USC School of Cinema Television | Interactive Media Division

CTIN 541: Design for Interactive Media

Professor: Anne Balsamo, Scott S. Fisher & CTIN Faculty
Units: 4 units
Location: Zemeckis Media Lab (Rm, 201)

Course Description

This course is a practical exploration and conceptual practicum for graduate students on the fundamental technical and aesthetic principles in the design of interactive media. The goal is to develop design and prototyping skills for working with interactive media, to enhance ability to present and critique, and to increase vocabulary appropriate for discussing interactive work. By the end of the term, students will be prepared to go on to classes in which they design and produce a variety of interactive works.

541 Lecture objectives

The objective of this course is to provide students with the critical and conceptual tools to engage the fundamental issues of design for interactive media. It will explore the thesis that at their most basic level computers are language manipulators as well as mathematical processing devices; we will demonstrate that the most important problems of interactive design involve the creation of expressive languages by which the user and computer communicate with each other. Common pitfalls and problems of interactive design will be examined, with special attention given to the constant need for balance and compromise to help ensure not only that a given interactive product is successful, but also that it is feasible to build given specific limitations in technology and budget.

New and seminal works of interactive entertainment will be analyzed in depth during class sessions. The final project will consist of a preliminary design document describing the essential design characteristics and methods of a hypothetical project conceived by each individual student.

541 Lab objectives

The course with be augmented each week with a Lab, which will teach basic prototyping skills as a means for students to put learned concepts into practice. Students will complete exercises each week that will provide basic, hands-on experience with screen-based interactivity.

1. The first lab module introduces students to fundamentals of prototyping interactive concepts. This is a core design skill used by interactive artists and professionals. It is a skill that will be utilized throughout the MFA program and beyond. In this module, students will work in small teams because interactive media is inherently collaborative. Specialized types of technical, creative, and business talent collaborate and create work that is greater than what an individual can typically create. In these lab sections, students will begin learning team leadership and collaboration skills.

Teams will design one ambitious interactive concept of their choice and this concept will be presented in class and iterated upon on four times. This is because interactive media is inherently iterative and inherently user-oriented - through this process iteration the interactive designer tunes his/her work to create a good user experience. Students will prototype using paper and other table-top materials. The assignment specifically restricts use of the computer in order to study prototyping in a pure form. All of the skills learned via prototyping on paper translate directly over to prototyping with software. Final prototypes will be presented to the class along with a supplemental visual presentation. The ability to communicate complex interactive

concepts simply and visually is another core skill of the interactive artist and professional. The final version of student prototypes and presentations will be portfolio-worthy

2. The Mid -term lab sessions will include several different groups of exercises, each exploring a different aspect of interactive media and supporting completion of the midterm project.

3. The objective of the third lab module of this course is to introduce students to computer programming in the design of interactive media and encourages students to think of themselves as artist/designer/programmers. The primary intention will be to provide a methodology for working with software through the use of the *Processing* programming environment. *Processing* integrates a programming language, development environment, and teaching methodology into a unified structure for learning. Its goal is to introduce programming in the context of electronic art and to open electronic art concepts to a programming audience. Unlike other popular web programming environments such as Flash and Director, *Processing* is an extension of Java and supports many of the existing Java structures, but with a simplified syntax. The application runs locally and exports programs to Java applets, which may be viewed over the Internet. It is not a commercial production tool, but is build specifically for learning and prototyping. Skills learned through *Processing* will enable students to learn languages suitable for different contexts including web authoring (ActionScript), networking and communications (Java), microcontrollers (C), and computer graphics (OpenGL), as well as other available multimedia authoring environments such as Max/MSP/Jitter.

Class Format
This course consists of one two-hour weekly lecture/discussion and one two-hour lab session.

Office Hours
TBD

Projects
- **Midterm Project:**
  Experience and do an in-depth analysis of at least one interactive exhibit or installation. Examples could include:
    - Public Venues such as: Museum of Jurassic Technology, Disneyland, Legoland, Universal Studios, Dave & Busters, Las Vegas venues, local museums, etc.
    - Games
    - Internet (online game or social worlds)
    - Educational Environment (academic or commercial)
    - Other (with instructor's OK)
  Analysis should be in both written report and multimedia format for class presentation at mid-term. Details will be discussed in class.

- **Final Project:**
  The final project will be to design and develop a detailed proposal for an interactive environment. Work may be done either individually or in teams depending on class size. Details discussed in class.

Grading Structure
541 criteria for grading are as follows:
- Midterm Project: 25%
- Final Project: 25%
- Lab assignments:40%

- Participation: 10%

Projects will be evaluated on their originality, aesthetic qualities, and conceptual sophistication. Feedback will be primarily qualitative but numeric scores will also be given for each exercise. All exercises must be completed to pass the course. Students will be graded based on creativity and ability to apply theoretical and design concepts learned to creative applications. Students are also graded for presentation at each phase of the assignment.

Missing an Exam, Incompletes: Both the mid-term and final exam in this seminar are projects rather than written exams. However, USC standards still hold: The only acceptable excuses for missing an exam or taking an incomplete in the course are personal illnesses or a family emergency. Students must inform the professor before the exam and present verifiable evidence in order for a make-up to be scheduled. Students who with to take incompletes must also present documentation of the problem to the instructor before final grades are due.

Academic Integrity:
The School of Cinema-Television expects the highest standards of academic excellence and ethical performance from USC students. It is particularly important that you are aware of and avoid plagiarism, cheating on exams, submitting a paper to more than one instructor, or submitting a paper authored by anyone other than yourself. Violations of this policy will result in a failing grade and be reported to the Office of Student Judicial Affairs. If you have any doubts or questions about these policies, consult "SCAMPUS" and/or confer with the Professor or Department Chair.

Students with Disabilities:
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure that the letter is delivered to the Professor as early in the semester as possible. DSP is located in STU 301 and is open 8:30am – 5:00pm, Monday through Friday. The phone number for DSP is (213) 740-0776.

Course Content & Schedule

Week 1 (8/21): Introduction to the Interactive Media Division – Scott Fisher
- **Lab:** Paper Prototyping (Swain)

Week 2 (8/28): Innovation and Interactive Media – Chris Swain
- **Reading:**
  - The Medici Effect, Chapter 1 – The Intersection: Your Best Chance to Innovate,
  - The Medici Effect, Chapter 2 – The Rise of Intersections
  - The Medici Effect, Chapter 3 – Break Down Barriers Between Fields
- **Lab:** Paper Prototyping (Swain)

Week 3 (9/4): University Holiday – No Class

Week 4 (9/11): Presenting Interactive Concepts Effectively – Chris Swain
- **Reading**:
  - The Medici Effect, Chapter 5 – Randomly Combine Concepts,

o The Medici Effect, Chapter 9 – Execute Past Your Failures
- **Lab:** Paper Prototyping (Swain)

Week 5 (9/18): Dimensions of Interactivity – Scott Fisher
Concepts of interaction, interface, and environments. Background, historical efforts, enabling technologies and platforms.
- **Readings:**
  Online:
  - o "Delusions of Dialog: Control and Choice in Interactive Art" by Jim Campbell (http://www.adaweb.com/context/events/moma/bbs4/campbell.html)
  - o "From A to D and back again: The emerging aesthetics of Interactive Art "by Simon Penny (http://www.ace.uci.edu/penny/texts/AtoD.html)
  Hardcopy:
  - o Essays from ARC - The Interactive Media Festival
    - "Anything interactive - but not just any thing!" by Erkki Huhtamo
    - "Hollywood and Silicon Valley" by Mike Backes
    - "Art, Science and Interactivity" by Jeffery Shaw
  - o "Conversational Desktop " (Lippman on Interactivity) from The Media Lab: Inventing the Future at MIT - Stewart Brand (Viking, 1987)
  - o "Realness and Interactivity" - Michael Naimark from The Art of Human-Computer Interface Design - B.Laurel, Ed. (Addison -Wesley, 1990)
  - o " The Collective Responsibility Vehicle" - David. E. H. Jones from The Inventions of Daedalus - A Compendium of Implausible Schemes (W.H. Freeman & Company 1982)
- **Lab:** Paper Prototyping (Swain)

Week 6 (9/25): The Relationship between Design and Culture – Anne Balsamo
How can we use technology to think with? What are the key elements of design thinking? How does technology become meaningful? How is meaning designed? What are the social practices of design? Can cultural theory contribute to compelling design?
- **Reading**: TBD
- **Lab:** Making Multimedia Anyway We Can (Balsamo)

Week 7 (10/2): Defining Design, Designing, Design Thinking – Anne Balsamo
Reviews the major histories of and theories of design across media and disciplines.
- **Reading:** TBD
- **Lab:** Digital Scrapbooking/Remix Culture (Balsamo)

Week 8 (10/9): The Poetics of Interactivity—Anne Balsamo
How is the design of interactivity an expressive cultural practice? What is the role of narrative in the creation of interactivity? How is the interface a space of possibility and potential, as well as of conflict and contestation? What comes of the play of imagination and design?
- **Reading:** TBD
- **Lab:** The Design of Interactive Narrative—Steve Anderson

Week 9 (10/16): Defining New Media, Information Design – Steve Anderson
- **Reading:** TBD
- **Lab:** Digital Design Tools—Anderson/Balsamo

Week 10 (10/23): Mid-Term Presentations

Week 11 (10/30): Perry Hoberman Presentation
- **Reading:** TBD
- **Lab:** Digital Prototyping/Processing - Bleecker

Week 12 (11/6): Michael Naimark Presentation
- **Reading:** TBD
- **Lab:** Digital Prototyping/Processing - Bleecker

Week 13 (11/13): Mark Bolas Presentation
- **Reading:** TBD
- **Lab:** Digital Prototyping/Processing – Bleecker

Week 14 (11/20): Narrating Design—Anne Balsamo
- **Reading:** TBD
- **Lab:** Digital Prototyping/Processing – Bleecker

Week 15 (11/27): Mapping Possibilities—Anne Balsamo
- **Final Project Write-ups Due**
- **Reading**: TBD
- **Lab:** Digital Prototyping/Processing - Bleecker

Final Exam Day: Final Project Presentations
Present final projects to class and guest critics

CTIN 541 PROJECT GUIDELINES

1. Mid Term Project
- Due: in class, 10/16 (must decide by 10/9 latest)
- Length: 10 to 15 minutes
- Format: verbal **and** written description, photos, video
- What:
    - Describe experience(s) in detail including:
        - Overview and background (who, where, why, etc.)
        - How it works and technology used
        - Describe the experience from the user's point of view
        - Discuss aspects of interaction (degree, role, success, etc.)
        - Propose alternative configurations…how would you make it better?

2. Final Project
  1. Project Description:
   a. Design and develop a detailed proposal for an interactive environment work for a specific location, application, or product. For example: a museum exhibit, an art installation, a website, a wearable computer device, educational software, etc. (Other configurations are Ok also)

   b.   Prepare your proposal as if you were the producer/director of the project and presenting it to a potential sponsor to obtain the resources (equipment, money, etc.) to actually develop the project.

   c. Include the following areas in your proposal and presentation.

1. Concept/Overview/Objective
   -What is the objective, Who is it for, How is it unique, Why should it be done.
2. Exhibit or Installation Description
   - What hardware, what software, layout, look and feel,
   - (Simple Model or prototype layout if possible)
3. User's experience description and scenarios
   - What will they see, feel, hear, and do
   - Key points of the experience
4. Storyboard of proposed experience
   - Drawings, video, photos, etc.
5. Technical requirements
   - List of hardware, software, networking, and any other technical requirements
6. Personnel Requirements
   - List proposed team of 'experts' who will work on the project
7. Development Plan (estimated schedule)
8. Budget (estimated)
9. Appendix
   - Any other materials to support presentation

2. **Due Date (all):** November 27 (Beginning of Class)

3. **Presentations:**
   - Exam Week of Dec. 4
   - 10 to 15 minutes max., 10 minutes discussion

4. **Preparation:** Make an appointment with professor before presentation to discuss your topic and planned approach.