

Spring 2008
ECSE-2210 MICROELECTRONICS TECHNOLOGY

Faculty	Professor E. F. Schubert , Office location: CII 7111; Phone: 518-276-8775 Email: EFSchubert@rpi.edu Office hours: Tue., Wed., Fri. 12:00–12:30 PM
	Professor I. Bhat , Office location: JEC 6032; Phone: 518-276-2786 Email: bhati@rpi.edu, Office Hours: TBD
TAs	
	Scott Ghiocel Phone: none Email: ghiocs@rpi.edu Office hours: Monday 5.30–7.30 pm Location: Flip-Flop Lounge in JEC
	Venkata Chivukula Phone: none Email: chivuv@rpi.edu Office hours: Wednesday 3–4 pm Location: Flip-Flop Lounge in JEC
	Robert Palumbo Phone: none Email: palumr@rpi.edu Office hours: Tuesday 1–3 pm Location: Flip-Flop Lounge in JEC
Course web site	www.rpi.edu/~schubert → go to “Courses” → go to 2008 MT course
Objectives	An introductory survey of microelectronics technology emphasizing physical properties of semiconductors, physical principles of device operation, equivalent circuits useful in circuit design and fundamental limitations of semiconductor devices and principles of integrated circuit fabrication. Particular emphasis is placed on semiconductor fundamentals, p-n junctions, and MOSFETs.
Pre-requisite	ECSE-2010 Electric Circuits
Co-requisite	ECSE-2100 Fields and Waves I
Text	R. F. Pierret: “Semiconductor Device Fundamentals” Addison–Wesley
Class	Tuesday, Wednesday, and Friday 10:00 – 11:50 AM, Location: Darrin (DCC) 337
Homework	Assignments will be handed out in class on Tuesdays and are due the following Tuesday. These will be graded mostly for effort, with timely submission particularly important. In addition, there will be in-class assignments almost every class.
In-class activities	There will be 34 class activities. You should finish these activities in class.
Exams	Quiz I February 8, 2008 10:00 – 11:50 AM Quiz II March 21, 2008 10:00 – 11:50 AM Quiz III April 25, 2008 10:00 – 11:50 AM Final Exam TBD TBD
Solutions	Solutions to the homework problems and class activities will be available from the class web-site

Grading

- Three quizzes and final exam count 75 %
- In-class activities count 15 %
- Homework counts 10 %
- You can make up the in-class activities, but you will get only 50 % of the grade if you submit before the next class. No credit will be given if you do not finish the activities before the next class. No exceptions.
- The lowest scores for one (1) homework and eight (8) in-class activities will be dropped from the total. But it is to your advantage to attend all in-class activities.
- If you take the final, the three quizzes together count 50 % and the final exam counts 25 %. If you do not take the final exam, the three quizzes together count 75 %. If you are excused from one of the quizzes, then the two quizzes together count 42 % and the final will count 33 %.
- All requests for correction/change of the score of a quiz/exam must be brought to the attention of the TA within one week and must be approved by faculty within that week. Faculty will put his/her signature next to score change.
- Grading policy: Top student will receive A. Lowest student will receive C, D, or even F. All other grades will be obtained by linear interpolation.

COURSE PROCEDURES AND POLICIES

To maintain accurate course records, follow the following guidelines:

- Print your name clearly on all papers.
- In case of absence from a class, give the faculty lecturing an excuse signed by the Infirmary, Dean of Students, Coach, etc. If an excused absence is granted, you should finish the assignment for that class and submit in a timely fashion.
- To submit a paper for re-grading, attach a note and give it to the TA who will be responsible for the grading. Do not make any changes to the work, but describe the discrepancies in an attached note. Do this no later than *one week* after the paper was returned.
- Save your graded papers (at least until the course is concluded). You may need these papers in the unlikely event of a clerical error.

Other policies:

- Exams are open book, open note, open homework, etc.
- There will be no make-ups for quizzes. Notify the TA and course instructor. If you are excused from a quiz, the final exam becomes mandatory.

Academic integrity:

- Students may work in groups of two or three for in-class activities. Collaboration with others on homework is permitted. Each student must submit homework.
- Students must work independently on quizzes and final exam. Cases of academic dishonesty will be dealt with according to procedures outlined in the Student Handbook.