Universal Instructional Design Principles
University of Guelph

This reference sheet is for instructors wishing to apply Universal Instructional Design principles to the following four domains:

1. the design of learning (courses, activities, assignments, assessment)
2. the planning of delivery strategies
3. the design of materials or tools (manuals, CDs, learning objects, handouts), and
4. the design of environments (websites, classrooms, learning spaces)

The first column describes the principle, the second examples from the four domains, and the final, how UID principles can help instructors

* ✹ achieve the University's Learning Objectives and Strategic Plan
* 📖 fulfill the widely recognized Seven Principles for Good Practice in Undergraduate Education
* ♿ meet its obligations under the Ontarians with Disabilities Act (ODA) and other emerging Canadian legislation concerning accessibility.

Principle	Examples	Goals
1. **Accessible and fair (equitable) use** All students should ideally use the same means to fulfill course requirements – identical if possible, equivalent when not. Instruction should be designed to be useful and accessible by people with different abilities, respectful of diversity, and with high expectations for all students.	Design of Learning • using web-based course with online resources so students can access materials in electronic formats as needed Design of Environments • using accessibility checkers on websites: • http://www.contentquality.com/ • http://bobby.watchfire.com/ • http://validator.w3.org/	✹ learner-centredness ✹ open learning ✹ internationalism ✹ global understanding 📖 engage in active learning 📖 facilitate time on task 📖 accommodate various learning styles ♿ ODA

2. **Flexibility in use, participation and presentation** Learning is most effective when it is **multimodal** – when material is presented in multiple forms, and when students have multiple means of accessing and interacting with material and demonstrating their knowledge (being evaluated). Instruction is designed to meet the needs of a broad range of learner preferences. Students can interact regularly with the instructor and their peers.	Design of Learning • designing resources so they can be reused in a number of ways (e.g., in class, online) • providing choice in assignment topics, formats, and due dates when possible • using online discussion, and group work to foster peer-to-peer learning • posting exercises and quizzes on a website that students use outside of class to learn on their own Delivery Strategies • presenting information using a variety of media: text, graphics, audio and video • using a variety of strategies during lecture such as discussion or problem-solving	✳ learner-centredness ✳ literacy ✳ numeracy ✳ internationalism 📖 allow collaboration among students 📖 engage in active learning 📖 provide prompt feedback 📖 facilitate time on task 📖 accommodate various learning styles ♿ ODA
3. **Straightforward and consistent** Instruction is designed in a clear and straightforward manner, consistent with user expectations. Tools are intuitive. Unnecessary complexity or distractions that may detract from the learning material or tasks are reduced or eliminated.	Design of Learning • ensuring course content, assessment, and learning objectives are all consistent • designing activities or assignments to minimize non-critical tasks (e.g., avoiding the need to learn non-essential software so that students can begin learning immediately • applying grading standards consistently across students and assignments Delivery Strategies • structuring class time in a consistent manner • differentiating between essential and supplementary information Design of Materials or Tools • organizing information on a web page or manual in a manner that make it easy to navigate • structuring and formatting material for easy readability • testing new technology resources for usability	✳ learner-centredness 📖 facilitate time on task 📖 communicate high expectations ♿ ODA

4. **Information is explicitly presented and readily perceived** Course expectations are transparent. Instructions are easy to understand. Communication is clear. Any barriers to receiving or understanding are removed. Information may be presented in multiple forms.	Design of Learning • providing SMART (specific, measurable, achievable, relevant and timely) learning objectives • making expectations and instructions about assignments explicit • providing a grading scheme or rubric along with examples • providing policies, procedures, and expectations in the course outline Delivery Strategies • facing the class and making eye contact when speaking • using tools such as a microphone, PowerPoint, etc. in class to ensure that information is communicated effectively Design of Materials or Tools • providing lecture outlines online that students can annotate during class • creating digital forms of hard-copy materials • using ALT (alternate text) tags for any images on web pages so that these may be identified by screen reading programs used by text-only browsers or students with disabilities	📖 encourage contact between students and faculty 📖 facilitate time on task 📖 communicate high expectations 📖 accommodate various learning styles ♿ ODA
5. **Supportive learning environment** Instruction anticipates that students will make mistakes. While instruction recognizes that errors are necessary, and if handled properly, present powerful learning opportunities, it tries to minimize hazards that can lead to irreversible errors and failures. Instruction also recognizes that systems will fail and things can go wrong - thus, a tolerance for error and preparation by way of backup are important so that learning will not be interrupted.	Design of Learning • breaking large assignments into components so that students can receive formative feedback to minimize or correct errors • providing frequent opportunities for assessment and feedback during a semester. • providing a list of frequently asked questions about an assignment • using online quizzes or tutorials that provide a safe environment to identify weaknesses. • providing students with ample time for online work in case of system failure Design of Materials or Tools • ensuring that software provides feedback when a user makes an inappropriate selection Design of Environment • implementing safety procedures in labs so that unintended actions do not have catastrophic effects (e.g., injury)	✳ learner-centredness 📖 encourage contact between students and faculty 📖 provide prompt feedback 📖 accommodate various learning styles ♿ ODA

6. **Minimize or eliminate unnecessary physical effort or requirements** Instruction is designed to minimize *non-essential* physical effort (i.e., not related to a learning outcome) in order to allow maximum attention to learning.	Design of Learning • allow the use a word processor whenever possible for submissions Delivery Strategies • placing reserve materials online so students do not need to physically travel to a library • allowing assignments to be submitted electronically	🕮 facilitate time on task ♿ ODA
7. **Learning space accommodates both students and methods** The learning space is accessible and the environment supports multiple instruction strategies.	Design of Environments • in small classes, using circular seating arrangements during discussion to allow students to see one another's faces • providing enough left-handed seats	🕮 allow collaboration among students 🕮 engage in active learning 🕮 communicate high expectations 🕮 facilitate various learning styles ♿ ODA

References

Bowe, F. G. (2000) Universal Design in Education. CT: Bergin & Garvey.

Burgstahler, S (ND) Universal Design of Instruction. Accessed April 13, 2005 from http://www.washington.edu/doit/Brochures/Academics/instruction.html

Chickering, A.W., Gamson, Z.F. (1991). Seven Principles for Good Practice in Undergraduate Education. Accessed April 20, 2005 from http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm.

Government of Ontario. (ND). "2005-2006 Accessibility Plan." Accessed April 20, 2006 from http://www.citizenship.gov.on.ca/english/accessibility/index.htm.

Scott, S., Shaw, S. & McGuire, J. (in press). "Applying Universal Design to College Instruction." University of Connecticut. Accessed April 7, 2006 from http://www.facultyware.uconn.edu/files/UDI_principles.pdf

Learning Objectives http://www.uoguelph.ca/undergrad_calendar/c02/c02-learningobjectives.shtml