Topics:

- **User-Centered Design (UCD)**

- **Usability Principles**

- **Prototyping**

- **Task Analysis**

- **Wireframes and Personas**

- **Scenario-Based Design**

- **Iterative Design**

-

UNIT 2: Design Processes

2.1 Interaction Design

- Interaction design focuses on designing interfaces that allow users to accomplish tasks easily and effectively.

- Emphasizes creating intuitive systems by understanding user needs and designing with a user-centered approach.

2.2 Usability Principles

- **Learnability**: Can users learn to use the system quickly? E.g., Windows operating system is easy for beginners.

- **Efficiency**: Once users learn, how quickly can they perform tasks? E.g., keyboard shortcuts.

- **Memorability**: How easily users can recall the interface after returning. E.g., consistent layouts.

- **Errors**: Minimizing mistakes and making recovery easy. E.g., undo features in apps.

- **Satisfaction**: User experience and how enjoyable the system is. E.g., pleasant animations in mobile apps.

2.3 Design Process

- **User-Centered Design (UCD)**: Process that involves users in every phase of design.

- **Iterative Prototyping**: Building low-fidelity prototypes (paper sketches) and testing them to gather feedback and improve the design.

2.4 Shneiderman's 8 Golden Rules

1. **Consistency**: Keep interface elements consistent (buttons, icons).

2. **Feedback**: Provide feedback after actions (e.g., a loading spinner).

3. **Closure**: Provide actions that complete tasks, like "Save" buttons.

4. **Error Prevention**: Disable invalid options (e.g., grey-out unavailable menu options).

5. **Reversible Actions**: Allow users to undo actions.

6. **Internal Locus of Control**: The user should feel in control of the system.

7. **Minimize Cognitive Load**: Reduce memory burden by offering easy-to-remember tasks and functions.

8. **Provide Shortcuts**: Include keyboard shortcuts for experienced users.

UNIT 2: Design Processes

1. Define User-Centered Design (UCD). Describe the process and explain its importance in creating user-friendly interfaces.

2. What are the usability principles in HCI? How can designers ensure that interfaces are efficient and easy to use?

3. Discuss Shneiderman's 8 Golden Rules of Interface Design with examples.

4. Explain the role of prototyping in interface design. Discuss the differences between low-fidelity and high-fidelity prototypes.

5. How can task analysis help in improving the usability of an interface? Provide examples.

6. What are the different techniques for collecting user feedback during the design process?

7. Discuss the process of creating wireframes in the interface design process. Why are wireframes important?

8. Explain the significance of personas in user-centered design. How are they created and used?

9. What is the role of scenario-based design in the development of interactive systems?

10. How does iterative design contribute to user interface improvement? Provide examples.

11. Explain the importance of color and typography in interface design. How do they impact user experience?

12. What is the difference between a task model and a user model in HCI design?