



Principles of Universal Design

A working group of architects, product designers, engineers, and environmental design researchers collaborated to establish Principles of Universal Design to guide a wide range of design disciplines.

The Principles of Universal Design were authored by the Center for Universal Design at North Carolina State University, through a grant by the National Institute on Disability and Rehabilitation Research.

Principle 1

Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines:

1. Provide the same means of use for all users: identical whenever possible, equivalent when not.
2. Avoid segregating or stigmatizing any users.
3. Make provisions for privacy, security, and safety equally available to all users.
4. Make the design appealing to users.

Principle 2

Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

1. Provide choice in methods of use.
2. Accommodate right-or left-handed access and use.
3. Facilitate the user's accuracy and precision.
4. Provide adaptability to the user's pace.

Principle 3

Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

1. Eliminate unnecessary complexity.
2. Be consistent with user expectations and intuition.
3. Accommodate a wide range of literacy and language skills.
4. Arrange information consistent with its importance.
5. Provide effective prompting and feedback during and after task completion.

Principle 4

Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

1. Use the different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
2. Maximize "legibility" of essential information.
3. Differentiate elements in ways that can be described (i.e. make it easy to give instructions or directions).
4. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Principle 5

Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

1. Arrange elements to minimize hazards and errors: most used elements are most accessible; hazardous elements eliminated, isolated, or shielded.
2. Provide warnings of hazards and errors.
3. Provide fail-safe features.
4. Discourage unconscious action in tasks that require vigilance.

Principle 6

Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines: Allow user to maintain a neutral body position.

1. Use reasonable operating forces.
2. Minimize repetitive actions.
3. Minimize sustained physical effort.

Principle 7

Size & Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:

1. Provide a clear line of sight to important elements for any seated or standing user.
2. Make reach to all components comfortable for any seated or standing user.
3. Accommodate variations in hand and grip size.
4. Provide adequate space for the use of assistive devices or personal assistance.