

FSU CURRICULUM FILE SYLLABUS

DATE APPROVED _____ (COMPLETED AT UNIV LEVEL)

COURSE PREFIX/NUMBER: CDA 3101

COURSE TITLE: Computer Organization II

PRE OR COREQUISITES: CDA 3100(pre) REPEAT CODE: 00

LIST COURSE OBJECTIVES:

A student who has completed this course with a passing grade should be able to:

- Augment the datapath and control for a simple CPU to support additional instructions.
- Determine for a sequence of instructions the cycle when each stage of a simple in-order pipeline for each instruction will be performed.
- Determine for a sequence of memory references which references will hit or miss in the translation lookaside buffer, page table, and cache of a memory hierarchy.
- Calculate the average access time of transfer a sector of data from disk.

OBJECTIVES SHOULD BE BROADLY STATED TO ALLOW FACULTY DIFFERENCES AND ALLOW CHANGES IN MODE OF DELIVERY. ENOUGH DETAIL SHOULD BE GIVEN TO DISTINGUISH FROM OTHER COURSES IN ASSIGNMENT OF A SUS COURSE NUMBER. COMMITTEE APPROVALS ARE REQUIRED FOR A CHANGE IN OBJECTIVES.

GIVE BRIEF OUTLINE OF TOPICS TO BE COVERED (NO DATES):

ALU Implementation, Carry Lookahead Adder
Datapath Components and Execution of Instructions
Control Lines, Jumps
Multicycle Datapath and Control
Exception Handling
Pipelines and Hazards
Pipelined Datapath and Control
Data Hazards and Forwarding
Stalls, Branch Hazards
Branch Prediction, Cache
Cache Structure and Associativity
Read and Write Misses, Cache Performance, Multilevel Cache
Virtual Memory, Address Translation
Page Table, Page Faults
Translation Look-Aside Buffer, TLB Misses, Performance Measurement

EVALUATION CRITERIA CHECK ONE (CHANGE IN EVALUATION CRITERIA REQUIRES THE DEPARTMENT TO SUBMIT A NEW SYLLABUS FOR THE FILE)

EXAMS ONLY (THE NUMBER AND WEIGHT OF EACH TO BE REFLECTED ON THE STUDENT SYLLABUS)

EXAMS AND OTHER (SUCH AS LAB REPORTS OR ASSIGNMENTS, TERM PAPER OR WRITTEN PROJECT, ORAL PRESENTATION; THE WEIGHT OF EACH TO BE REFLECTED ON THE STUDENT SYLLABUS.

NO EXAMS - ONLY ASSIGNMENTS (TO BE DESCRIBED CLEARLY ON THE STUDENT SYLLABUS)