FSU CURRICULUM FILE SYLLABUS

DATE APPROVED_____(COMPLETED AT UNIV LEVEL)

COURSE PREFIX/NUMBER: CDA 3100

COURSE TITLE: Computer Organization I

PRE OR COREQUISITES: COP 3330, MAD 2104 REPEAT CODE: 00

LIST COURSE OBJECTIVES:

Students are expected to complete the course with

- **Numbering Systems**: A thorough understanding of general (base-X) numbering systems, as well as specific understanding of the numbering systems commonly used in Computer Science (binary, octal, hexadecimal). This includes the ability to represent quantities in any base number system as well as to convert between systems. Further, students will understand schemes for representing signed and floating-point values in digital computers, such as the IEEE 754 Floating Point Standard.
- **Digital Logic Design**: A thorough understanding of basic logic gates and their use in constructing simple circuits related to computer organization (such as memory latches, control lines, and an arithmetic logic unit). This includes understanding of the use of Boolean Logic to represent digital logic design.
- **Machine Cycle**: A fundamental understanding of the basic machine execution cycle (fetch, decode, execute, store) as well as the concept of a Von Neumann machine and the relation between a Processor and Main Memory. This includes a basic understanding of machine language and instruction encoding, and will be reinforced with Assembly language.
- **Assembly Programming**: Basic development skills in a representative Assembly language, as well as an understanding of the interfacing of Assembly language with C language.

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):

Numeric Representation
- Binary, octal, hexadecimal (plus general Base-X)
- Signed/unsigned representation
- Floating point representation

Assembly Language Programming
- Correspondence to C
- Interfacing with C

Digital Logic Design
- Basic logic gates
- Construction of simple circuits
- Boolean logic

Device Drivers and Input/Output

Basic Computer Organization
- Machine execution cycle
- Von Neumann architecture
- Machine language/instruction encoding

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)**

X 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)**