Universal Design of Instruction

UDI Definition
The design of teaching and learning products and environments “to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.”

UDI Process
To apply UDI, instructors should consider the potential variation in individual skills, learning styles and preferences, age, gender, sexual orientation, culture, abilities, and disabilities as they select appropriate content and strategies for the delivery of instruction and then apply universal design to all course activities and resources. Specifically, an instructor needs to

1. Identify the course and evidence-based teaching practices. Describe the course, learning objectives, and content. Adopt overall teaching and learning philosophies (e.g., constructivism) and evidence-based practices (e.g., active learning).

2. Consider the diverse characteristics of potential students. Describe the population of students eligible to enroll in the course and then consider their potential diverse characteristics—with respect to gender; age; ethnicity; race; native language; learning preferences; size; abilities to see, hear, walk, manipulate objects, read, speak—and the challenges they might encounter in your course.
3. Integrate UDI with evidence-based teaching practices. Apply UDI strategies (underpinned by relevant UDHE principles) in concert with evidence-based instructional practices in the choice of teaching methods, curricula, and assessments as well as to all teaching practices and materials to maximize the learning of students with diverse characteristics.

4. Plan for accommodations. Learn campus procedures for addressing accommodation requests (e.g., arranging for sign language interpreters) from specific students for whom the course design does not already provide full access. Include information about how students can request accommodations in the syllabus.

5. Evaluate. Monitor the effectiveness of instruction through observation and assessments of learning and collect formative feedback from students. Make modifications based on the results. Return to step 3 if your evaluation suggests further improvements to your course should be made.

UDI Principles

1. Equitable use. The design is useful and marketable to people with diverse abilities. Example: A professor’s website is designed so that it is accessible to everyone, including students who are blind and using text-to-speech software.

2. Flexibility in use. The design accommodates a wide range of individual preferences and abilities. Example: A museum that allows visitors to choose to read or listen to a description of the contents of display cases.

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. Example: Control buttons on science equipment are labeled with text and symbols that are easy to understand.

4. Perceptible information. The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities. Example: A video presentation projected in a course includes captions.

5. Tolerance for error. The design minimizes hazards and the adverse consequences of accidental or unintended actions. Example: Educational software provides guidance and background information when the student makes an inappropriate response.
6. Low physical effort. The design can be used efficiently, comfortably, and with a minimum of fatigue. Example: Doors to a lecture hall open automatically for people with a wide variety of physical characteristics.

7. Size and space for approach and use. Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user’s body size, posture, or mobility. Example: A flexible science lab work area has adequate workspace for students who are left- or right-handed and for those who need to work from a standing or seated position.

UDI Principles

Class Climate

Adopt practices that reflect high values with respect to diversity, equity, and inclusion.

- Welcome everyone. Create a welcoming environment for all students. Learn students’ names. Build rapport. Encourage the sharing of multiple perspectives. Demonstrate and demand mutual respect. Include a civility statement with behavioral expectations in the syllabus.
- Avoid stereotyping. Offer instruction and support based on student performance and requests, not simply on assumptions that members of certain groups (e.g., students with certain types of disabilities or from specific racial or ethnic groups) will automatically do well or poorly or require certain types of assistance.
- Be approachable and available. Welcome questions, seek out a student’s point of view and respond patiently. Encourage students to meet with you, maintain regular office hours, and suggest alternatives when student schedules conflict with those hours.
- Motivate all students. Use teaching methods and materials that are motivating and relevant to students with diverse characteristics, such as age, gender, cultures, and interests.
- Address individual needs in an inclusive manner. Both on the syllabus and in class, invite students to meet with you to discuss disability-related accommodations and other learning needs.
- On the syllabus, list URLs and other contact information for tutoring and writing centers, disability services, and other campus services that may be helpful.
- Avoid segregating or stigmatizing any student. Do not draw undue attention to a difference (e.g., disability) or share private information (e.g., a specific student’s accommodation).

**Interaction**

Encourage regular and effective interactions between students and the instructor, employ multiple communication methods, and ensure that communication methods are accessible to all participants.

- Offer multiple options for communication and collaboration. Employ interactive teaching techniques. Use in-person, phone, and multiple electronic communication methods when possible. Make interactions accessible to all participants, including those with disabilities. When meeting on-site, face the class, speak clearly, consider using a microphone, and make eye contact with students.
- Require inclusive cooperative learning. Assign group work for which learners must engage using a variety of skills and roles. Encourage different ways for group members to interact with each other, insist that all students participate, and facilitate their engagement as needed to ensure that participants communicate in ways that are accessible to and inclusive of all group members.

**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.
• Select a 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.

• 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.

• 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.

• 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.

• 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 the engagement of all students. Describe content presented visually.

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.
• 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 the 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.

• 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 technical skills needed for course participation. Share relevant campus resources with students.

• 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.

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.

• 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.
- 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.

- 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.

- 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 with choices in assessment methods when appropriate.

- 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.

- 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.