# CPSC 5555 Special Topics: History of Computing
# Summer 2009

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## Computer Science 5555 – Special Topics: Prerequisite: Junior/Senior Standing.

Study of topics of special interest in computer science, or directed experience in computer science by means of lecture, discussion, seminar, and research. May be taken for a maximum of nine hours. (The History of Computing course provides students with a historical and cultural educational experience. This program will enhance students' understanding of another culture at a level not typically experienced. Our students and faculty will experience the history of computing firsthand by exploring several of the sites instrumental in the development of early computing devices.)
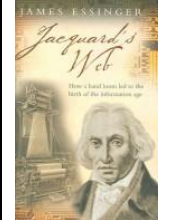
## Student Learning Objectives:

1. Students will be able to discuss the early history of computing.
    - ❖ Strategies and Actions used to produce the outcome:
        - i. Study the early developments of computing and computing devices.
        - ii. Class discussion about the early history of computing.
        - iii. Field trips to Greenwich Royal Observatory and London Museum of Science.
    - ❖ Assessment Methods: Written Assignments and Final Exam.
2. Students will have an understanding of the challenges early computing pioneers faced in advancing the technology.
    - ❖ Strategies and Actions used to produce the outcome:
        - i. Read about the early developments of computing and computing devices.
        - ii. Class discussion about the challenges faced by the early computing pioneers.
        - iii. Field trips to London Museum of Science, Bletchley Park and Manchester Museum of Industry and Trade.
    - ❖ Assessment Methods: Written Assignments and Exams.
3. Students will be able to describe the important contributions of U.K. to the early development of computing.
    - ❖ Strategies and Actions used to produce the outcome:
        - i. Read about the developments of computing and computing devices in the U.K.
        - ii. Class discussion about the challenges faced by the British computing pioneers.
        - iii. Field trips to London Museum of Science, Bletchley Park and Manchester Museum of Industry and Trade.
    - ❖ Assessment Methods: Written Assignments and Exams.
4. Students will be able to compare and contrast early developments in the U.K. with later developments in other parts of the world.
    - ❖ Strategies and Actions used to produce the outcome:
        - i. Read about the developments of computing and computing devices in the U.S. and Europe.
        - ii. Class discussion about the challenges faced by the computing pioneers.
        - iii. Field trips to London Museum of Science, Bletchley Park and Manchester Museum of Industry and Trade.
    - ❖ Assessment Methods: Written Assignments and Exams.
5. Students will be able to discuss the social implications of computing in today's world.
    - ❖ Strategies and Actions used to produce the outcome:
        - i. Read about the social implications of computing and information technology.
        - ii. Class discussion about these social implications.

  ❖ Assessment Methods: Written Assignments and Exams.


## Required Materials:

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| • **Jacquard's Web : How a Hand-Loom Led to the Birth of the Information Age** by James Essinger, ISBN 0192805770 | |

- Readings from the Internet
    1. http://plato.stanford.edu/entries/computing-history/
    2. http://ei.cs.vt.edu/~history/
    3. http://www.thocp.net/
    4. http://www.alanturing.net/
    5. http://www.cbi.umn.edu/
    6. Others TBA
- Class videos
- A computer with internet access
- Class blog
- Email account

## Supplemental Materials:
- **The Code Book: The Science of Secrecy from Ancient Egypt to Quantum Cryptography** by Simon Singh, ISBN 0385495323
- **Charles Babbage : Pioneer of the Computer** by Anthony Hyman, **ISBN:** 0691023778
- **Ada, the Enchantress of Numbers: Prophet of the Computer Age** by Betty A. Toole, **ISBN:** 0912647183
- **The Universal History of Computing: From the Abacus to the Quantum Computer** by Georges Ifrah, **ISBN:** 0471441473
- **A History of Modern Computing : Second Edition (History of Computing)** by Paul E. Ceruzzi, **ISBN:** 0262532034
- **The First Computers--History and Architectures (History of Computing)** by Raúl Rojas (Editor), Ulf Hashagen (Editor), **ISBN:** 0262681374

## Assessment of Learning Outcomes:
  ❖ Students are expected to participate in class discussions by reading the assigned materials before class, thinking about the issues and historical patterns suggested in the readings, and relating these issues to their own personal experience. Students will submit a short (one half - one page) reading response paper in the morning before each class (excluding days of field trips). These papers are intended to provoke discussion. The instructor will provide tentative questions for response papers, but students are encouraged to raise their own questions. The response papers will serve as a basis for subsequent discussion in class. This may be done through the class blog.
  ❖ Students are expected to keep a journal of their activities and thoughts throughout the five week class.
  ❖ Assignments for this course also include a final paper (10-15 pages; typed, double-spaced, with 1.25" margins). You may choose any topic that addresses the history of computing. You may choose something close to your own area of expertise, or something completely different. The final paper is due in class by Wednesday of the fourth week. On the last week, students will give

brief presentations (15-20 min.) of their final papers. A proposal for the final paper (1-2 pages) is due in class by Wednesday of the second week. You will receive feedback from the instructor's by the following Monday. The proposal should include:
1. the central theme of the final paper;
2. the historical significance of this question and how it relates to discussions in class;
3. a brief outline; and
4. a tentative bibliography, including both primary and secondary sources.

## The Final grade will be computed as follows:
- Class Participation / Response Papers 100 points
- Journal 100 points
- Final Paper/Presentation 100 points
- Final Exam 100 points

Grades are assigned on a ten-point scale as follows: A - 90-100%; B - 80-89%; C - 70-79%; D - 60-69%; F - 59 and below

## IMPORTANT: No one is exempt from these requirements.

**General Policies:** You are responsible for all class work missed, regardless of the reason for the absence(s).

**Attendance**: Class attendance is MANDATORY. Each missed class or field-trip will result in a drop of one letter grade.

**Workload**: The Board of Regents suggests two hours of outside preparation for each credit hour course during a normal semester. You should plan on spending approximately 30-45 hours each week on this course including field trips. Since students' ability to read for content varies this is only an estimate of required reading and study time. Students will be expected to read, study, and work all projects assigned before the posted deadline. A tentative schedule of topics is provided below.

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**Academic dishonesty**
Academic dishonesty includes, but is not limited to, activities such as cheating and plagiarism (http://aa.colstate.edu/advising/a.htm#Academic%20Dishonesty/Academic%20Misconduct). It is a basis for disciplinary action. Any work turned in for individual credit must be entirely the work of the student submitting the work. **All work must be your own.** [For group projects, the work must be done only by members of the group.] You may share ideas but submitting identical assignments (for example) will be considered cheating. **You may discuss the material in the course and help one another with debugging; however, any work you hand in for a grade must be your own.** A simple way to avoid inadvertent plagiarism is to talk about the assignments, but don't read each other's work or write solutions together unless otherwise directed by your instructor. For your own protection, keep scratch paper and old versions of assignments to establish ownership, until after the assignment has been graded and returned to you. **If you have any questions about this, please see your instructor immediately.** For assignments, access to notes, the course textbooks, books and other publications is allowed. All work that is not your own, MUST be properly cited. This includes any material found on the Internet. Stealing or giving or receiving any code, diagrams, drawings, text or designs from another person (CSU or non-CSU, including the Internet) is not allowed. Having access to another person's work on the computer system or giving access to your work to another person is not allowed. It is your responsibility to prevent others from having unauthorized access to your work.

No cheating in any form will be tolerated. Penalties for academic dishonesty may include a zero grade on

the assignment or exam/quiz, a failing grade for the course, suspension from the Computer Science program, and dismissal from the program. All instances of cheating will be documented in writing with a copy placed in the Department's files. Students will be expected to discuss the academic misconduct with the faculty member and the chairperson. For more details see the Faculty Handbook: http://aa.colstate.edu/faculty/FacHandbook0203/sec100.htm#109.14 and the Student Handbook: http://sa.colstate.edu/handbook/handbook2003.pdf

**Getting help:** You can always contact me during my posted office hours, by e-mail, or by appointment.

**CSU ADA statement:** If you have a documented disability as described by the Rehabilitation Act of 1973 (P.L. 933-112 Section 504) and Americans with Disabilities Act (ADA) and would like to request academic and/or physical accommodations please contact Joy Norman at the Office of Disability Services in the Center for Academic Support and Student Retention, Tucker Hall (706) 568-2330, as soon as possible. Course requirements will not be waived but reasonable accommodations may be provided as appropriate.

**Makeups**: No make-ups will be given for assignments turned in late.

# Tentative Weekly Schedule

****This schedule is subject to change.

| Week Beginning | In class Material | Online Material (TBA) | Field Trips * |
|---|---|---|---|
| Week 1: | Jacquard's Web: Chapters 1-5 (pre-Babbage) | | ❖ Greenwich Royal Observatory |
| Week 2: | Jacquard's Web: Chapters 6-9 (Baggage & Lovelace) | | ❖ London Museum of Science (Babbage, Difference Engine, analog computers) |
| Week 3: | Jacquard's Web: Chapters 10-15 (20$^{th}$ Century) | | ❖ Bletchley Park (Computing Devices, Computing Museum, Enigma, Alan Turing, Turing Machine, Collosus) |
| Week 4: | Jacquard's Web: Chapters 16-17 (the future) | | ❖ Manchester Museum of Industry and Trade (Manchester Computer, early AI) |
| Week 5: | Final Presentations | | |