

ELE 448 Digital Integrated Circuit Design I Laboratory

Syllabus Spring 2022

- Instructor:** Dr. A. J. Davis davis@ele.uri.edu
Kirk 204
(401) 874-5482
- Teaching Assistant:** Drew Phillips andrew_phillips@uri.edu
- Lab:** W 02:00 - 04:45 Bliss 382 (Linux Workstations)
- 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.

Lab	Title	Tool	Dates
1.	Introduction to Schematic Capture & Hspice Verification	Virtuoso Schematic, Sym. ADE & Spectre	2 Feb
2.	Ring Oscillators	“”	9 Feb.
3.	Introduction to Layout	Virtuoso Layout Editor DRC & LVS Checker	16 Feb., 23 Feb.
4.	D-Latches, Xor	“”	2 Mar
5.	D-FF's and T-FF's	“”	9 Mar
5.	4b ctr	“”	23 Mar
6.	1b adder	Mini Project	30 Mar.

Grading Elements:

Element	Weight
Labs	70%
Design Project (s) (Periodic deliverables, CAD Files, verification, presentation & final report)	30%