

EE 648

VLSI Design

COURSE INFORMATION

Instructor:	Dr. Jason McNeely, Duckering 227 Office Phone: 474-7228 Email: jbmneely@alaska.edu Office Hours: Monday 2:00-4:00; Thursday 2:30-4:30 (You may also schedule an appointment or just drop by. The best way to reach me outside of office hours is via email.)
Lectures:	MWF 10:30-11:30
Location:	DUCK 406
Credits:	3
Prerequisites:	EE 343 or equivalent
Textbook:	<i>CMOS VLSI Design: A Circuits and Systems Perspective</i> 4 th Edition, Neil Weste and David Harris. 2011 Pearson Education. ISBN 978-0-321-54774-3
References:	Other reference materials may be posted electronically during this course.
Methodology:	Lectures will be supplemented with relevant homework including use of CAD tools and projects that combine theory with practical design. Quizzes and exams will assess the theoretical components, while projects with a brief presentation will assess the practical skills. Blackboard will be used for electronic material posting.

COURSE DESCRIPTION

This course will cover the skills necessary to bring a basic digital design having many transistors from concept to custom or semi-custom chip design for fabrication. This complements the computer engineering curriculum by allowing the student to move from the FPGA based and embedded system based design background to full custom chips. The design flow from concept all the way to final layout product will be emphasized. These are some of the skills needed by engineers at semiconductor companies. Hands on experience with some basic layout tools will be assigned via projects.

Students enrolling in this course need to have at least one semester of digital logic design (EE 343 or equivalent). It is also helpful to have some electronics background as well.

The catalog course description:

Study of methods to integrate millions of transistors on a single chip and create optimized designs. Topics include CMOS logic design, power and timing issues, VLSI architectures, and full custom layout. Students will use CAD tools to implement a VLSI design

COURSE

L	Date	Topic(s)	Book Sections
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L	Date	Topic(s)	Book Sections	Homework/Quizzes
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STUDENTS WITH DISABILITIES

Students with learning or other disabilities who may need classroom accommodations are encouraged to make an appointment with the Office of Disability Services (208 WHIT, Phone # 474-5655). Please meet with me during office hours so that we can collaborate with the Office of Disability Services to provide the appropriate accommodations and supports to assist you in meeting the goals of the course.

GRADING

Grade Component	Percentage
Homework	15%

Grade	Final Score
A	$\geq 90\%$

*Plus/Minus grading will be used.

* This scale is not absolute. Grades will be curved according to performance. However, the cutoff percentages listed here are maximum values such that a student with a final score of 90 will always receive an "A". In other words, the score required to achieve an "A" will never be set higher than 90%. The same applies to the other grade letters.

Projects will be graded based on completion, analysis, and brief presentation.

PLAGIARISM

As a UAF student, you are subject to UAF's Honor Code:

"Students will not collaborate on any quizzes, in-class exams, or take-home exams that will contribute to their grade in a course, unless permission is granted by the instructor of the course. Only those materials permitted by the instructor may be used to assist in quizzes and examinations.

Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses and other reports. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors.

Violations of the Honor Code will result in a failing grade for the assignment and, ordinarily, for the course in which the violation occurred. Moreover, violation of the Honor Code may result in suspension or expulsion."