CDA 4204 CAD-Based Computer Design

Credits: 3


Reference materials: Verilog Digital Computer Design: Algorithms Into Hardware by Mark Arnold

Specific course information: Use of Verilog hardware description language for hierarchical behavioral level design of a CPU using current industry standards and design methodologies. Techniques for performance enhancement.

Prerequisites: Logic Design, Senior level

Specific goals for the course: Teach the design and architecture of major components of the structure of the central processing unit and memory hierarchy of modern microprocessor systems.

Use a cycle by cycle simulator to illustrate logic complexities. Students will have a number of hands-on experiments and design assignments.

Brief list of topics to be covered:

- BASIC STRUCTURE OF COMPUTERS
  Functional units – Basic operational concepts

Introduction to a hardware description language (Verilog)

- BASIC PROCESSING UNIT

- PIPELINING