity (see [studentcode.illinois.edu](http://studentcode.illinois.edu)).*