

MT 101 Introduction to Semiconductor Manufacturing - Syllabus Fall 2020

This is a web based syllabus and is best viewed/utilized on-line

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Course Description:

Presents an overview of careers in microelectronics technology. Also presents a succinct history of semiconductor manufacturing processing and fundamental clean room protocol. Students will learn about the importance of quality and contamination control emphasis in the industry.

This course is part of the introduction to the MT degrees and certificates, and complements MT 102 and MT 103 for Microelectronics or MT 104 for Solar Voltaics. The three course set is required for both the AAS degrees and the Certificates of Completion.

Credits: 1

Text Book: Introduction to Semiconductor Manufacturing Technology, Xiao

Prerequisites: none

Course Objectives:

- Determine if Microelectronics Technology is a field you want to further pursue.
- Operate with understanding in the working environment: cleanrooms, compressed workweek, etc.
- Use developed abilities and habits in the information methods of the industry to communicate and find information on: business news, processes, advances, technical data, etc.

Instructional Program:

Classes will mainly involve discussions of the reading assignments, but will also include some lectures and videos. Outside reading will be assigned and should be completed prior to the next class session. Classes will also have problem sessions and tests over the material covered in the course. Each student will create a journal of news items related to the semiconductor industry and articles that they have read during the term.

In the online version of this course the lectures are presented as web pages, but we will still have the same discussions, quizzes and assignments, emailing files, and using the discussion boards and other features of the Desire2Learn program.

This class is cross-listed with another section (combined Mon/Tues with the Thurs/Fri sections). This means that students enrolled in the other section of this class will be able to see your discussion board posts and may be present in online office hours (web conferences). You must let me know if you would prefer not to be visible to students enrolled in the other section of this class and I will take measures to prevent this.

Grading:

Course grades will be assigned on the basis of the points earned by each student during the term. The approximate distribution of points is:

<u>Grade Components</u>		<u>Grade Scale</u>	
Participation	20%	88 – 100% of total points	A
Quizzes	10%	75 – 87% of total points	B
Homework	30%	65 – 74% of total points	C
Journal	20%	55 – 64% of total points	D
Final Exam	20%	< 55% of total points	F

Tentative Course Schedule:

Module	Topic	Reading
1	Microelectronics Technology overview, Industry history	Ch. 1, 2.1-2.2
2	Contamination control	Ch. 2.3-2.7
3	Quality Control	Ch. 2.2-3.2
4	Careers, work environment, safety, exam	Ch. 6.5, 8.5, 11.7

- Reading is due before the class meeting covering the topic. This is an introductory class; you don't need to pick up all the technical details. Pay attention to the vocabulary and relationships.
- No class on 11/11, 11/26, 11/27

Other:

- Assignments and exams can only be made up by prearrangement.
- On-campus classes: tests and quizzes are closed book, one hand written crib sheet (8.5"x11") allowed. Distance-learning classes: there are no restrictions, but you will find the tests and quizzes much easier if you prepare a crib sheet.
- Assignment/exam calendars may be changed in response to the weather or institutional problems.
- Students who wish to make an auditory or visual recording of any portion of the class must speak with the instructor ahead of time. Any such recording is for personal use only. It may not be shared, shown to others, copied, uploaded to the Internet, and/or distributed, EVER! Sharing of recorded content is a violation of Oregon state law and of the [PCC Student Code of Conduct Policy and Procedures](#) [www.pcc.edu/student-conduct/conduct/student-code-of-conduct-policy-and-procedures/].
- If you have an accommodation form from [Disability Services \(DAS\)](#) [www.pcc.edu/resources/disability/], please make arrangements to meet with me privately at the beginning of the term to discuss your needs.
- Grades are assigned based on the [PCC grading policy](#) [<http://www.pcc.edu/resources/academic/standardspractices/AcademicStandardsandPractices-GradingGuidelines.html>]. Students should be aware of the grading options and the associated deadlines.
- Academic Integrity: Submitting improperly cited work copied from other sources is a violation of PCC's [Code of Student Conduct](#) [<http://www.pcc.edu/about/policy/student-rights/documents/student-conduct.pdf>] and [Academic Integrity policy](#) [<http://www.pcc.edu/about/policy/student-rights/documents/academic-integrity.pdf>]. All work submitted (homework, presentations) should be the student's original work. Any assignment in violation will receive a zero.
- Here are some other items you should know as a PCC student: <http://catalog.pcc.edu/handbook/s704-syllabus-standardsforcreditcourses/>