

Syllabus

Spring 2020 - April 4 – May 6, 2022

Instructor: Carmen S. Menoni

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tel: (970) 491-8659

Class Times: TR, 9:30am - 10:50am - ONLINE CLASS – PARTICIPATION IS MANDATORY

Office: Engineering C 101E

Office Hours: By appointment. Send an email to Prof. Menoni to Carmen.Menoni@colostate.edu to set up an appointment

Text: "Semiconductor Physics and Devices"

Donald A. Neamen, Fourth Edition (Chapters 8-14) – *Print copy ONLY, approved by CSU Bookstore*

Course description: Quantitative analysis of electric field, carrier and current distributions in MOSFETs and bipolar junction transistors; scaling, non-idealities.

Course Credits: 1

Prerequisites: ECE 331 with a C or better; ECE 471B or concurrent registration

Grading and Exams:

Quizzes	50%
Homework discussion	25%
Final Exam (in class)	25%

Homework: will be assigned once a week. There will be discussion of the homework in class. Each student will discuss her/his solution to one problem. Homework discussion takes place every Thursday. Attendance is mandatory.

Quizzes: In class; open print textbook. Prof. Menoni will provide a formula sheet.

Material for the class will be stored in CANVAS

Classes are recorded and available via ECHO 360

The pace of this class requires student read each chapter before they are discussed in class

Topics to be covered:

Week No.	Chapter	Topic
1	8	Review of Chapter 8
1	9	Metal –Semiconductor Junction
1		Homework Solutions Chapter 9 Quiz Chapters 7 and 8
2		SPRING BREAK
3	10	Fundamentals of MOSFET Sections 10.1 -10.5
3		Homework Solutions Chapter 10 Quiz Chapter 9
4	11	MOSFET additional concepts
4		Homework Solutions Chapter 11 Quiz Chapter 10
5	14	Optical devices
5		Homework Solutions Chapter 14
Finals Week	Comprehensive	Final exam

Masks are not required inside university buildings, you may want to exercise common sense if you have cold like symptoms. You must also meet university vaccine or exemption requirements.

All students are expected and required to report to the COVID Reporter (<https://covid.colostate.edu/reporter/>) when:

- You suspect you have symptoms of COVID, regardless of whether or not you are vaccinated and even if your symptoms are mild
- You have tested positive for COVID through a non-CSU testing site, such as home test or test at a pharmacy
- You believe you may have been exposed to COVID go to the COVID Reporter and follow the guidance under “I believe I have been in close contact with someone who has COVID-19.” This guidance will depend upon your individual circumstances
- You will not be penalized in any way for reporting symptoms or concerns.

Do not ask me as your instructor to report for you. It is your responsibility to report through the COVID Reporter promptly.

As your instructor I may not ask you about vaccination status or if you have COVID but you may freely volunteer to send me information from a public health official if you have been asked to isolate or quarantine.

When you complete the COVID Reporter, the CSU Public Health office is notified. Once notified, that office will contact you and, depending upon each situation, will conduct contact tracing, initiate any necessary public health requirements and notify you if you need to take any steps.

If you do not have internet access to fill out the online COVID-19 Reporter, please call (970) 491-4600.

For the latest information about the University’s COVID resources and information, including FAQs about the spring semester, please visit the CSU COVID-19 site <https://covid.colostate.edu/>.