

History of Computer Science

Course Syllabus

Spring 2015

Course Information

Student Facilitator: Rylan Schaeffer
Contact Information: ryschaeffer@ucdavis.edu
Faculty Mentor: Sean Davis
Contact Information: davis@cs.ucdavis.edu
Credit: 1 unit
Grading: P/NP
Meetings: TBD
Location: TBD

Course Description

This course covers the advent of modern computer science, from Babbages difference engine to internet giants. The course will examine key developments and contributions in computer history, the individuals who made them, and the political, social and economic environments in which they were made. The course will be a survey of hardware, software, networks and the mathematical foundations of computation. The course will be one hour per week.

Course Learning Outcomes

1. Students will demonstrate understanding of key developments in computer history, including
 - who made what contributions
 - in what context the contributions were made
 - the significance of those contributions over time in political, economic, environmental and societal contexts
2. Students will engage in an inquiry-based project, oral or written, with the following components:
 - Identify topic
 - Conduct evaluative inquiry regarding credibility, context, significance
 - Synthesize inquiry
 - Present ones findings

Prerequisites

None. It should be noted that this course offers material for both computer science novices and experts. Novices will be introduced to many introductory computer science concepts and experts will learn the context in which those concepts were developed.

Course Outline

1. Introduction, Why Study Computer History, What You Want Out of This Course
2. Computing in the 1800s (Babbage, Hollerith, Boole)
3. WWII and Advent of Modern Computing
4. Theory of Computation: Hilbert, Gdel, Church and Turing
5. Computing in War and Commerce in 1950s
6. Software, Operating Systems and Programming Languages through 1980s
7. Fairchild, Intel and AMD's Microelectronic Revolution
8. Personal Computers and Killer Apps
9. Computer Networks and Internet Giants
10. Term Project Presentations

Required Texts & Materials

Martin Campbell-Kelly, William Aspray, Nathan Ensmenger and Jeffrey R. Yost. **Computer: History of the Information Machine 3rd Edition**

Additional articles and books may be used to supplement readings. Two potential books are:
Davis, Martin. **The Universal Computer: The Road from Leibniz to Turing**
Doxiadis, Apostolos. **Logicomix: An epic search for truth**

Learning Activities & Assessment

Term Project: Choose and complete one of the following options:

1. Choose a person of interest i.e. Alan Turing. Research their contributions and the historical context of those contributions. Write a 2-3 page paper or prepare or deliver a 5-10 minute presentation.
2. Choose an object of interest i.e. microprocessor. Research the evolution of this object from creation to current day. Write a 2-3 page paper or prepare or deliver a 5-10 minute presentation.
3. Choose a period of interest i.e. 1950s. Research key advancements from this time period. Write a 2-3 page paper or prepare or deliver a 5-10 minute presentation.
4. Propose your own term project. You must receive approval if you wish to do this.

Weekly Assignments:

1. Weekly Readings: Each week, you will be expected to read approximately 20-50 pages.
2. Weekly Quizzes: Each week, there will be an in-class quiz based on the reading that should take no more than 10 minutes.

Grading & Other Policies

Grades will be determined as follows:

1. Weekly Quizzes - 48% (8 quizzes, 6% each). Quizzes will be based on weekly readings and classroom lectures. Students will be provided with the opportunity to submit potential quiz questions; if a student's question is used in a quiz, that student will receive extra credit equivalent to half a correct quiz question.
2. Project Proposal - 12%. Students will submit a 1 page summary of the project they have chosen.
3. Project Rough Draft - 10%. Students will submit a rough draft of their term project to demonstrate that they are actively working on the project.
4. Project - 30%.

Late Policy: No late assignments will be accepted. Quizzes will begin promptly when class begins and will conclude after 10 minutes or when the last student submits their quiz, whichever comes earlier. Students arriving late will not receive extra time to make up the quiz.

Accessibility Policy: Any student who may need an accommodation based on the impact of a disability should contact me privately to discuss his or her specific needs. In addition, the student should contact the Student Disability Center (SDC) at (530) 752-3184, sdc@ucdavis.edu as soon as possible to better ensure that such accommodations can be implemented in a timely fashion.

Flexibility Policy: If a personal emergency arises, or if multiple classes assignments/tests coincide, please talk to me to set up a workaround. I want you to learn in my class and I don't want students dropping or failing because they need to prioritize their major-required courses and the like.