



## Nature of Computing

### CSCI 104 Section 04

SEMESTER (Spring 2014)

#### PROFESSOR/CLASS INFORMATION

##### Shieu-Hong Lin

(Course) Title: Nature of Computing

Term: Spring, 2014

Location: LIB 141

Office Phone: 562 903-4741

Office Hours: T Th 1:00-2:00pm

E-Mail: shieu-hong.lin@biola.edu

University Website: www.biola.edu

Course Code/#: CSCI 104 Section 4

Class Days/Time: MW 10:30-11:45am

Credit Hours/Units: 2

Office Location: White 48

Meetings with Professor: Make Appt via Email

Admin Assistant: Jerrienne Smith, x4741

Dept. Website: <http://csci.biola.edu>

**Class Website:** <http://csci.biola.edu/csci104Lin/>

Avoid the use of stereotypes or terminology that demeans persons or groups based on age, disability,

#### COURSE DESCRIPTION

The history of computing machines. Computer logic and binary arithmetic. Elementary concepts of computers. Elementary programming. Societal impact of computers. Offered every Semester.

#### COURSE ALIGNMENT WITH PROGRAM LEARNING OUTCOMES

CSCI 104 Nature of Computing: This lower-division course is an elective general-education course for non-CS majors. Successful completion of this course (see next section) will prepare students to demonstrate a general understanding of computer science and its applications.

#### COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES

By the completion of this course including class participation, class assignments (referred to as "Tasks"), class readings and group interaction, the following objectives and learning outcomes will be assessed and demonstrated:

**IDEA Objective #1:** Learning fundamental principles, generalizations, or theories underlying modern information and computation infrastructures. (Essential emphasis).

**STUDENT LEARNING OUTCOMES** (The learner will demonstrate that he or she has satisfactorily fulfilled IDEA Objective #1 by being able to):

- use the fundamental data structures in computer science, such as vectors, linked lists, and search trees in programming assignments
- write programs based on the fundamental concepts of object-oriented programming and the skills of designing and implementing data structures and abstract data types as C++ classes, and
- conduct basic software-engineering practice in the design, implementation, and testing of programs.

## REQUIRED TEXTS

Required Textbooks (Each of the following books are required and will be used in this course)

- G. Beekman and B. Beekman, Digital Planet: Tomorrow's Technology and You, Introductory. 10<sup>th</sup> ed. Prentice Hall.

## LEARNING TASKS (Assignments) & ASSESSMENT (Grading)

Description and Weighting of Assignments:

### Task 1: Weekly Cumulative Progress Report

**Due Date:** Wednesday of the week (**15 assignments**)

**Weighting:** 15%

**Possible Points:** 3 points each.

**Description:** Using the template for cumulative weekly progress report, the student needs to incorporate information such as the amount of time he/she spent for the reading, attendance, and the overall progress in reading, programming, and other assignments since last Wednesday into the cumulative progress report.

**Assessment:** The student need to **(i)** finish the reading on time and record it in the progress report (1 point), **(ii)** attend the class this week (1 point), and **(iii)** gain a good understanding of 80% or more of the contents **or** have spent at least three hours in the reading (1 point). The student needs to email the TA the weekly progress report for credit points.

### Task 2: Weekly Assignments

**Due Date:** Wednesday of the week

**Weighting:** 55%

**Possible Points:** 4-6 points each.

**Description:** The weekly assignments form the backbone of the course. They require the student to incrementally develop skills based on faith-and-learning reflection and concepts of programming and computer science learned in the class.

**Assessment:** The student needs to embed the answers to the weekly assignments into the weekly progress report and send it to the TA by email for grading.

**Task 3: Exams (Midterm and final exams)**

**Due Date:** Midterm and Final exam week

**Weighting:** 30%

**Possible Points:** Up to 50 points each.

**Description:** The exams have both the written component (mainly testing the understanding of the readings and other key concepts introduced in the class) and the programming component (mainly testing skills in basic programming).

**Assessment:** The written component will be graded based on the answers provided while the programming component will be graded based on the simple programs written.

## CLASS INFORMATION

### 1. Class Attendance and Attendance Policy:

**Attendance** You are expected to attend the class regularly since we will explore Python programming and other concepts using the computers in the lab. Missing the class may seriously hamper your understanding of many key concepts and programming skills critically needed in your assignments.

**Policy** Class attendance is counted toward points for the weekly progress report.

### 2. Assignments:

Due dates of various assignments will all be on Wednesdays. In order to get full credit for an assignment, you must send it in by the end of the day on the due date. Late submission up to 6 days late will end in a deduction of **15%** of the total points **each day**. Assignments turned in 7 or more days late will receive no point.

### 3. Turning in Assignments:

Assignments are expected to be received electronically by email with a clear subject title indicating it is for a specific CSCI 104 assignment.

### 4. Computation of Final Grade:

Weekly Progress Report	15 %
Weekly Programming Assignments	55%
Exams	30 %
<b>Total</b>	<b>100%</b>

**9. Final grades will be awarded on the following point system:**

- A 93%
- A- 90%
- B+ 87%
- B 84%
- B- 80%
- C+ 77%
- C 74%
- C- 70%
- D+ 67%
- D 64%
- D- 60% to pass class

**GENERAL INFORMATION**

1. The GPA System used by the University Registrar’s Office is:

A = 4.0	B = 3.0	C = 2.0	D = 1.0
A- = 3.66	B- = 2.66	C- = 1.66	D- = 0.66
B+ = 3.33	C+ = 2.33	D+ = 1.33	F = 0.0

2. Method of Instruction:

The following methods of instruction will be included in this course:

*(You may select from the following list and/or add other methods relevant to your course)*

1. Lecture
2. Group Discussion
3. Written Reports
4. Programming Assignments
5. Electronic Presentation
6. Use of the Internet
7. Other Audio/Visual Resources
8. Reading
9. Digital and/or Print Media

3. Posting of Grades:

Grades for individual assignments will be posted under Biola’s Blackboard system. To access the records online, log on to <http://blackboard.biola.edu> to make sure the records are accurate.

4. Course Calendar

**Tentative Schedule**

Week	Subject of Exploration	Reading
1	Can we make the computer think and act like humans?	2001: A Space Odyssey
2	How does the computer store and process information?	Chapter 2: Hardware Basics: Inside the Box
3	How does the computer perceive the world and interact with it?	Chapter 3: Hardware Basics: Peripherals
4	How do we program the behavior of the computer Part I (storing information in variables)?	Chapter 4: Software Basics, Reading on programming
5	How do we program the behavior of the computer Part II (simple input/output)?	Chapter 5: Productivity, Reading on programming
6	How do we program the behavior of the computer Part III (operations and expressions)?	Chapter 6: Graphics, Reading on programming
7	How do we program the behavior of the computer Part IV (conditional statements)?	Chapter 7: Database, Reading on programming
8	Review and Midterm	
9	How do we program the behavior of the computer Part V (loops)?	Reading on programming
10	How do we program the behavior of the computer Part VI (functions)?	Reading on programming
11	How can we have the computers communicate with each other?	Chapter 8: Networking
12	How can we make the computers in the world work together as a global community?	Chapter 9: The Evolving Internet
13	What are the risk and security issues in the world of computers	Chapter 10: Computer Security
14	Review and more on Computer Science	
15	Final exam	