Physical Electronics/Semiconductors 1  
ECE 465-01  
ECE 583-01  
Syllabus (Fall 2023)

Instructor:  
- Russell C. Pepe, RCDD  
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201-960-6796  
IEEE #: 06888382

Rooms/Time:  
- Lecture/Lab:  
  - CoRE Room 538  
- Schedule  
  - Tuesday  
  - 5:30 pm to 8:20 pm

Books:  

Assignments:  

Lecture:  
- Read the text book assignments for lectures one week in advance.  
- Hand in homework assignment questions and problems one week after assigned. These may be hand written, but must be neat and legible. No credit is given for late homework.  
- Students will demonstrate homework solutions in class on the due date. This will count towards class participation.  
- All homework solutions will be posted.

Graduate Student Additional Assignments:  
- 2 IEEE Seminars related to class  
- Extra problem(s) on each test and final

Extra Credit:  
- IEEE Seminar related to class
Tests:

- Three tests will be given during the semester.
- You will be given 90 minutes to complete each test.
- A brief review will be given the week before tests.
- Calculators will be permitted.
- All tests are open book, and a one-page (8 1/2 x 11”) formula sheet will be allowed.
- Tests will be graded and returned. At that time, the test solutions will be provided during class.

Grading:

- Homework: 10%
- Class Participation: 5%
- Attendance: 5%
- Tests (3): 60%
- Final Exam: 20%
- Graduate 20%

Attendance:

- Attendance will be taken before each class.
- You will find that poor attendance will negatively impact your ability to grasp the material presented in this course.
- You will receive a grade for attendance.

Rules:

- Arrive to class on time. If you plan to be late or miss a class, call me or send me an e-mail in advance.
- Turn off your cell phone prior to arrive to class. Use of cell phones in class is forbidden.
Agenda:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong></td>
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| 1 | Introduction  
Chapters 1 (Electron Energy and States in Semiconductors) |
| 2 | Chapter 2 (Homogeneous Semiconductors) |
| 3 | Chapter 3 (Current Flow in Homogeneous Semiconductors) |
| 4 | Chapter 3 continued |
| 5 | Chapter 5 (Prototype pn Homojunctions)  
Test 1 |
| 6 | Chapter 5 continued |
| 7 | Chapter 5 continued |
| 8 | Chapter 5 continued  
Chapter 7 (The MOSFET) |
| 9 | Chapter 7 continued  
Test 2 |
| 10 | Chapter 9 (Bipolar Junction Transistors) |
| 11 | Chapter 9 continued |
| 12 | Chapter 12 (Power Semiconductor Devices)  
Test 3 |
| 13 | Chapter 12 continued |
| 14 | Chapter 12 continued |
| 15 | Final Exam |