**NEW COURSE APPROVAL FORM - Page 1 of 2**

Course title: CS 160 Orientation to Computer Science

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Supervisor Signature:

Division CTE Department Engineering and CIS Program Engineering

Course No CIS 160 Title Orientation to Computer Science Terms Offered FWS

Credits 4 Lecture hrs/wk 3 Lec/Lab hrs/wk 2 Lab hrs/wk Practicum hrs/wk

Banner Pre-req. MTH 95 Instructor Pre-req. Co-requisites .Length (wks) 11

Proposed implementation date

Term W Year 2014

Grading Option A-F

Load Factor 4.4

Catalog Course Description: This course explores the discipline and profession of computer

science. It provides an overview of computer hardware architecture, the study of algorithms,

software design and development, data representation and organization, ethics and the history of

computing and its influences on society. The student is exposed to both low-level and high-level

programming languages. May be offered online. Banner Enforced Prerequisite: MTH 095

VOCATIONAL TECHNICAL PROPOSALS ONLY LOWER DIVISION COLLEGIATE PROPOSALS ONLY

Approved by Advisory Committee (Minutes Attached):

Is this course on the "LDC Course List" of the State Department

To be Yes No

If no, this course has been approved for transfer to: (college or university) (attached syllabus, course description, and

outcomes)

Occupational Preparatory (organized degree/cert program)

Occupational Supplementary

**NEW COURSE APPROVAL FORM – Page 2 of 2**

**Support Course:** Indicate all programs for which this course will be required.

**PROGRAM DEPARTMENT DATE**

Engineering Engineering and CIS Fall 2014

**Overlap** Indicate departments and courses

None

COURSE DEVELOPED BY Clay Baumgartner DATE: 10/8/2013

**ATTACH the documents below:**

• COMPLETE COURSE OUTLINE

• **COMPLETE NEW COURSE JUSTIFICATION FORM**

**COURSE OUTLINE – Page 1 of 2**

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Course No: CS 160

Course Credit: 4

Lecture Hrs/wk: 3

Lab Hrs/Wk: 0

Lecture/Lab Hrs/Wk: 2

Practicum Hrs/Wk: 0

Clock Hours: 55

Length of Course 11 weeks

Banner enforced Prerequisite: MTH 95

Instructor enforced Prerequisite:

Co-Requisite:

Load Factor: 4.4

Activity Code:

CIPS:

Course Title: Orientation to Computer Science

Developed By: Clay Baumgartner

Development Date: 11/3/2013

Revision Date:

COURSE DESCRIPTION:

This course explores the discipline and profession of computer science. It provides an overview

of computer hardware architecture, the study of algorithms, software design and development,

data representation and organization, ethics and the history of computing and its influences on

society. The student is exposed to both low-level and high-level programming languages. May

be offered online.

COURSE OUTCOMES:

1. Describe a computer's hardware components and interactions, analyze and problem-solve

hardware configuration issues

2. Describe the role of an operating system and its major subsystems, analyze and problemsolve

operating system configuration issues

3. Describe programming methodologies, analyze and problem-solve basic programming

issues, describe current programming methodologies

4. Describe how programming languages are implemented, including the translation process

from high-level to machine-level code

5. Describe computer networks and communication technologies, describe the current

network market

6. Describe systems of computer and network use, describe social contexts and cultures of

computer use, understand the role, elements, types and development of computer

information systems in organizations

7. Describe the computing discipline as it relates to Computer Science, Electrical

Engineering, Computer Engineering, Software Engineering, Information Technology and

Information Systems

REQUIRED TEXT/MATERIALS:

“Computer Science Illuminated”, 5th edition, by Nell B. Dale, ISBN13: 978-1449672843

ISBN10: 1449672841, or most current edition

**COURSE OUTLINE – Page 2 of 2**

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OUTLINE: [Topics taught by week 1-10.]

Week 1 The information layer, computer systems and social context - the history, its elements and types of information systems

Week 2 Computing as a tool and discipline - usage of the computer and the computer disciplines that support it

Week 3 The Hardware Layer - the basics of how a computer works, how data is stored and architecture models

Week 4 Programming and algorithm development - styles of programming, algorithm development, types of languages and language translation

Week 5 Review and Midterm

Week 6 The Operating System Layer - its role and operations

Week 7 The Operating System Layer - its role and operations

Week 8 The Applications Layer - from desktop programs to large transaction systems

Week 9 The Communications Layer - network technologies and the Internet

Week 10 Review