

Connecting Career and Technical Education to

Students with Disabilities/ Special Education

An individual who has a physical or mental impairment that substantially limits one or more of the major life activities of that individual or who has been evaluated as needing special education and related services

Possibilities

Students with Disabilities can...

- Practice disclosing their disability and testing which accommodations work for them
- See if they can perform essential functions of a particular job, with or without reasonable accommodations
- Break through the isolation that sometimes comes with a disability

Categorizing People

Avoid grouping people with disabilities into categories such as “the handicapped” or the “disabled people.” Use language that reflects the idea that children/adults with disabilities are individuals and not a group with generalized traits.

Etiquette—Using Respectful Language

If the disability is totally irrelevant, reference to it should be omitted entirely. For example, it is more appropriate to say, “I read a bedtime story to my daughter” rather than “I read a bedtime story to my blind daughter.”

Rule: It's the “Person First” – then the Disability (and only when needed)

Do Say....

Child with a disability
Person with cerebral palsy
Person who has...
Without speech, nonverbal
Developmental delay
Emotional disorder, or mental illness
Psychiatric disability
Person who is deaf or hard of hearing
Uses a wheelchair
Person with developmental disability
With Down's syndrome
Has a learning disability
Non-disabled
Congenital disability
Condition
Seizures
Mobility impaired
Medically involved, or chronically ill
Paralyzed
Has quadriplegia (paralysis of both arms and legs)
Has paraplegia (loss of function in lower body only)
Of short stature

Don't Say....

disabled or handicapped child
palsied, or CP, or spastic
afflicted, suffers from, victim
mute or dumb
slow
crazy or insane
insane
deaf and dumb
confined to a wheelchair
retarded
Mongoloid
is learning disabled
normal, healthy
birth defect
disease (unless it is a disease)
fits
lame
sickly
invalid or paralytic
quadriplegic

paraplegic

dwarf or midget

Words to Avoid

Avoid words that have negative or judgmental connotation. Words such as these fail to demonstrate respect and do not recognize the person's strengths and abilities. Avoid using words such as these:

Afflicted	Confined	Disease
Crippled	Drain or burden	Uplifting
Stricken	Inspirational	Poor
Suffers from	Unfortunate	Victim

From *A Model for Accessibility: A Comprehensive Guide to Disability Accessibility*, University of Hawai'i Center on Disability Studies. For more information on accessibility, web access, employment and research, the entire report is posted for download at www.cds.hawaii.edu.

Accessibility Checklist

The following was first developed by a faith-based organization and reprinted in *A Model for Accessibility*. Some are required by law while others are common courtesies. Not all accommodations are possible on short notice, but this is a good starting point and guide for long range planning. Nothing says "Welcome" better to someone with a disability than an accessible facility.

Basic Accessibility Awareness

- ___ Are printed materials available in large print? (18 point font is considered large print.)
- ___ Are printed materials also available in Braille?
- ___ Is the meeting site free of background noise?
- ___ For public meetings, is a "Sign language interpreter available upon request" notice in advertisements?
- ___ Is disability awareness training available?
- ___ Is the indoor/outdoor play equipment accessible to children with physical and sensory impairments?
- ___ Is wheelchair accessible seating available in the classroom/lab?
- ___ Is the carpet no more than 1/2" thick?
- ___ Is there visual and auditory fire alarm control 48" from the floor?
- ___ Is there a basic plan of evacuation for persons in wheelchairs, those who are blind, or those with any mental disability who would need assistance in an emergency?
- ___ Are walks of a continuing common surface not interrupted by steps?

Communication

- ___ Are lectures presented verbally and visually?
- ___ Are they on tape?
- ___ Are printed lectures available?
- ___ Are Sign Language interpreters and captioners available?
- ___ Is a system offered where one-on-one assistance is provided?

Parking/Parking Lot and Other Transportation

- ___ Is there adequate handicapped parking nearby building entrances?
- ___ Are the accessible parking spaces clearly marked?
- ___ Is it possible to get from a parked car to any area in the building without going up or down a step or steps?

Doors, Doorways, Entrances, and Exits

- ___ Can manual doors either be opened electrically by the push of a button or do they have lever handles or push bars which require a single effort?
- ___ Can doors be opened by exerting 5 lbs. of pressure or less?
- ___ Do doors have a clear opening of 36" or more?
- ___ Is there a 5' diameter or T-shape of clear space to make turns?
- ___ Are doors operable by a single effort? (Note: Double doors are not satisfactory unless they operate by a single effort and one of the two doors meets the 36" width requirement.)
- ___ Is at least one primary entrance to each building usable by individuals in wheelchairs?
- ___ Is the path of travel between furniture, etc., at least 36" wide? (42" is preferred)
- ___ When sitting at a table is required, is there at least 27" clearance on either side?

Restrooms

- ___ Are entrances and doors at least 36" wide?
- ___ Is there at least one bathroom stall that...
 - ___ a) is at least 36" wide? (42" is preferred)
 - ___ b) has a 48" clear depth from the door to the front of the commode?
 - ___ c) has a door that is at least 32" wide and swings out? (36" is preferred)
 - ___ d) has grab bars on at least one side and one in the back which meet specifications?
 - ___ e) has a commode with the seat 17" to 19" from the floor?
 - ___ f) has a turning space of 5' x 5'?
- ___ Is there at least one accessible bathroom stall provided on each floor?
- ___ Does the sink have 29" of clearance from the floor to the bottom of the sink?
 - ___ a) Are there lever-type faucet controls?
- ___ Are the towel dispensers, soap dispensers, mirrors, and hand dryers no higher than 40" from the floor?

Water Fountains

- ___ Are at least half of the water fountains accessible?
- ___ Is the spout no more than 36" from the floor?
- ___ Are they easily operated by users in wheelchairs?
- ___ Is there at least one water fountain on each floor that is usable and accessible by persons who are physically disabled?

"Aerodynamically the bumble bee shouldn't be able to fly, but the bumble bee doesn't know it so it goes on flying anyway."

– Mary Kay Ash

Examples of Academic Adjustments

Low Vision

- Large print for
 - lab handouts
 - lab signs
 - equipment labels
- TV monitor connected to a microscope to enlarge images
- Class assignments made available in electronic format
- Computer software to enlarge screen characters and images
- Note takers

Blindness

- Audiotaped or Brailled lecture notes, handouts and texts
- Raised-line drawings and tactile models of graphic materials
- Braille lab signs and equipment labels
- Adaptive lab equipment (e.g. talking calculators, light probes, and tactile timers)
- Class assignments made available in electronic format
- Computers with optical character reader and voice output
- Braille screen display and printer output
- Note takers

Hearing Impairment

- Face turned toward student when speaking
- Sign Language Interpreters, "real-time" captions
- FM System
- Note takers
- Use of visual aids for written assignments, lab instructions
- Demonstration summaries
- Visual warning system for lab emergencies
- Use of electronic mail for class and private discussions

Learning Disability

- Audio tape class sessions
- Extended time on exams
- Alternative testing arrangements
- Visual, aural, and tactile demonstrations incorporated into instruction
- Computer with voice input and output
- Spell checker and grammar checker

Mobility Disability

- Note takers
- Lab assistances, group lab assignments
- Classrooms, labs and field trips in accessible locations
- Adjustable tables
- Lab equipment located within reach
- Class assignments made available in electronic format
- Voice activated software for the computer

Health Disability

- Note takers
- Flexible attendance requirements
- Extended time on tests
- Assignments made available in electronic format
- Use of e-mail to facilitate communication

Students with Learning Disabilities

Students with learning disabilities have normal or better intelligence, but “information-processing deficits” that make them perform significantly worse in one or more academic areas (reading, writing, math) than might be expected, given their intelligence and performance in other academic areas. Though all learning disabilities are different, learning disabled students report some common problems, including slow and inefficient reading, slow essay writing, problems in organization and the mechanics of writing, and frequent errors in math calculation. This may be true for students with head injuries as well.

- Students with learning disabilities may take longer to complete exams and may need extended time.
- Because students with learning disabilities may take longer to complete assignments, provide a detailed syllabus at the beginning of the class. The syllabus should list all assignments and due dates.
- Provide frequent opportunities for feedback: for example, weekly quizzes on assigned reading, instructor review of early drafts or essays, error-analysis of tests. If a student’s written exams seem far inferior to their class work, meet during office hours for a discussion of the exam questions. This discussion will give you a better idea of what the student really knows and how you can help the student produce better exams or other written work.
- Encourage students to contact you in order to clarify assignments. Suggest that students re-phrase the assignment and send the rephrased version to you via e-mail; confirm that the student has understood the assignment or correct misunderstandings.

- Well before the beginning of class, have a list of required and recommended texts available at your office, posted on your web site or with the appropriate counselor. Some students with learning disabilities will need their textbooks ordered from Recordings for the Blind and Dyslexic, and receiving the books takes time.
- Sometimes, for disability-related reasons, students may be unable to read aloud or answer questions when called on. If students make you aware of these difficulties, you and the student can discuss other ways to meaningfully participate in class sessions: for example, volunteering comments or making short presentations.
- Compose exams in a way that makes them accessible for students with learning disabilities.
- Make sure that exams are clearly written or typed, in large black letters or numbers, with spaces between lines and with double or triple spaces between items. To avoid visual confusion, avoid cramming too many questions or math problems onto one page. Print questions on only one side of the paper.
- Group similar types of questions together: for example, all true/false, all multiple-choice, all short-answers. Leave several spaces between multiple-choice items.
- Permit students to circle answers in the test booklet rather than darkening circles on a Scantron sheet.
- Allow students to use paper in preparing answers to essay questions. Encourage students to turn in preliminary outlines or scrawled notes with the completed exam.
- Suggest that math students use graph paper (or lined paper turned sideways) to ensure neatness and avoid confusion when performing math calculations.

Students with Chronic Illness or Pain

Conditions that are not readily visible to the casual observer may cause serious problems in an educational setting. Students can be disabled by chronic illness such as asthma, diabetes, cardiovascular disease, cancer, chronic fatigue, and seizure disorders. They can also be disabled by medical conditions that cause intense and continual pain such as repetitive stress injury, post-surgery, and back problems.

Symptoms can be unpredictable and fluctuating. Students with chronic illness or pain may have limited energy and difficulty walking, standing, or sitting for a long time. Their pain, or the side-effects of medications, may cause them to become dizzy or confused, making it hard for them to pay attention in classes, complete assignments, do research, and stay focused during exams.

- Provide extended time on exams for students affected by fatigue, stamina issues or medication side effects.
- Allow extra time for getting to class if student has medical conditions that cause dizziness or lack of physical stamina.
- Preferential seating may be necessary for students unable to use regular classroom furniture.
- Extended time should be given for completing course assignments when conditions arise that require bed rest or hospitalization.

Students with Hearing Impairment

Students who are deaf or hard of hearing are not all alike. Some are extremely adept at reading lips and others are not; some communicate orally and others use sign language, gestures, writing, or a combination of these methods. In class, students who are deaf may have sign language interpreters, or they may rely on real-time captioners (people who immediately type whatever is said so that the spoken utterance can be read on a computer screen). Students who have some usable hearing may use a device to amplify sounds. In class they may rely on hearing aids alone, or they may use an “assistive listening device.” When students are using assistive listening devices, instructors may be asked to wear a cordless lapel micro transmitter.

- Always speak directly to the student, not to the student’s sign language interpreter.
- During class discussions, ensure that no more than one person speaks at a time. When a class member asks a question, repeat the question before answering.
- Loss of visual contact may mean loss of information for some students who are deaf or hard of hearing. Unless the students are using sign-language interpreters or real-time captioners, be sure that the students have visual contact with you before you begin lecturing. Avoid giving information while handing out papers or writing on a chalkboard.
- Provide seats near the front of the class so students with hearing impairments can get as much information from visual and auditory clues as possible.
- Use captioned videos, and provide an outline or summary in advance. If the classroom must be darkened, be sure that the student’s interpreter is clearly visible.

- When reading directly from a text, provide an advanced copy and pause slightly when interjecting information not in the text.
- When working with the chalkboard or an overhead projection system, pause briefly so that the student may look first at the board/screen, and then at the interpreter, to see what is being said.

Teaching Students with Attention-Deficit/ Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is characterized by a persistent pattern of frequent and severe inattention, hyperactivity, and/or impulsiveness. People with ADHD have many problems in academic settings. Some of these problems are similar to the problems of people with learning disabilities: slow and inefficient reading, slow essay-writing, and frequent errors in math calculation and the mechanics of writing. Other problems are especially characteristic of ADHD; students with ADHD have serious problems with time-management, task-completion, organization, and memory.

- Students with ADHD generally perform better if given a syllabus with clear explanations of tasks and specific due dates. As the semester progresses, keep reminding students of impending deadlines.
- Whenever possible, start each lecture with a summary of material to be covered, or provide a written outline. If you use broad margins and triple-space, students will be able to take notes directly onto the outline, an aid to organization. At the conclusion of each lecture, review major points.
- Students with ADHD may tend to “drift” mentally during class, especially during long lectures. They are better able to stay tuned-in when the class material is stimulating and the format varied (for example, lecture alternating with presentations and class discussion). If the class goes for several hours, be sure to permit several breaks.
- Students with ADHD are often distractible, so you should invite them to sit near the front of the class, away from possible sources of distraction (for example, doors, windows, and noisy air conditioning).
- Avoid making assignments orally, since ADHD students may miss them. Always write assignments on the board, or pass them out in written form.

- Provide test-sites that are relatively distraction-free; when students are taking tests with extended test-time, do not ask them to move from one test-site to another.
- For lengthy projects or long papers, help the student break down the task into its component parts. Set deadlines for each part; for example, there might be deadlines for the proposal of an essay topic, for a research plan, for the completion of research, for pre-writing to find the essay's thesis, for a writing plan or outline, for a first draft, and for a final edited manuscript.

Teaching Students with Limited Manual Dexterity

Students may have limited manual dexterity as a result of illness or injury. In this age of the computer, increasing numbers of students are developing carpal tunnel syndrome, which causes them to suffer severe pain when they take notes or write exams.

- Whether they handwrite, use computers, or dictate, students with limited manual dexterity generally need extended time for examinations.
- Students with limited manual dexterity need frequent rest breaks during exams, since handwriting and typing are slow and painful, and dictating to an amanuensis is difficult and mentally fatiguing.
- During lab sessions, students with limited manual dexterity often need assistants to manipulate equipment, make notes, and complete lab reports.

Teaching Students with Mobility Impairments

Mobility impairments can be caused by cerebral palsy, multiple sclerosis, muscular dystrophy, or a spinal cord injury. Students with mobility impairments have varying physical limitations and may use crutches, braces, or a wheelchair.

- Students who have upper body limitations may need note takers, extended exam time, and audiotape recorders or scribes to record exam answers. Faculty will need to provide exam rooms in which students can dictate into audiotape recorders or confer with scribes without disturbing other exam-takers.
- Students with upper body weakness may not be able to raise their hands to participate in class discussion. Establish eye contact with the students and call on them when they indicate that they wish to contribute.
- A wheelchair is part of a student's "personal space." No one should lean on a chair, touch it, or push it unless asked. Whenever you are talking one-to-one with a student in a wheelchair, you yourself should be seated so the student does not have to peer upward at you.
- Students with severe mobility impairments may be late to class. Some are unable to quickly move from one location to another due to architectural barriers, inadequate public transportation, or hilly terrain on campus.
- Special seating arrangements may be necessary to meet student needs. Students may require special chairs, lowered tables on which to write, or spaces for wheel chairs. In laboratory courses, students who use wheelchairs may need lower lab tables to accommodate their chairs and allow for the manipulation of tools or other equipment.
- Instructors in courses requiring field trips or internships need to work with students to be sure the students' needs are met. For example, the students may need assistance with transportation, special seating, or frequent rest-breaks.
- Not all mobility impairments are constant and unchanging; some students experience exacerbation or relapses requiring bed rest or hospitalization. In most cases, students are able to make up the incomplete work, but they may need extra time.

Teaching Students with Speech Impairments

Speech impairments can have many causes: dysfluencies such as stuttering, neurological conditions such as Tourette's syndrome, surgical removal of the larynx, stroke, traumatic head injury, and degenerative illness. Students with speech impairments may communicate in various ways. Some speak with their own voices, or communicate through assistants who interpret their speech to other people.

- Resist the temptation to indicate that you have understood when in fact you have not. Students with speech impairments are accustomed to being asked to repeat, so don't be afraid that you'll offend them if you ask them to "say it again" or to spell the words that you can't decipher.
- Meet with students early in the semester to discuss preferred communication styles and how they can best function in your classroom. Will they be able to answer if you call on them? Will they be able to ask questions and make comments during class discussions, or do oral presentations? If not, are there other ways the students can demonstrate competency: for example, by completing an extra essay or project?
- If a communication assistant accompanies the student to class, address your comments and questions to the student rather than the assistant.

Teaching Students with Visual Disabilities

Like students who are deaf or hard of hearing, students with visual disabilities are at great disadvantage academically. They can hear lecturers and discussions. However, class syllabi, textbooks, whiteboard diagrams, overhead projects, films, maps videos, printed exams, Scantron answer sheets, laboratory demonstrations, and internet websites designed to be navigated by clicking on images can be major barriers for them.

Students with visual disabilities vary considerably. Some have no vision, others are able to see large shapes, and still others can read standard print if magnified. Depending on their disabilities they may need extra time for exams and projects, and many use readers or scribes for exams.

Most students with visual disabilities take advantage of assistive technology. Computers can enlarge print, convert printed material to Braille; read the text on a computer screen aloud; or scan books, articles, and other printed materials and then read their text. Some students also use audiotape recorders, portable note-taking devices, or talking calculators.

- Students with visual disabilities may need preferential seating, and should be seated near the front of the class to hear clearly what is being presented.
- When lecturing, avoid making statements that cannot be understood by people without sight: for example, "This diagram sums up what I am saying about statistics." Don't worry about using words and phrases that refer to sight: for example, "See you later!" Such expressions are commonly used, and most people with visual disabilities don't find them offensive.
- Well before the beginning of your class, make available the list of required and recommended texts for students with disabilities. You can also put the book-list on your course website. Some students with visual disabilities will need their textbooks ordered from Recordings for the Blind and Dyslexic, and receiving taped books takes time.
- When using an overhead projector with transparencies, use a large print-size: at least 18 points. Provide additional time for students with visual disabilities to copy the material to make it accessible.
- Allow the student to audiotape lectures or use a note taker.
- Pace the presentation of material; if referring to a textbook or handout, allow time for students with visual disabilities to find the information.
- Read aloud everything that you write on the chalkboard. Verbally describe objects and processes whenever possible.

- In making comparisons and analogies, use familiar objects that don't depend on prior visual knowledge. Foods and objects found around the house are good choices. You might say, for example, that a particular dance movement requires a lot of weaving and turning, "like getting from one side of the living room to the other on moving day."

(Adapted from, "Teaching Students with Disabilities, UC Berkeley, 1999) Examples of Academic Accommodations

Teaching Students with Psychological Disabilities

Some students have psychological disabilities such as depression, bipolar disorder, or severe anxiety. Every case is different, but there are some commonalities in the academic experiences of students with psychological disabilities. Students may report difficulties with focusing, concentrating, and completing work in a timely fashion. Reading, writing, and math may require extra effort and more time. Ability to function effectively may vary from day to day; in response to stress, students may experience an increase in symptoms. Medications help with some symptoms of psychological disability, but medication side effects (for example, drowsiness or headaches) can contribute to a student's academic problems.

The suggestions for working with students with learning disabilities and attention deficit hyperactivity disorder may also be appropriate for students with psychological disabilities. For disability-related reasons, these students may sometimes have to miss class, or even leave the room in the middle of a class. The students will be responsible for the content of any lectures missed, but they will appreciate your helping them to fill in the gaps.

Other CTE Resources Available

Brochures

- Health Science Professions in Hawaii
- Career Pathway 3-Panel Brochure

DVD

- Hawaii's CTE Standards Performance-Based Assessment

Special Population Teaching Resources

- Economically Disadvantaged Students
- English Language Learners
- Nontraditional Occupations
- Single Parents/Displaced Homemakers
- Special Education/Students with Disabilities

Other Products

- Career Pathways Handbook (8.5" x 11" - 18 pages)

Dual Credit Articulated Program of Study Brochures

- Entrepreneurship
- Marketing
- Retailing

Core Standards Posters

- Business
- Health
- Industrial and Engineering

Posters

- Arts and Communication
- Business
- Health Services
- Industrial & Engineering
- Natural Resources
- Public & Human Resources
- Career Pathway System Poster

Resources are available by logging on to <http://www.hawaii.edu/cte/publications>



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