

## Information Regarding Midterm #1

### Overview

This information sheet merely documents the details regarding Midterm #1 that were presented in lecture this week.

### Date, Time, and Location of Exam

Monday February 19, 2007 at 12 noon (sharp) in EECS Room 1303 (our standard lecture room).

### General Information

The exam will be open book and open notes. Any tables you require will be included on the exam including integral tables and tables for parameters like  $R_p$ ,  $\Delta R_p$ , etc. Bring a calculator to the exam. You do not need a bluebook. You must include all of your work on your exam for full credit. The lecture notes are sufficient to perform well on the exam. The reading is merely supplemental. This exam will cover lectures 1 – 13 (everything up to, but not including MOS  $i$ - $v$  modeling).

The exam will be scored out of 100 points. The exam will likely consist of some multiple-choice and short answers questions worth ~20 points total and 2 large multi-part problems each worth ~40 points. The average is likely to be low. However, do not forget that the class is scored using the Z-score method so a low average is irrelevant. In fact, a high average is bad for the student because if most students score highly and you miss a few simple problems, your Z-score will be very low. The point is, what separates students on an exam with a high average is not comprehension of the material, rather it is attention to detail – something not really worth assigning grades to.

General topics to consider reviewing include:

- a. Some trivial information on the history of circuit technology.
- b. Performance metrics and advantages and disadvantages of different device technologies.
- c. Process modules including oxidations, film deposition, etching, ion implantation, diffusion, and lithography. These comprise the most important topics.
- d. CMOS process flow.
- e. Threshold voltage implant.
- f. Subthreshold swing.

I will be available for questions during the exam.