Catalog Data:
CAD 4105 Structured Computer Architecture. Credit 3. A multi-level approach to computer architecture. Logic level, microprogramming level, conventional machine level, operating system level and assembly language level. Prerequisite: CDA 3201, Introduction to Logic Design.

Textbook:

Instructor:
Jie Wu, Professor of Computer Science and Engineering.

Class hours:
Tuesday and Thursday, 3:30 pm - 4:50 pm. GS 111

Office hours:
Tuesday and Thursday, 2:00 pm - 3:30 pm. S&E 410, jie@cse.fau.edu

Goals:
An understanding of the structure of digital computers at all levels of detail, from the logic level to the programming level. Conceptual understanding of hardware software interaction.

Prerequisites by Topic:
1. Basic Boolean algebra and logic design
2. Programming in a high level language

Topics
1. Multilevel machines
2. Overview of computer systems organization
3. Overview of digital logic
4. Microarchitecture level: examples and implementations
5. Conventional machine level: register structure, addressing, instruction set architecture, control flow
6. Operating system level: I/O control, multiprocessing, virtual memory
7. Assembly language: linking and loading macros
8. Advanced computer architectures*: shared-memory multiprocessors and message-passing multicomputers

Computer usage: none