ECE 448, FPGA and ASIC Design with VHDL
Spring 2015

Instructor

Dr. Kris Gaj
The Nguyen Engineering Building, room 3225
Office hours: Monday 3:00-4:00 PM, Wednesday 3:00-4:00 PM,
Thursday, 6:00-7:00 PM, and by appointment

Lecture

Monday, Wednesday 1:30-2:45 PM, Robinson Hall A, room 412

Web page

http://ece.gmu.edu → Courses → ECE 448
click on “FPGA and ASIC Design with VHDL”

Grading

Lab assignments: 40% + 2% bonus
Midterm exam for the lecture: 10%
Midterm exam for the lab: 15%
Quizzes & homework: 10%
Final exam: 25%
Class activity: 8% bonus

Schedule (subject to possible modifications):

1. Objectives, Scope, and Organization. 01/21/2015
2. VHDL Refresher. 01/26/2015
3. Combinational-Circuit Building Blocks. 01/28/2015, 02/02/2015
4. Sequential-Circuit Building Blocks. 02/04/2015
5. FPGA Devices and FPGA Design Flow. 02/09/2015, 02/11/2015
6. Finite State Machines: State Diagrams, State Tables, ASM Charts, and VHDL Code. 02/16/2015, 02/18/2015
7. Modeling of Circuits with a Regular Structure. 02/23/2015, 02/25/2015
8. Review before the Midterm Exam. 03/02/2015
9. Midterm Exam. 03/04/2015
10. VGA Display – Graphics. 03/16/2015, 03/18/2015
11. VGA Display – Animation and Text. 03/23/2015, 03/25/2015
12. Xilinx FPGA Memories. 03/30/2015, 04/01/2015
13. Design Methodology. 04/06/2015, 04/08/2015
14. PicoBlaze Overview. 04/13/2015
15. PicoBlaze I/O and Interrupt Interface. 04/15/2015
16. PicoBlaze Programming and Instruction Set. 04/20/2015, 04/22/2015
17. Trends in Modern FPGAs. FPGAs vs. ASICs. 04/27/2015, 04/29/2015
18. Review before the Final Exam. 05/04/2015
   Final Exam. 05/06/2015, 1:30-4:15pm

Literature

Required Textbooks


Supplementary Textbooks


Honor Code

All rules of the Mason Honor Code will be strictly enforced. You should review the rules and interpretations of the Mason Code available at

http://oai.gmu.edu/the-mason-honor-code,

and be familiar with them.

Students with Disabilities

If you need special assistance, please inform the instructor and the Office of Disability Services (ODS, http://ods.gmu.edu) as soon as possible. All special accommodations must be arranged through ODS.