Syllabus

Instructor: Prof. Carmen S. Menoni
Email: carmen.menoni@colostate.edu (Subject line should contain ECE 471 A)
Class times: TR 9.30-10.50 AM – Zoom link: ID: 95248555444
Office hours: TR 8.30 – 9.30 AM by appointment (Via Zoom – same link as class or at Menoni’s office C101E)
Course Description: This course introduces basic concepts of semiconductor physics which are needed for the understanding of the operation and limitations of semiconductor devices
Course credits: 1
Course pre-requisites: PH142; MATH340 or MATH345
Grading and exams:

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
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<tr>
<td>3 quizzes; at the end of chapter 2, 3 and chapter 4</td>
<td>65%</td>
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<tr>
<td>HW solutions submission</td>
<td>10%</td>
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<td>HW discussion in-class (on Thursday)</td>
<td>25%</td>
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Homework will be assigned once a week. Homework solutions need to be uploaded into Canvas prior to in-class discussion. For completeness each student will earn 10% of the grade. The homework will not be graded. Instead, it will be discussed in class. Each student will get its turn to present the solution to a problem randomly assigned by Prof. Menoni. This discussion will be graded. Each student will need to have the ability to present via Zoom the problem solution. This can be done using OneNote, or Powerpoint or Word, Notability, etc.

Quizzes: There will be 3 quizzes at the end of chapter 2, 3 and 4. Quizzes will be given outside class time by using Canvas. The time that best suits the class will be decided the first day of class.
**Course Outline**

Material for the class is stored in CANVAS

**Course Outline:**

<table>
<thead>
<tr>
<th>Week No.</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>Chapter 1: Crystal structure of Solids</td>
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<td></td>
<td>Chapter 2: Introduction to Quantum Mechanics</td>
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<tr>
<td>2</td>
<td>Chapter 3: Introduction to Quantum Theory of Solids</td>
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<td>3 -4</td>
<td>Chapter 4: The semiconductor in equilibrium</td>
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<tr>
<td>4-5</td>
<td>Chapter 5: Carrier Transport Phenomena</td>
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The pace of this class requires students to read each chapter ahead before they are discussed in class.

**On Tuesdays Prof. Menoni lectures. On Thursday HW solutions are discussed.**

**Class Etiquette:** The class will be in person. Nevertheless, Prof. Menoni will record the class using Echo360 for those who cannot attend due to illness. In case of illness, please communicate with Prof. Menoni ahead of the class. On HW discussion days, those absent will be able to present solutions via Zoom. Students can present using OneNotes or similar software.

All electronics must be turned off at the beginning of the class and remain off during the duration of the class.
Masks are required inside university buildings. 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/.