Course Syllabus

ELCT 563 – Semiconductor Electronic Devices

<table>
<thead>
<tr>
<th>Course Coordinator:</th>
<th>Dr. Asif Khan</th>
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<tbody>
<tr>
<td>Catalog Description:</td>
<td>Basic semiconductor material properties. Principles and characteristics of semiconductor p-n junction and Schottky diodes, field-effect transistors (JFETs, MESFETs, and MOSFETs), and bipolar junction transistors.</td>
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<td>Credit Hours</td>
<td>3</td>
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<td>Prerequisite(s) by course</td>
<td>ELCT 363 or equivalent</td>
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<tr>
<td>Prerequisite by topics</td>
<td>Microelectronics</td>
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Course Outcomes:
Students who successfully complete this course will be able to:

- Understand principles underlying semiconductor micro-devices operation
- Develop an understanding of how semiconductor micro-electronic devices impact society
- Analyze the operation of microelectronic devices using semiconductor properties

Course Topics:
- Semiconductor basics
- Semiconductor p-n junctions
- Photodiodes, LEDs and Tunnel Diodes
- Field Effect Transistors
- Bipolar Junction Transistors

Course Contribution to Program Outcomes:
ELCT 563 contributes to an achievement of:

- Outcome A – an ability to apply knowledge of mathematics, science and engineering
- Outcome E -- an ability to identify, formulate, and solve engineering problems
- Outcome H – the broad education necessary to understand the impact of engineering solutions
- Outcome J – a knowledge of contemporary issues
- Outcome K – an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
General Course Policies

Academic Integrity
Unless otherwise stated, assignments and examination work are expected to be the sole effort of the student submitting the work. Students are expected to follow the University of South Carolina Honor Code and they should expect that every instance of a suspected violation will be reported. Students found responsible for violations of the Code will be subject to academic penalties under the Code in addition to whatever disciplinary sanctions are applied.

Accommodating Disabilities
Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, contact the Office of Student Disability Services: 777-6142, TDD 777-6744, email sasd@mailbox.sc.edu, or stop by LeConte College Room 112A. All accommodations must be approved through the Office of Student Disability Services.

Diversity
When scheduling exams, I have attempted to avoid conflicts with major religious holidays. If, however, I have inadvertently scheduled an exam or major deadline that creates a conflict with your religious observances, please let me know as soon as possible so that we can make other arrangements.

Recommended Study Habits
• Read the assigned material before class.
• Bring thoughtful questions to class for discussion.
• Prepare for the exams in study groups.
• Take notes during class discussions and while completing reading assignments.

Deviations
Minor deviations from the syllabus are a normal part of any adaptive teaching and learning process.