

Pellissippi State Community College
Master Syllabus

MACHINE ORGANIZATION
CSIT 2820

Class Hours: 3.0
Laboratory Hours: 3.0
Credit Hours: 4.0
Revised: July 2011

Instructor:
Office:
Phone:
Email:

Catalog Course Description:

A study of assembly language and computer organization. Topics include organization, architecture, number systems, storage concepts, I/O memory management and process management.

Entry Level Standards:

The student is expected to be proficient in programming components taught in CSIT 1520. The student must have math, writing, verbal and English language skills at the college level.

Prerequisite: CSIT 1520 or department approval

Textbooks and Other Materials Basic to the Course:

Null, Linda & Julia Lobur, *The Essentials of Computer Organization and Architecture, 3rd Edition*, Jones & Bartlett Learning, 2012, SBN-13: 9781449600068, ISBN-10: 1449600069.

I. Week /Chapter/Topic Basis:

1	1,2	Introduction, Representing Data
2	2,3	Representing Data, Boolean Algebra and Digital Logic
3	3	Digital Logic
4	4,5	Parts of a Computer, Processors and Instructions Sets
5	4,5	Instructions Sets, Operand Addressing and Instruction Representation, Test 1
6	6	Memory and Memory Management
7	6	Memory and Memory Management
8	7	Input/Output and Storage Systems
9	7,8	Input/Output and Storage Systems, System Software
10	8	System Software, Test 2
11	9	Alternative Architectures
12	10,11	Embedded Systems, Performance Measurement and Analysis
13	12	Network Organization and Architecture
14	13	Storage Systems and Interfaces
15	→	Test 3

II. Course Goals:

The course will:

- A. Enhance the student's knowledge of the architecture and operation of computers. I, II, III, IV, V
- B. Build students skills to write or modify system software modules in a low-level or high-level programming language. II, IV, V
- C. Enhance the student's knowledge of binary, decimal, and hexadecimal codes to demonstrate an understanding of how programs and data are stored III, IV
- D. Foster the ability to apply Boolean algebra to design and implement algorithms and digital logic to design and implement simple hardware components of a computer. III, V
- E. Foster the ability to apply program development facilities and utilities to create executable programs IV
- F. Enhance the student's understanding of a hierarchical directory structure and manipulate files within this structure. IV

III. Expected Student Learning Outcomes:

Students will be able to:

1. Identify and use the major addressing modes of a PC. A,B
2. Write system programs making use of control structures and modularity. A,B,D
3. Implement a stack using PC assembler and make use of the user stack. A,B
4. Write programs which call functions and procedures and pass arguments. A,B
5. Use bit-wise instructions to implement the laws of logic and Boolean algebra. A,B,D
6. Write which call system macros and procedures. A,B
7. Create modular programs. B
8. Use the different internal formats of integers, real numbers and character data and convert between the forms whenever possible. C,D
9. Use Debug in debugging programs. A,B,C,D
10. Pass arguments by value or reference. A,B
11. Explain the operation of assemblers, interpreters and compilers. B,C
12. Use the linker and answer questions concerning the linking process. B
13. Create and/or use a library with a programming language. A,B
14. Create, edit, delete, rename, copy and display the contents of files. A,E,F
15. Use PC compilers, assembler, linker and symbolic debuggers to develop programs. A

V. Evaluation:

- A. Testing Procedure: 60% of grade
There will be three tests worth 60% of the grade. Failure to make a passing test average will result in a grade of F for the course.
- B. Laboratory Expectations: 40% of grade
Lab attendance is required. At least 7 lab assignments will be given and must be completed and handed in on the designated date. The student is expected to turn in all required documentation for each lab. Lab assignments are 40% of the grade. Failure to make a passing test average will result in a grade of F for the course.

C. Field Work: None is required.

D. Other Evaluation Methods: None.

E. Grading Scale:

93 – 100 A

88 – 92 B+

83 – 87 B

78 – 82 C+

73 – 77 C

65 – 72 D

Below 65 F

VI. Policies:

A. Attendance Policy:

Pellissippi State Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy can be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal can be addressed to the vice president of Academic and Student Affairs (Pellissippi State Catalog)

Maintaining continuous attendance in your classes is very important. If you are considering dropping or withdrawing from a course, please check with the Financial Aid Office before doing so. Dropping or withdrawing from a class can adversely affect your financial aid and/or lottery eligibility.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to (Pellissippi State Catalog):

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor
- Taking an exam for another student

C. Accommodations for Disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office.

Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course.

Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. Computer Usage Guidelines:

College-owned or –operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner. (Pellissippi State Catalog)

E. Other Policies:

Students are expected to promptly attend all lecture and lab classes. If a class is missed, it is the student's responsibility to make up all work and get notes and/or handouts. In the event that a student has an emergency beyond his/her control, he/she must notify the instructor as soon as possible.