PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

COMPUTER ORGANIZATION & ARCHITECTURE
CSIT 2860

Class Hours: 2.0 Credit Hours: 3.0
Laboratory Hours: 2.0 Revised: Spring 2015

Catalog Course Description:
A study of 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

Textbooks and Other Materials Basic to the Course:

I. Week /Chapter/Topic Basis:

1,2 1 Introduction, Representing Data
2,3 2 Representing Data, Boolean Algebra and Digital Logic
4,5 3 Boolean Algebra and Digital Logic
   Test 1
6 4 Introduction to Instruction Set Architectures and Assembly Languages
7,8 5 Instructions Sets, Operand Addressing and Instruction Representation
9,10 6 Memory and Memory Management
   Test 2
11,12 7 Input/Output and Storage Systems
12,13 8 System Software
14,15 9 Alternative Architectures
   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

IV. 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

V. 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)

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 that 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 Disability
Services (DS) in order to receive accommodations in this course. Disability Services may
be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander
130. More information is available at http://www.pstcc.edu/sswd/.