# ENG 45: Properties of Materials DRAFT COURSE SYLLABUS - Spring 2023

Instructor:	Professor Yayoi Takamura email: ytakamura @ ucdavis.edu Office: Kemper 2015 Office hours: W 9:00-10am, or by appo	pintment
Teaching Assistants:	Name: Surya Teja Botu email: sbotu @ ucdavis.edu Name: Toulik Maitra	Name: Mingzhen Feng mzfeng @ ucdavis.edu Name: Mst Sharmin Mostari
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TA Office Hours:	T: 2-3 pm; R 10-11am; R 12:30-1:30pr	n; F 1-2pm All in Kemper 2051
Course Times:	InterviewInsection:	
	Labs: M 4:10-7:00pm; W 4:10-7:00pm; F 1:10-4:00pm; F 4:10-7:00pm	
	The lab experiments will be performed in Kemper 163 (in the basemen section of 32 students will be subdivided into four Sub-Groups so that than eight students are running experiments at a given time.	
<ul> <li>Lab Group A1: Week 1 from 4:10-5:30pm (or F 1:10-2</li> <li>Lab Group A2: Week 1 from 5:40-7:00pm (or F 2:40-4</li> <li>Lab Group B1: Week 2 from 4:10-5:30pm (or F 1:10-2</li> <li>Lab Group B2: Week 2 from 5:40-7:00pm (or F 2:40-4</li> <li>Lab Group/Sub-Group assignments will be made in Canvas week of class. Be kind to the TAs and attend only the Lab been assigned.</li> </ul>		<ul> <li>-5:30pm (or F 1:10-2:30pm)</li> <li>-7:00pm (or F 2:40-4:00pm)</li> <li>-5:30pm (or F 1:10-2:30pm)</li> <li>-7:00pm (or F 2:40-4:00pm)</li> <li>Il be made in Canvas by the end of the first</li> <li>I attend only the Lab Group that you have</li> </ul>
	<ul> <li>You must complete a lab quiz BEFORE attending each lab to ensure that you have watched in the lab discussion video and come to lab prepared.</li> <li>Labs 2 and 4 will have a prelab assignment to give you practice doing the calculations for each lab before the lab reports are due.</li> </ul>	
	• Each lab write-up will provide yo	ou with specific questions that should be
Announcements:	Important class announcements will b consult material available for this <u>ANNOUNCEMENTS REGULARLY</u> receive alerts/emails when new information	be made via the course Canvas site. Only offering of ENG 45. <u><b>READ CANVAS</b></u> <u>!</u> You can set Canvas notifications to ation is posted.

Textbook:	Introduction to Materials Science for Engineers, 8 <sup>th</sup> Shackelford, Pearson, ISBN-13: 978-0133826654/97801	or 9 <sup>th</sup> editions, James 36912453	
	James Shackelford is an emeritus professor in the Departr and Engineering at UC Davis and has been known to ma class.	nent of Materials Science ke cameo appearances in	
	Check the Reading List and Bookshelf sections of the Canvas site for electronic access to the textbook. The 7 <sup>th</sup> edition of the textbook is also likely an acceptable option.		
	Additional extracurricular reading will be available throu Canvas site.	gh the Files section of the	
Prerequisites:	Grade of C- or better in Math 16C or 21C, grade of C- or better in Chem 2A and Phys 9A		
<u>Grading</u> :	Homework (~6 assignments – due Wednesdays)	30%	
	Quizzes (random – via Canvas)	10%	
	4 lab reports/2 Prelabs/2 lab quizzes	25%	
	Midterm 1 (Friday, 4/28 – in class)	10%	
	Midterm 2 (Friday, 5/19 – in class)	10%	
	Final Exam (Thursday, 6/15 at 8am)	15%	

**NOTE**: <u>A passing grade for the Lab section is necessary to obtain a passing grade for the overall course</u>.

The grades may be curved up (otherwise grades will be assigned according to point values), and lab scores may be renormalized to account for the difference in TA grade distributions. Regrade requests for homework and extended homework must be submitted within one week of the release of the grades for each assignment.

## Course Policies:

- Lecture quizzes will be administered through the Quizzes section of the Canvas site and are designed to keep you on track for watching the lectures following the course schedule. They will be scheduled randomly throughout the quarter. They will be based on the material for a given lecture and you will have until the scheduled start time of the next lecture to complete the quiz (i.e., > 47 hours). You will be able to drop the scores of two quizzes.
- 2. Lab quizzes will be administered through the Quizzes section of the Canvas site and are designed to ensure that you have watched in the lab discussion video and come to lab prepared.
- 3. **Homework** will be due at 11:00 pm on the specified due date and submitted electronically to Canvas. LATE homework will be accepted withing 24 hours of the due date with a 30% penalty calculated based on the point total of the assignment. After 24 hours, late homework will NOT be accepted. Canvas automatically timestamps the submission time. It is your responsibility to ensure that you upload the correct file and that all the pages are legible.
- 4. Lab reports and PreLabs must be handed in electronically to Canvas by 11:00 pm on the specified due date. LATE lab reports will be accepted within 24 hours of the due date with a 30% penalty calculated based on the point total of the assignment. After 24 hours, late labs will NOT be accepted. Canvas automatically timestamps the submission time. It is your responsibility to ensure that you upload the correct file and that all the pages are legible.
- 5. **Exams** will be closed book, closed notes, but you will be allowed one 8 ½ x 11 cheat sheet (single sided) for each of the midterm exams and three 8 ½ x 11 cheat sheets (single sided) for the final exam. The material on the final exam will be cumulative.
- 6. You may discuss homework, extended homework, prelabs, and lab reports with other students, but submitted work must be your own.

7. The UC Davis Code of Academic Conduct will be strictly enforced (see <u>https://ossja.ucdavis.edu/code-academic-conduct</u>) and it is expected that students will abide by the UC Davis Principles of Community (see <u>https://diversity.ucdavis.edu/principles-community</u>). These policies include following proper etiquette while participating in/viewing Zoom lectures/office hours, for the take home final exam, as well as sharing course materials on other websites (i.e., CourseHero).

The Academic Assistance and Tutoring Centers hosts Writing Support Center Services (see https://tutoring.ucdavis.edu/writing) and the Aggie Grammar Guide (see https://tutoring.ucdavis.edu/agg) which you may find useful when writing lab reports.

# **Online Submission Guidelines**

- Save your homework files with clear names including your name, the class name, and assignment name (i.e., ENG45\_HW1\_YOUR NAME).
- Please do not upload \*.HEIC files as they can't be opened in Canvas.
- For Lab reports, file types will be restricted to \*.pdf (preferred) and \*.docx formats.
- Allow plenty of time before the submission deadline for internet or Canvas connectivity issues.
- Double-check your submission *every time* to make sure the correct submission was posted without file corruption.
- For questions involving images that I provided, you can screen capture the image and mark your answers electronically using programs such as Word, PowerPoint, or Paint.

## **Use of Plotting Software**

The PreLabs, Lab reports, and several homework will require the use of plotting software to calculate equations, plot data, perform a line fit, and calculate the area under a curve. No specifications of any particular software will be made, but options include Excel, Matlab, Python, Origin, etc... An optional Excel Bootcamp exercise will be available to denote minimum Excel knowledge needed for this class and will be discussed during Study Hall on Tuesday, 4/4. Note that Office 365 is available for all UC Davis students <a href="https://iet.ucdavis.edu/content/free-microsoft-office-365-now-available-all-uc-davis-students">https://iet.ucdavis.edu/content/free-microsoft-office-365-now-available-all-uc-davis-students</a>

## **Student Resources**

Prof. Susan Ebeler has compiled an extensive list of valuable student resources at: https://ebeler.faculty.ucdavis.edu/resources/faq-student-resources/

## **Plagiarism Statement**

According to Dictionary.com, plagiarism is defined as: "1: an act or instance of using or closely imitating the language and thoughts of another author without authorization and the representation of that author's work as one's own, as by not crediting the original author".

DON'T DO IT! In this course, we will use TurnItIn, an electronic resource that compares your work to online sources and a comprehensive database of other papers for the lab reports. TurnItIn creates an originality report identifying whether parts of your work match or are similar to any of their sources. The work submitted to TurnItIn will be retained as source documents in the TurnItIn reference database to be used solely for the purpose of checking future submitted work for originality. Suspected misconduct on any portion of this class will be reported to the Office of Student Support and Judicial Affairs and, if established, will result in disciplinary sanctions up through Dismissal from the University and a grade penalty up to a grade of "F" for the course.

## **UC Davis Copyright Statement**

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Code of Academic Conduct. Similarly, you own the copyright in your original papers and exam essays. If I am interested in posting your answers or papers on the course web site, I will ask for your written permission.

## UC Davis Student Disability Center (SDC) Statement

UC Davis is committed to educational equity in the academic setting, and in serving a diverse student body. I encourage all students who are interested in learning more about the Student Disability Center (SDC) to contact them directly at sdc.ucdavis.edu, sdc@ucdavis.edu or 530-752-3184. If you are a student who currently receives academic accommodation(s), please submit your SDC Letter of Accommodation to me as soon as possible, ideally within the first two weeks of this course.

# **Reading List**

Торіс	Shackelford Reading	
1. Introduction	Ch. 1	
2. Bonding	Ch. 2	
3. Crystalline Structures	Ch. 3 (no Bravais lattices, no x-ray diffraction)	
4. Defects	Ch. 4	
MIDTERM 1, Friday, 4/28 – in class		
5. Mechanical Properties	Ch. 6	
6. Phase Diagrams	Ch. 9	
MIDTERM 2, Wednesday, 5/17 – in class		
7. Electronic Materials	Ch. 13	
8. Diffusion	Ch. 5	
FINAL EXAM, Thursday, 6/15 at 8am		

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