



ECSE-6960

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Physical Foundations of Solid-State Devices

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Rensselaer



Instructor

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Topics

- The physical foundations underlying the operation of modern electronic and photonic solid-state devices
- Quantum mechanical foundations will be emphasized
- Advanced device concepts will be discussed
- Solid-state materials will be discussed in particular semiconductor heterostructures



Topics, continued

- The course will give students a solid foundation for other microelectronics and photonics courses (e.g. Semiconductor Devices and Models I & II and Optoelectronics)
- The technical materials will be put in a historical perspective



Prerequisites

- Undergraduate courses in electrical engineering, mathematics, and physics (e.g. RPI PHYS-1100 Physics I and PHYS-1200 Physics II)



Textbook

- Required text:
- ***Physical Foundations of Solid-State Devices***
- *by E. F. Schubert*
- Text will be provided free of charge as PDF files through course web page