



Physical Environments and Products

For on-site instruction ensure that facilities, activities, materials, and equipment are physically accessible to and usable by all students and that diverse student characteristics are addressed in safety considerations.

- *Ensure physical access to facilities.* Use classrooms, labs, workspaces, and fieldwork sites that are accessible to individuals with a wide range of physical abilities. [UD 6, 7; UDL 1, 3]
- *Arrange instructional spaces to maximize inclusion and comfort.* Position chairs to encourage participation and give each student a clear line of sight to the instructor and visual aids. Allow room for wheelchairs, personal assistants, sign language interpreters, and captionists. Minimize distractions (e.g., put small groups in quiet work areas). Encourage administrators to routinely apply UD principles in the design of facilities and renovations. [UD 2, 6, 7; UDL 1, 3]
- *Ensure that everyone can use equipment and materials.* Minimize nonessential physical effort. Provide options for operation of equipment, handles, locks, cabinets, and drawers from different heights, with different physical abilities, and by using a right or left hand. Use large print to label controls on lab equipment and other educational aids, using symbols as well as words. Provide straightforward spoken and printed directions for operation. [UD 3–7; UDL 2; WCAG]
- *Ensure safety.* Consider potential issues for people with specific disabilities in emergency situations. Develop procedures for all potential students, including those who are blind, deaf, or wheelchair users. Label safety equipment in simple terms, in large print, and in a location viewable from a variety of angles. Provide spoken and printed safety instructions. [UD 3, 4, 6, 7]

Delivery Methods

Use multiple instructional methods that are accessible to all learners.

- *Make content relevant.* Put learning in context. Incorporate multiple examples and perspectives to make specific concepts relevant to individuals with diverse characteristics such as age, ability, gender, ethnicity, race, socioeconomic status, and interests. [UD 1; UDL 1, 3]

- *Select flexible curriculum.* Choose textbooks and other curriculum materials that address the needs of students with diverse abilities, interests, and learning preferences; are well organized; emphasize important points; provide references for gaining background knowledge; include indices and glossaries; and have chapter outlines, study questions, and practice exercises. Consider the use of digital materials that provide feedback, background information, vocabulary, and other supports based on student responses. [UD 2–5; UDL 1, 3; WCAG]
- *Provide cognitive supports.* Summarize major points; give background and contextual information and deliver effective prompting. Offer outlines, summaries, graphic organizers, and other scaffolding tools to help students learn. Provide options for gaining background information, and vocabulary. At the beginning of a lesson, consider posing one or two questions and ask students to answer them at the end of the session. [UD 2–5; UDL 1–3; WCAG]
- *Provide multiple ways to learn.* Use multiple modes to deliver content e.g., reading, lectures, collaborative learning, small group discussions, hands-on activities, internet simulations, and fieldwork). [UD 2–4; UDL 1, 2; WCAG]
- *Deliver instructions clearly and in multiple ways.* Make instructions clear in the syllabus and follow up with a question and answer session. Ask students to summarize instructions to ensure understanding. [UD 3, 4; UDL 1; WCAG]
- *Use large visual and tactile aids.* Use large manipulatives and images to demonstrate content; use a computer to enlarge microscope images. [UD 3, 4; UDL 1; WCAG]
- *Make each teaching method accessible to all students.* Consider a wide range of abilities, interests, learning styles, and experiences when implementing each instructional method to ensure engagement of all students. Describe content presented visually. [UD 2, 4, 5; UDL 1, 2; WCAG]

Information Resources and Technology

Ensure that course materials, notes, and other information resources are engaging, flexible, and accessible for all students.

- *Select materials early.* Choose materials and prepare a syllabus early to allow students the option of beginning to read materials and work



- on assignments before the course begins and time to arrange for alternative formats. [UD 4; UDL 1; WCAG]
- *Provide content in accessible, universally designed formats.* Select or create materials (including textbooks, syllabi, lesson pages, presentation materials) that are universally designed. For example, use electronic materials that are text-based, have flexible features, use formatted headings and lists, describe content within images, have consistent layouts and organization schemes, whose link text describes its destination, use large sans serif fonts on uncluttered pages with plain backgrounds, and incorporate color combinations that are high contrast and can be distinguished by people with color blindness. Use captioned videos and provide transcriptions for audio presentations. Apply accessibility standards to websites. [UD 4; UDL 1; WCAG]
 - *Accommodate a variety of reading and technology, skills.* Present content in a logical, straightforward manner and in an order that reflects its importance. Avoid unnecessary jargon and complexity and define new terms when they are presented. Create materials in simple, intuitive formats. Provide options for gaining the technology skills needed for course participation. Share relevant campus resources with students. [UD 3, 4; UDL 1]
 - *Ensure the availability of appropriate assistive technology.* If computer or science labs are used, ensure that assistive technology for students with disabilities is available or can be readily acquired. [UD 2, 4, 6, 7; UDL 1, 2; WCAG]
- *Minimize time constraints when appropriate.* Plan for variety in the ability of students to complete work by describing assignments well in advance of due dates, ideally in the syllabus. Allow extended time on tests, unless speed is an essential course objective. [UD 2, 3]
 - *Offer regular feedback and corrective opportunities.* Allow students to turn in parts of large projects for feedback before the final project is due. Give students resubmission options to correct errors in assignments and exams. Arrange for peer feedback when appropriate. [UD 5; UDL 2, 3]
 - *Provide multiple ways for students to demonstrate what they have learned.* Assess group and cooperative performance, as well as individual achievement. Consider using traditional tests with a variety of item types (e.g., multiple choice, essay, short answer), group work, demonstrations, portfolios, term papers, and presentations as options for demonstrating knowledge. Provide students choices in assessment methods when appropriate. [UD 2, 4; UDL 3; WCAG]
 - *Monitor and adjust.* Regularly assess students' background knowledge and current learning informally (e.g., through class discussions) and formally (e.g., through frequent, short exams), and adjust instructional content and methods accordingly. [UD 5]
 - *Provide sample test questions, exemplary work, and study guides.* Consider sharing sample test questions with answers and exemplary work of previous students, discussing how to study for course exams, and providing study guides. [UD 3; UDL 3; WCAG]

Feedback and Assessment

Regularly assess students' progress, provide specific feedback on a regular basis using multiple accessible methods and tools, and adjust instruction accordingly

- *Set clear expectations.* Keep academic standards consistent for all students, including those who require accommodations. Provide clear statements of expectations for the course, individual assignments, deadlines, and assessment methods. Include straightforward grading rubrics for assignments. [UD 3; UDL 3]
- *Test in the same manner in which you teach.* Ensure that a test measures what students have learned and not their ability to adapt to a new format or style of presentation. [UD 3; WCAG]

Accommodations

Plan for accommodations for students whose needs are not fully met by the instructional content and practices.

- *Know how to arrange for accommodations.* Learn campus protocols for getting materials in alternate formats, captioning videos, and arranging for other accommodations for students with disabilities. [UD 1, 2, 4, 6]
- *Share accommodation information.* Tell how to arrange accommodations on the syllabus. Tell teaching and lab assistants about student accommodations. [UD 1; UDL 2, 3]



Checklist Updates and Resources

This checklist was field tested at more than twenty postsecondary institutions nationwide.⁵ To increase the usefulness of this working document, send suggestions to sherylb@uw.edu.

A video titled *Equal Access: Universal Design of Instruction*⁶ is available online. For more information and resources regarding applications of UD to education, and checklists for making a tutoring and learning center or other services accessible to students with disabilities, consult The Center for Universal Design in Education website.⁷ The book *Universal Design in Higher Education: From Principles to Practice, Second Edition* published by Harvard Education Press; offers perspectives from UD leaders nationwide. To learn more and order online visit the DO-IT website.⁸

Cited Resources

1. www.ncsu.edu/www/ncsu/design/sod5/cud/about_ud/udprinciples.htm
2. udlguidelines.cast.org/
3. cast.org/udl/
4. www.w3.org/WAI/standards-guidelines/wcag/
5. www.uw.edu/doit/do-it-admin-project-help-postsecondary-student-services-administrators-work-successfully-students
6. www.uw.edu/doit/videos/index.php?vid=13
7. www.uw.edu/doit/programs/center-universal-design-education/overview
8. www.uw.edu/doit/universal-design-higher-education-principles-practice-1

About DO-IT

DO-IT (Disabilities, Opportunities, Internetworking, and Technology) serves to increase the successful participation of individuals with disabilities in challenging academic programs and careers. Primary funding for DO-IT is provided by the National Science Foundation, the State of Washington, and the U.S. Department of Education.

Acknowledgment

The Center for Universal Design in Education as well as this publication are based on work supported by the U.S. Department of Education (Grant #P33A020042, #P333A020044, #P333A050064). However, the contents do not necessarily represent the policy of the Department of Education, and you should not assume its endorsement.

For further information, to be placed on the DO-IT mailing list, or to request materials in an alternate format, contact:

DO-IT

University of Washington

Box 354842

Seattle, WA 98195-4842

doit@uw.edu

www.uw.edu/doit/

206-685-DOIT (3648) (voice / TTY)

888-972-DOIT (3648) (toll free voice / TTY)

509-328-9331 (voice / TTY) Spokane

206-221-4171 (FAX)

Founder and Director: Sheryl Burgstahler, Ph.D.

Copyright © 2020, 2017, 2015, 2013, 2011, 2010, and 2008, University of Washington. Permission is granted to copy these materials for educational, noncommercial purposes provided the source is acknowledged.



University of Washington
College of Engineering
UW Information Technology
College of Education

Communication Hints

Treat people with disabilities with the same respect and consideration with which you treat others. Here are some helpful hints when it comes to delivering a presentation, hosting an exhibit, and otherwise relating to people with disabilities.

General

- Ask a person with a disability if that person needs help before providing assistance.
- Talk directly to the person with a disability, not through their companion or interpreter.
- Refer to a person's disability only if it is relevant to the conversation.
- Avoid derogatory slang or negative descriptions of a person's disability. For example, "a person who uses a wheelchair" is more appropriate than "a person confined to a wheelchair." A wheelchair is not confining—it's liberating!
- Provide information in alternate means (e.g., written, spoken, diagrams).
- Do not interact with a person's guide dog or service dog unless you have received permission to do so.
- Do not be afraid to use common terms and phrases, like "see you later" or "let's go for a walk" around people with disabilities.
- Do not touch mobility devices or assistive technology without the owner's consent.
- Do not assume physical contact—like handshakes, high-fives, or hugs—is okay.
- Understand that not everyone uses eye contact.

Blind or Low Vision

- Be descriptive. Say, "The computer is about three feet to your left," rather than "The computer is over there."
- Speak all of the projected content when presenting and describe the content of charts, graphs, and pictures.
- When guiding people, offer them your arm rather than grabbing or pushing them.

Learning Disabilities

- Offer directions or instructions both orally and in writing. If asked, read instructions to individuals who have specific learning disabilities.

Mobility Impairments

- Consider carrying on a long conversation with an individual who uses a wheelchair from a seated position.

Speech Impairments

- Listen carefully. Repeat what you think you understand and then ask the person to clarify or repeat the portion that you did not understand.

Deaf or Hard of Hearing

- Face people and avoid covering your mouth, so they can see your lips. Avoid talking while chewing gum or eating.
- Speak clearly at a normal volume. Speak louder only if requested.
- Repeat questions from audience members.
- Use paper and pencil, or type things out on your cell phone, if the person who is deaf does not read lips or if more accurate communication is needed.
- When using an interpreter, speak directly to the person who is deaf; when an interpreter voices what a person who is deaf signs, look at the person who is deaf, not the interpreter.

Psychiatric Impairments

- Provide information in clear, calm, respectful tones.
- Allow opportunities for addressing specific questions.