This course is based upon the premise that New Media—a spectrum of technologies for representation and communication based on the paradigm of computation—represents a once in several century innovation in the representation of knowledge and culture. The goal of the course is to prepare you to participate in this process of innovation by analyzing the emerging genres of New Media and their history, and to design New Media.

To analyze the design challenges and opportunities of this moment, the class will examine key moments in media history to gain perspective on the nature of the process of technological innovation and cultural change. The course will analyze the design of new media in the telephone, the camera, the web, and computer games, using insights and methods from the humanities (i.e., theories of language, communication, and media), using social science techniques to analyze culture and media (i.e., participant-observation, interviewing) and applying basic computational understandings and skills (i.e., how computation works, what programs are, how to write simple programs). To learn the arts of new media design you will work in project groups of 5-6 students to develop concepts and sketches for the redesign of your group’s chosen artifact (i.e., the telephone, the camera, the web, or a computer game).

We have designed the course to continue online through class and project group email lists, class and project group web pages, and a class Wiki. For example, we realize that there’s a lot of great reading, thus you can use the class and group email lists and the Wiki to collaboratively summarize and analyze the readings and lectures by participating online. In each class session, we will ask for students to volunteer to submit discussion questions for each reading for the following class session, and encourage you to share comments on the readings on the Wiki. Please send email about questions or problems to us at: is146-ta@sims.berkeley.edu. The class web site is at: www.sims.berkeley.edu/academics/courses/is146/s05/.

The Course Readers should be available on January 19 from the University Copy Service, located at 2425 Channing Way (510-549-2335). Course required textbooks will be available from the Campus Bookstore, or can be ordered online (i.e., Amazon.com): Seymour Papert’s Mindstorms, W. Daniel Hillis’ The Pattern on the Stone, and Scott McCloud’s Understanding Comics: The Invisible Art.

Class and Section Meetings.

Class Meetings:
- Tuesday and Thursday 2:00 pm – 3:30 pm in 50 Birge Hall

Section Meetings:
- Section 101, Monday 4:00 pm – 5:00 pm in 204 Wheeler with Jeff Heer
- Section 102, Tuesday 4:00 pm – 5:00 pm in 255 Dwinelle with Jeff Heer
- Section 107, Wednesday 3:00 pm – 4:00 pm in 47 Evans with Matthew Rothenberg
Calendar of Readings.

IS146 is designed as a matrix. In the first month of the course we will explore five basic analytic concepts for investigating the nature of new media: representation, technology, history, culture, and design. In the second part of the course we will apply these five concepts to four key technological media: the telephone, the camera, the web, and computer games. We’ll first define the five analytic concepts in a theoretical way, then we’ll apply them to the four media; you’ll see the five themes repeating in new ways, and your own understanding of the design of new media should deepen as we see how theory applies to practice. These readings are in the course reader, with the exception of assignments from required books, as indicated below by [Book].


II. Analyzing and Designing New Media: The Five Concepts for Studying New Media.

A. Representation

January 25. Communication Theory and Sign Systems I


January 27. Communication Theory and Sign Systems II


February 1. Observing New Media Practice


**B. Technology**

February 3. Computation: History and Ideas


February 8. Computation: Programming Concepts


February 10. Computation: Programming Languages


**C. History**

February 15. Computational Media


**D. Culture**

February 17. New Media on the Go and in the Home


**E. Design.**

February 22. Designing New Media

III. The Telephone.

A. Representation. February 24. Speech and Audio as Media


B. Technology. March 1. How a Telephone and Telephone Network Work


C. History. March 3. The Telephone from Bell to Cellphones


D. Culture and Design. March 8. Social Uses of Mobile Phones


IV. The Camera.

A. Representation.

March 10. Reading Visual Representations I


March 15. Reading Visual Representations II


**B. History and Technology.** March 17. History and Technology of Digital Imaging


**C. Culture.** March 29. How Do People Use Images?


**D. Design.** March 31. Case Study: Cameraphone


**V. The Web**

**A. History.** April 5. From Memex to the WWW


**B. Technology.** April 7. Networks and Databases


**C. Representation.** April 12. Places and Cyberspaces


**D. Culture.** April 14. Social Software and Online Communities


**E. Design.** April 19. Case Study: Friendster


VI. Computer Games.

A. History. April 21. From Zork to Doom and Beyond


B. Technology. April 26. 3D Graphics and Simulation Engines


C. Representation. April 28. Human Play and Game Logic


D. Culture. May 3. Social Effects and Reception of Computer Games


E. Design. May 5. Case Study: The SIMS


VII. Course Review May 10. The Future of New Media

IS 146 Course Requirements.

(1) Assignments.

Exams. There will be a midterm examination (March 7, 8, or 9) in section, and a final examination during finals week.

Student Questionnaire. The Student Questionnaire is essential for us to place your in your project group for the design assignments.

Design Assignments. Six design assignments will ask you to work in a project group (5-6 students) to apply concepts from the readings and lectures to redesign your group’s chosen artifact (i.e., the telephone, the camera, the web, or a computer game). Each design assignment will be due about two weeks after it is assigned. Your design assignments don’t require you to build your designs, but to work with your project group to collectively brainstorm, sketch, and describe your solutions to the design problems.

(2) Sections.

Sections are required, which are designed to explore class readings in depth, to work on the six required design exercises, and to receive critique and feedback on your designs. Design teams will work on the projects with GSIs in section, applying readings and lectures, and post your projects on your web pages. At the end of the Semester we’ll have a Poster Section for everyone to show off your design ideas, inviting friends, and experience a new media public event.

(3) Grading.

Your course grade will be comprised of these elements: 50% midterm and design assignments; 30% final exam; 20% attendance and participation.

Tentative Due Dates for Assignments and Exams.

<table>
<thead>
<tr>
<th>Date</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>January 21</td>
<td>Student Questionnaire.</td>
</tr>
<tr>
<td>February 3</td>
<td>Design Assignment 1: Create your project group’s web page.</td>
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<tr>
<td>February 17</td>
<td>Design Assignment 2: Redesign your artifact to make it more programmable.</td>
</tr>
<tr>
<td>March 1</td>
<td>Design Assignment 3: Observe and document your project group’s use of your artifact using ethnographic methods.</td>
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<tr>
<td>March 7-9</td>
<td>Midterm.</td>
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<tr>
<td>April 12</td>
<td>Design Assignment 4: Redesign your artifact to enable new forms of communication.</td>
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<tr>
<td>April 28</td>
<td>Design Assignment 5: Redesign your artifact to enable new forms of social organization.</td>
</tr>
<tr>
<td>May 10</td>
<td>Design Assignment 6: Redesign your artifact to enable new forms of game play.</td>
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<tr>
<td>Finals Week</td>
<td>Final Examination (date and location to be identified)</td>
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<td></td>
<td>Poster Session Celebration (date and location to be identified)</td>
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