

# Application Specific Integrated Circuit Design

## August 31, 2015

### **Topics**

This course discusses the design of Application Specific Integrated Circuits (ASICs). Specific topics include: VLSI design flow, custom and semi-custom IC structures, synthesis and CAD tools, system specification development, and the implementation of a digital signal processing (DSP) chip.

### **Prerequisite**

This course is designed for the first or second year graduate students. Attendants should have taken the undergraduate senior or graduate level courses in the area of VLSI design, VHDL and C language, and have the basic knowledge of VLSI CAD tools.

### **Text book**

“*Modern VLSI Design*,” by Wayne Wolf, Prentice Hall, ISBN 0-13-061970-1.

## Reference

“*Modern ASIC Design*”, by Dian Zhou, ISBN 978-7-03-031766-7, Science Press, China, 2011.



“*Application-Specific Integrated Circuits*,” by Michael John Sebastian Smith, Addison-Wesley Publishing Company, ISBN 0-201-50022-1.

“*VLSI Design*,” by Michael Vai, CRC Press, ISBN 0-8493-1876-9.

“*Principles of CMOS VLSI Design*,” Neil H. E. Weste and Kamran Eshraghian, ISBN 0-201-53376-6.

## **Policy**

- Attendance is required.
- Homework and project reports need to be handed in before the due time.
- There will be a middle term and a final project.
- There will be three reading and writing assignments.
- To see the instructor other than the class meeting time, please make appointment.
- Grading
  - Distribution: attendance 2%, presentation 3%, homework 20%, middle term project 25%, and final project 50%.
  - 85-89 ->A-, 90-94 ->A, 95-100 ->A+, 70-74 >B-, 74-79 ->B, 80-84 ->B+, 60-64->C, 65-69->C+, and below 60 ->F.

### **Instructor information**

- Name: D. Zhou
- Office: ECN 4. 610
- Email: [zhoud@utdallas.edu](mailto:zhoud@utdallas.edu)
- Phone: (972) 883 4392

### **Instructor office hour**

- Wednesday 2:00pm-3:00pm
- Make appointment if you need to see the instructor or TA other than the office hour

### **TA office hour**

- Name: Zhaori Bi and Xianan Wang
- Email: [zxb107020@utdallas.edu](mailto:zxb107020@utdallas.edu) and [xxw122030@utdallas.edu](mailto:xxw122030@utdallas.edu)
- Office: ECSN 3.516
- Office hour:
- Website: [www.utdallas.edu/~zxb107020/](http://www.utdallas.edu/~zxb107020/) (All course related materials will be posted on the webpage and please check it regularly.)