

Course Syllabus for Fall, 2013 Materials Technology

Section: 025-01, T 1330-1515, Engr 103
R 1330-1615, Engr 105 (lab)
Instructor: Prof. Peters
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Purpose

This is an introductory course designed to familiarize the student with materials, their properties and testing, and their processing as used in design and production by industry. The course will cover material characteristics, treatments and preparations, forming, processing, and inspections required for use in construction and maintenance by product manufacturers and aircraft and aerospace companies. The Materials Lab will be used to familiarize students with testing procedures.

Expectations

Students must own and be able to use a pocket calculator. Basic computing skills in word processing and spreadsheet work are advisable and encouraged. There will be one hour and fifteen minutes of lecture per week. There will be two hours and forty-five minutes of lab per week.

Course Description (SJSU Catalog)

Designed to introduce students to materials used to make consumer and commercial products. Including metals, plastics, and composites. How materials impact our lives and standard of living. Materials selection and the role of experimentation, testing and evaluation procedures. 3 Units.

General Course Objectives

Students who participate fully in Tech025 readings and activities should come away with

- (1) Knowledge of how materials have shaped the history of the world including current technologies.
- (2) Recognition of the necessity of materials selection in each engineering/technology discipline and an understanding of some ways that material properties determine performance in applications.
- (3) Recognition of the practice of materials engineering and materials testing, and an identification of some ways that material process choices influence structure, properties, and processability.
- (4) Ability to identify various types of materials that would be appropriate for use in biomedical, communication, electronics, transportation, recreation, construction, and other applications.

Prerequisites:

Math 008 or equivalent, Chem 001A or 030A or equivalent

Required Texts

1. **Callister (2010): *Materials Science and Engineering: An Introduction***, Wiley; 8th edition.

- ISBN: 9780470419977. **The student companion site to this book is at**
<http://bcs.wiley.com/he-bcs/Books?action=index&itemId=0470419970&bcsId=5193>

Note: you can use earlier editions of the text. If you do, you will need to compare your edition with the current edition to make sure you are reading the right section numbers. The Table of Contents for the Eighth Edition is on Canvas to help you compare.

2. **Tech 25 Laboratory Handbook:** Modules available as required through the Canvas site. Print the lab materials, and read and mark them thoroughly BEFORE each lab they are scheduled for. Bring your marked copies to lab. There will be entrance and exit quizzes covering the topic and objectives of the lab sheets. For the labs, there is an honor code. Please go to the site, download the honor code, sign it and bring a hard copy to lab the first day.

Canvas and Communications

All of the online resources such as homework assignments, solutions, lectures, and other information will be on Canvas. To access the class site at Canvas you must be enrolled in the course. Go to the <https://sjsu.instructure.com/> Check the Canvas site frequently (2-3 times per week) for course updates.

Class Times and Activities

You will learn as much from this class as you put into it. If you do not do the readings, you will not learn much. Curiosity about materials and how they work will help you a lot! Your ACTIVE participation in the lecture sessions is expected. You are expected to ask questions, answer questions, and work together with your peers to solve problems during class time. The reading assignments for each week are listed in the Syllabus. You are expected to complete the week's reading *before* class. Bring your textbook and a calculator to lecture - collaborative group learning activities will take place during classes.

Classroom Protocol

Silence all cell phones during the class period. Please arrive on time for class. I will collect homework assignments at the very start of class. If you are late to class, you will be marked down 10% on the assignment. Please hold all assignments to pass in to the end (it is disruptive when students walk up to hand in assignments during the class).

Academic Integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The [University's Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf), located at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available www.sjsu.edu/studentconduct/.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Strict standards of academic honesty will be enforced in this class. Students who plagiarize any portion of their lab reports will receive an F (0) on that report with no chance of make-up and be reported to the University. Plagiarism constitutes copying *any portion* of your lab report from textbooks, lab notes, previous years' lab reports, or the reports of other students. Verbatim copying from web sites is also plagiarism, and includes copying data.

Any figures used from textbooks or the LabNotes must be properly footnoted. Homework assignments that you turn in must have been worked out entirely by you. You can study with friends and work out the problem together, but you must then independently work it through and record your own work. *Students who provide their homework or labs to other students such that they can be copied are also committing a*

breach of academic honesty. This includes leaving your work on shared computers, leaving your flash drive where others can copy it, etc. If you wish to help other students learn the material, studying together is acceptable as long as each individual goes on to produce his or her own independent work. For more information about avoiding plagiarism in written reports, see www.indiana.edu/~wts/pamphlets/plagiarism.html.

Article Reviews and Technical Report

Article Reviews and the Technical Report are due on the date specified in the course schedule. You will be able to upload these to the Canvas site. They will automatically go through turnitin.com.

Homework Assignments and Quizzes

Your textbook offers study questions at the end of each chapter which you are encouraged to answer. Homework assignments will cover specific questions from the book. There are unannounced quizzes given at the beginning of class. If you arrive late, you will likely receive a zero grade for such quizzes as they cannot be made up, and homework submitted after such quizzes is marked a day late.

Your name, the date, and the section number (Tech025-01) must be listed in the **upper right** of the first page of each assignment. You are encouraged to work together on your assignments; however you must turn in individual homework solutions. Group work (no more than 3 students) is sometimes approved for larger assignments. If a group assignment is submitted, you must list the names of all the students in the group in the upper right hand corner of the first page of the assignment. *If similar solutions are submitted by multiple students but they do not state they worked together, all the students with similar solutions will receive a '0' on that assignment. This applies to homework assignments as well.*

You must have actively participated in solving everything you submit, and have a full understanding of the solution you submitted. Copying partial or complete answers from other students or other sources is unacceptable. You will receive a zero grade on any assignment that contains un-credited copying or if you allow your homework to be copied.

Exam questions (See Examinations, below) will focus on material learned through the homework, readings, in-class exercises, and lab exercises. If you do not fully understand the solutions you pass in, you not only risk getting a 0 on that assignment, but you will not be able to answer the related questions during the tests. This will significantly affect your overall grade! Come to office hours if you are having trouble doing the homework yourself. Form a study group!

Late Submissions

Homework must be submitted **on the due date** at the **start of class period**. If you arrive more than five minutes after class begins, you will lose one letter grade. Late reports will receive a deduction of one letter grade per day late, and reports more than 2 days late will not receive credit. If you are absent or have late work due to an injury or illness, this must be documented in writing at the earliest possible opportunity. If you cannot be present on the day an assignment is due, you should arrange to do one of the following.

- Arrange to have the assignment delivered at the beginning of class, or
- Email the assignment to your instructor (your email system will date and time stamp the submission). Bring a hard copy to the next class meeting with a note of explanation attached.

Examinations

There will be one midterm and a comprehensive final exam. You must bring a calculator to the examinations. The tests will be closed book, closed notes with an equation sheet given. Study sheets and equation sheets for the tests will be provided beforehand. To study for the tests, you should review the readings, course lecture notes, homework, in-class exercises, material from the labs, and learning objectives

well in advance of the test date. Use the learning objectives from the course outline as a guide for studying. The date of the midterm exam is indicated in the Course Schedule. The midterm date may be changed depending on the progress of the lectures. Seating assignments may be given out for exams. Final exams follow the university final exam schedule. Unexcused absence during any examination will result in a zero for that exam. Absences are excused for emergencies, medical treatment or illness, or other **documented** problems. Contact your instructor as soon as possible to make alternative arrangements if you cannot attend an examination for one of these reasons. Document the reasons with an email, copy of doctor/hospital visit receipt or note, etc.

Withdrawing / Changing Sections

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's Catalog Policies section at <http://info.sjsu.edu/static/catalog/policies.html> . Add/drop deadlines can be found on the current academic calendar web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/ . The Late Drop Policy is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/> . Students should be aware of the current deadlines and penalties for dropping classes. Information about the latest changes and news is available at the Advising Hub at <http://www.sjsu.edu/advising/> .

The last day to **drop** a class is **Tuesday, September 3rd**.

The last day to **add** a class is **Tuesday, September 10th**.

Grading

Course Element:		Percentage of Course Grade:
Homework		10%
In-Class Activities		10%
Technical Report		10%
Article Reviews (2)		10%
Midterm		15%
Final Exam		20%
Lab Score		25%
	Lab Reports	(80%)
	Worksheets	(10%)
	Individual Quizzes	(10%)
Total		100 %

Total Course Score	Letter Grade
97-100	A+
94-96	A
90-93	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
60-69	D
< 60	F

University Policies and Resources

Campus Policy in Compliance with the Americans with Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

SJSU Writing Center

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. They offer **free** drop-in and by appointment writing sessions as well as workshops and online tutorials. www.sjsu.edu/writingcenter

King Library

Most of you know of the library, but do you know of all its hidden resources? You can reserve the small study rooms (great for group study work): library.sjsu.edu/reserve-studymeeting-room
There are a lot of tutorials online that are helpful on things like citing & writing, evaluating information, and search tips. library.sjsu.edu/tutorials-tools
Also, you can make an appointment with the engineering librarian to get help on searching and referencing. library.sjsu.edu/ask-librarian-0

Career Center

Be sure to register for the Career Center. They have **free** workshops on resumes, interviewing, etc. You can make an appointment for a specialist to work on your resume with you. They have large internship and full time job fairs and an online job database. careercenter.sjsu.edu

Learning Assistance Resource Center

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides **free** support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. www.sjsu.edu/larc

Peer Mentor Center

The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering “roadside assistance” to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are **free** and available on a drop-in basis, no reservation required. www.sjsu.edu/muse/peermentor

Student Health Center

The health center is free to all students for drop-in or by appointment care. You can have a regular check-up or go with a specific question. (They do not handle emergencies. For emergencies, call 911 or campus police). They also have a number of health and wellness workshops. www.sjsu.edu/studenthealth

Counseling Services

There is a free counseling service for students that takes both drop-in and appointments. They handle the spectrum from depression, homesickness, stress, and academic study skills. www.sjsu.edu/counseling

Associated Students Site

The Associated Students site hosts a range of resources including child care, recreation facilities, print shop, and transportation passes. as.sjsu.edu

Student Clubs

SJSU has over 300 recognized student clubs. www.sjsu.edu/getinvolved Also, the College of Engineering lists its student clubs here. www.engr.sjsu.edu/students/organizations