Gerhard Fischer and Hal Eden: "Design, Learning, and Collaboration" — Spring Semester 2004

Syllabus / Schedule of Sessions

http://webguide.cs.colorado.edu:3232/dlc-2004/

*** Subject to Change ***

Remark: Please note that this timetable may be modified and updated at later points of time to account for emerging topics, student interests, student presentations, guest lectures, ... etc.

Introduction and Overview Lectures

January

12   Introduction, Discussion of Class

14   Demos of Envisionment and Discovery Collaboratory/PitaBoard and Clever; — **location: L3D Lab**

19   **no lecture** — Martin King Holiday (university closed)

21   Overview of Design

Assignment 1: due 1/21

26   Overview of Learning → Fischer, G. (1998) "Making Learning a Part of Life-Beyond the 'Gift-Wrapping' Approach of Technology." Notes from 6/96 NSF Symposium on Learning and Intelligent Systems [http://www.cs.colorado.edu/~l3d/presentations/gf-wlf/]

Assignment 2: due 1/26

28   Overview of Collaboration

Assignment 3: due 1/28

Series of Lectures about Design

February

2   Design = The Science of the Artificial → Chapter 8 "The Architecture of Complexity: Hierarchic Systems" in Simon, H. A. (1996) The Sciences of the Artificial, third ed., The MIT Press, Cambridge, MA. + **Videotape "Starfire"**

Assignment 4: due 2/2

4   Domain-Oriented Design Environments and Critiquing → Fischer, G., Nakakoji, K., Ostwald, J., Stahl, G., & Sumner, T. (1998) "Embedding Critics in Design Environments." In M. T. Maybury & W. Wahlster (Eds.), Readings in Intelligent User Interfaces, Morgan Kaufmann, San Francisco, pp. 537-561. + **Video Tape "Janus"**

Assignment 5: due 2/4

9   **<u>Guest Lecture</u>** — Hal Eden: Squeak — An Innovative Programming Environment

                                  Initial Idea about Independent Research Projects Due

11   **<u>Guest Lecture</u>** — Elisa Giaccardi: Meta-Design - Interactive Art **(bring your laptop)**

                     Initial Team and Refined Ideas about Independent Research Projects Due

16   Role Playing with the EDC/PitaBoard — Session 1 — **location: L3D Lab**

                                        Assignment 6: due 2/16

18   New Foundation for Human-Computer Interaction Research → Hollan, J., Hutchins, E., & Kirsch, D. (2001) "Distributed Cognition: Toward a New Foundation for Human-Computer Interaction Research." In J. M. Carroll (Ed.) Human-Computer Interaction in the New Millennium, ACM Press, New York, pp. 75-94.

                                      Assignment 7: due 2/18

23   **Discussion of (a) Themes for Independent Research ("Book Project") and
              (b) Ideas for Projects ("Hands-On")**

                                  Assignment 8: due 2/23

25   Design to Learn and Design to Collaborate → explore two website:
       (1) Computer Clubhouse: at:
              http://web.media.mit.edu/~mres/papers/Clubhouse/Clubhouse.htm
              http://www.computerclubhouse.org/index.htm
       (2) MamaMedia at: http://stage.mamamedia.com/

Series of Lectures about Learning

March

1   **Learning: From Speculation to Science** → Introduction to Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.) (2001) *How People Learn — Brain, Mind, Experience, and School*, National Academy Press, Washington, D.C.

                                      Assignment 9: due 3/1

3   **Lifelong Learning and Self-Directed Learning** → Fischer, G. (2002) *Beyond 'Couch Potatoes': From Consumers to Designers and Active Contributors*, in FirstMonday (Peer-Reviewed Journal on the Internet), at http://firstmonday.org/issues/issue7_12/fischer/

                                  Assignment 10: due 3/3

8   **Learning on Demand and High-Functionality Applications** → Fischer, G. (2001) "User Modeling in Human-Computer Interaction," User Modeling and User-Adapted Interaction (UMUAI), Dordrecht, The Netherlands: Kluwer Academic Publishers, 11(2), pp. 65-86. http://www.cs.colorado.edu/~gerhard/papers/umuai2000.pdf

                  due: Project **Proposal** "Hands-On" (teams); Brief Discussion in Class
                                  Assignment 11: due 3/8

10   **Role Playing** with EDC / PitaBoard — Session 2 — **location: L3D Lab**

15   **<u>Guest Lecture</u>** by Yunwen Ye: CodeBroker → Ye, Y., & Fischer, G. (2002) "Supporting Reuse by Delivering Task-Relevant and Personalized Information." In Proceedings of 2002 International Conference on Software Engineering (ICSE'02), Orlando, FL, pp. 513-523. Available at: http://www.cs.colorado.edu/~gerhard/papers/icse2002.pdf.

17   **Beyond One-Sided Approaches of Learning** → Rogoff, B., Matsuov, E., & White, C. (1998) "Models of Teaching and Learning: Participation in a Community of Learners." In D. R. Olsen & N. Torrance (Eds.), The Handbook of Education and Human Development — New Models of Learning, Teaching and Schooling, Blackwell, Oxford, pp. 388-414.

22   **Spring Break – no lecture**
24   **Spring Break – no lecture**

29:      **Discussion of (a) Independent Research ("Book Project") and (b) Projects ("Hands-On")**
                         due: Progress Reports for both "Book Project" and "Hands-On"
31:      **From "Home Alone" to Collaborative and Organizational Learning** → Chapter 3 "Home Alone" in Brown, J. S. & Duguid, P. (2000) The Social Life of Information, Harvard Business School Press, Boston, MA.

Series of Lectures about Collaboration

April

5   New Forms of Collaborations: learning webs, online communities, social filtering, recommender systems → Terveen, L. & Hill, W. (2001) "Beyond Recommender Systems: Helping People Help Each Other." In J. M. Carroll (Ed.) Human-Computer Interaction in the New Millennium, ACM Press, New York, pp. 487-509.

7   Knowledge Management → Smith, R. G. & Farquhar, A. (2000) *"The Road Ahead for Knowledge Management — An AI Perspective,"* AI Magazine, 21(4), pp. 17-40

12   <u>**Guest Lecture**</u> about "Context Awareness in Collaborative Environments" — Shinichi Konomi

14   Independent Research ("Book Presentation"): Collaborative Learning in Undergraduate Classrooms

19   Independent Research ("Book Presentation"): Design
21   Independent Research ("Book Presentation"): Collaboration in Software Development Process

26   Reviewing and Discussing the Projects ("Hands-On")
28   <u>**Guest Lecture**</u> about Living Organizational Memories — Jonathan Ostwald

*** April 30: last day of classes ***

May

3   **7:30pm – 10:00pm (**during scheduled exam period**) Final Project Presentations**
                         due at 10:00am: Final Report for Projects