

HCI Updated Syllabus with coursebook

Course Contents and Textbooks:

1. Introduction and Overview (3 hours)

- Defining the User Interface
- The Importance of Good Design
- Introduction and history of Human Computer Interaction
- **Textbook:** *The Essential Guide to User Interface Design*, Wilbert O. Galitz, Chapters 1

2. Characteristics of Graphical and Web User Interfaces (6 hours)

- Interaction styles.
- The concept of direct manipulation.
- The characteristics of graphical interfaces.
- The characteristics of Web interfaces.
- Web page versus Web application design.
- The general principles of user interface design.
- **Textbook:** *The Essential Guide to User Interface Design*, Wilbert O. Galitz, Chapters 2

3. Usability Engineering (6 hours)

- Usability and its attributes
- Usability Trade-offs
- Categories of Users and Individual User Differences
- The Usability Engineering Lifecycle
- **Textbook:** *Usability Engineering*, Jakob Nielsen, Chapter 2 and 3

4. User Profiling (4 hours)

- The Human Action Cycle
- Important Human Characteristics in Design (perception, memory, visual acuity, foveal and peripheral vision, sensory storage, information processing, learning, skill, and individual differences.)
- Human Considerations in the Design
- Performance versus Preference
- **Textbook:** *The Essential Guide to User Interface Design*, Wilbert O. Galitz, Part 2 Step 1 (from Page 71)

5. Identifying Needs and Establishing Requirements (4 hours)

- Introduction to requirements
- Types of requirements
- Data Gathering Techniques
- Task Analysis
- **Textbook:** *Interaction Design: Beyond Human-Computer Interaction*, Helen Sharp, Jennifer Preece, Yvonne Rogers, Chapter 7

6. Design, Prototyping and Construction (12 hours)

- Introduction
- Prototyping and construction

- What is a prototype?
 - Why prototype?
 - Low-fidelity prototyping
 - High-fidelity prototyping.
 - Compromises in prototyping
 - Construction: from design to implementation
- Conceptual design: moving from requirements to first design
 - Perspectives for developing a conceptual model
 - Expanding the conceptual model
 - Using scenarios in conceptual design
 - Using prototypes in conceptual design
- Physical Design: getting concrete
 - Guidelines for physical design
 - Different kinds of widget
- Tools Support
- **Textbook:** *Interaction Design: Beyond Human-Computer Interaction*, Helen Sharp, Jennifer Preece, Yvonne Rogers, Chapter 8

7. **User-centered approaches to interaction design (4 hours)**

- Advantages of involving users in development
- Principles of a user-centered design
- Understanding users' work: applying ethnography in design
 - Coherence
 - Contextual Design
- Participatory Design
 - PICTIVE
 - CARD
- **Textbook:** *Interaction Design: Beyond Human-Computer Interaction*, Helen Sharp, Jennifer Preece, Yvonne Rogers, Chapter 9

8. **Evaluation (6 hours)**

- Introduction (What, When and why)
- Formative vs Summative Evaluation
- Evaluation Paradigms
- Evaluation Techniques
- Relationship between evaluation paradigms and techniques
- DECIDE framework
- **Textbook:** *Interaction Design: Beyond Human-Computer Interaction*, Helen Sharp, Jennifer Preece, Yvonne Rogers, Chapter 10 and 11
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