

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREAS BIOLOGICAL AND PHYSICAL SCIENCES, MATH AND COMPUTER SCIENCE

1. **Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

COMP 162. COMPUTER ARCHITECTURE AND ASSEMBLY LANGUAGE (3)

Three hours of lecture per week.

Prerequisite: COMP 150

An introduction to computer architecture, assembly language programming, system software and computer applications. Topics include: number systems and data representation; internal organization of a computer; primitive instructions and operations; Assembly language; language translation principles; overview of operating systems.

2. **Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	<u>3</u>	<u>1</u>	<u>24</u>
Seminar	_____	_____	_____
Laboratory	_____	_____	_____
Activity	_____	_____	_____

3. **Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

The course is a required course for Computer Science majors according to accreditation guidelines.

Through this course, students will be able to

- Recognize the main components of a computer system
- Determine suitable machine-level representation of data objects
- Implement algorithms in assembly language
- Discuss the fundamental role of an operating system
- Translate between high-level and low-level languages
- Organize and express ideas clearly and convincingly in oral and written forms.

This course is not designed to satisfy the University Writing or Language requirements.

4. **Is this a General Education Course** **YES** **NO**

If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)	
B (Mathematics & Sciences)	
C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

5. Course Content in Outline Form. [Be as brief as possible, but use as much space as necessary]

History of Computing
Components of a typical computer system
Representation of information
The Pep/7 architecture
Pep/7 assembly language
Representation of control structures
Representation of data structures
Languages, grammars and the parsing problem
Operating system topics
Floating point
Computer arithmetic

6. References. [Provide 3 - 5 references on which this course is based and/or support it.]

Warford *Computer Systems*, Second Edition, Jones and Bartlett 2002 ISBN 0763716332
Salomon, *Assemblers and Loaders*, Prentice-Hall, 1993
Bryant and O'Halloron, *Computer Systems: a programmer's perspective*, Prentice-Hall (2003) ISBN 013034074X

7. List Faculty Qualified to Teach This Course.

All Computer Science faculty

8. Frequency.

a. Projected semesters to be offered: Fall Spring Summer

9. New Resources Required.

a. Computer (data processing), audio visual, broadcasting needs, other equipment

Use of existing computer lab.

b. Library needs

none

c. Facility/space needs

none

10. Consultation.

Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

Proposer of Course

Date