

ESE 345: Computer Architecture

Fall 2011

Description: This course focuses on the fundamental techniques of designing and evaluating modern computer architectures and tradeoffs present at the hardware/software boundary. The emphasis is on instruction set design, processor design, memory and input/output. Students will undertake a design project using a hardware description language and modern CAD tools.

Prerequisites: ESE 380 (ESE 218 and CSE 220 for CSE majors). 3 credits

Instructor: Prof. Mikhail Dorojevets
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Office Hours: Monday, Wednesday 9:50 –11:50 AM
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Course's website: <http://www.ece.sunysb.edu/~midor/ESE345/index.html>

Teaching Assistants: TBA
Email:

TA office: 208 Light Eng.
TA hours: TBA

Lecture: MW 6:50-8:10 PM, 154 Light Engineering

Text: David A. Patterson and John L. Hennessy "Computer Organization & Design The Hardware/Software Interface,"
4th ed., 2009 by Elsevier Inc. ISBN: 978-0-12-374493-7.

Recommended Books on the VHDL and Verilog:

1. Peter J. Ashenden. The Designer's Guide to VHDL, 3rd edition, Morgan Kaufmann Publishers, 2008, ISBN: 978-0-12-088785-9.
2. J. Bhasker, "A Verilog HDL Primer," 2nd ed., by Star Galaxy Publishing, ISBN 0-9650391-7-X, 1999
3. S. Palnitkar, "A Verilog HDL Guide to Digital Design and Synthesis", by Prentice Hall, ISBN 0-13-451675-3, 1999.

Project Deadline: Last week of classes in Dec. 2011

Course Grading: Homeworks: 15%
Exams: (two in-class midterms): 65%
Project: 20%