

ELE 448 Digital Integrated Circuit Design I Laboratory

Syllabus Spring 2016

- Instructor:** Dr. A. J. Davis davis@ele.uri.edu
Kirk 204
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- Teaching Assistant:** Seyed Hadi Nasrollahhosseini; (Hadi) hadinhosseini@my.uri.edu;
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- Lab:** W 02:00 - 04:45 Kelly 117
- Credits:** 1 Credit.
- Pre-requisite:** ELE 338, ELE339, PH204, ELE212, ELE215 and concurrent enrollment in ELE 447, Digital Integrated Circuit Design I Lecture.
- Text:** D. A. Hodges, H. G. Jackson, R. A. Saleh, *Analysis and Design of Integrated Circuits*, 3rd edition, McGraw-Hill, 2004. ISBN 0-07-228365-3.

A. J. Davis, *Introduction to Integrated Circuit Design, Layout & Simulation*, Laboratory Manual, 2004.

Other Sources

| Lab | Title | Labs Tool | Dates |
|------------|---|--|------------------|
| 1. | Introduction to Schematic Capture & Hspice Verification | Virtuoso Schematic, Sym. ADE & Hspice | 27 Jan 3 Feb. |
| 2. | Ring Oscillators | “” | 10 Feb. |
| 3. | Introduction to Layout | Virtuoso Layout Editor Diva DRC & LVS Checker | 17 Feb., 24 Feb. |
| 4. | D-Latches, D-FF's and T-FF's | “” | 2 Mar. - 16 Mar. |
| 5. | Counter Synthesis | “” | 30 Mar. |

Grading Elements:

| <u>Element</u> | <u>Weight</u> |
|--|----------------------|
| Labs | 50% |
| Lab Quizes | 10% |
| Individual Designs | 15% |
| Design Project (s) (Periodic deliverables, CAD Files, verification, presentation & final report) | 25% |