AccessEngineering

Checklist for Making Engineering Labs Accessible to Students with Disabilities

An activity that can lead to greater awareness and more inclusive engineering labs

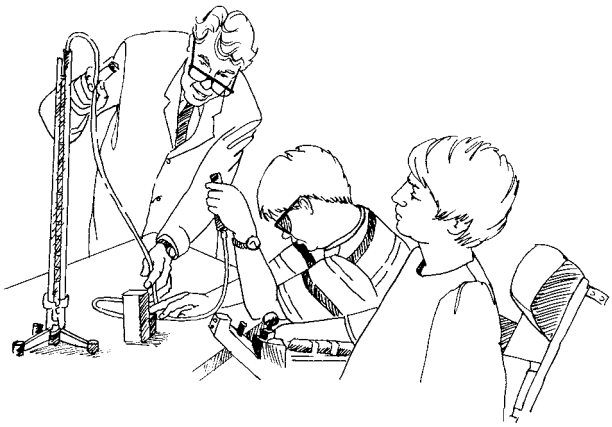
Name and location of science lab reviewed: _____

Reviewer name(s): _____

Contact name, phone, email: _____

Students with disabilities can face access challenges in engineering lab classes. Access barriers may prevent a student from

- gaining knowledge and skills
- demonstrating knowledge
- understanding core-concepts
- fully participating in hands-on learning activities



Accommodations and Universal Design

There are two approaches for making academic activities accessible to students with disabilities—accommodations and universal design. An accommodation makes adjustments for a specific student with a disability, such as assistive technology or providing materials in alternate formats. The goal of universal design is creating products and environments that are usable by everyone (including people with disabilities), to the greatest extent possible, minimizing the need for accommodations for individuals in the future. For example, if an engineering lab contains an adjustable-height workstation, an accommodation will not be needed for a student who uses a wheelchair that is too high for standard-height workstations. This workstation may also be comfortable for a student who needs to remain seated because of a health impairment or someone who is very tall or short in stature. **Making accommodations is reactive, whereas universal design is proactive.**

Universal Design of Engineering Labs

It is likely that some universal design strategies are already in place in the engineering lab you are reviewing and others could be implemented soon. The following checklist will help you identify both. For each of the strategies listed, indicate the following in the Status section of the checklist.

- **N/A**—if the suggestion is not applicable to the engineering lab being reviewed
- **Done**—if the strategy is already in place
- **[date]** —for items that will be implemented by a specific target date/month/year
- **TBC**—for strategies to be considered for future implementation
- **Other**—with an explanation

Status	Strategy, Planning, Policies, and Evaluation	Comments and Ideas
	Are people with disabilities included in planning and evaluating lab set up, procedures, curriculum, and assignments?	
	Do you require that accessibility be considered in the procurement process for lab equipment and supplies?	
	Do you have a procedure to ensure a timely response to requests for disability-related accommodations?	
	Is there a procedure to ensure that teams divide up work in a manner that ensures all students are able to actively participate in hands-on learning activities?	
	Physical Environments	
	Are parking areas, pathways, and entrances to the building wheelchair-accessible and clearly marked?	
	Are all levels of the facility connected via an accessible route of travel?	
	Are there high-contrast, large-print signs to and throughout the lab?	
	Are aisles wide and clear of obstructions for wheelchair users as well as people with mobility or visual impairments?	
	Are there quiet work or meeting areas where noise and other distractions are minimized?	
	Have you addressed safety procedures for students with hearing impairments (e.g., instructions in print and visual lab warning signals)?	

Status	Strategy, Planning, Policies, and Evaluation	Comments and Ideas
	Have you addressed safety procedures for students with visual impairments (e.g., large print signage)?	
	Have you addressed safety procedures for students with mobility impairments (e.g., fire extinguisher reachable from a seated position)?	
	Lab Staff and Teaching Assistants	
	Are staff members familiar with assistive technology alternate document formats, and how to respond to requests for disability-related accommodations?	
	Are staff members aware of issues related to communicating with students with different characteristics regarding race and ethnicity, age, and disability?	
	Information Resources	
	Are printed documents available (immediately or in a timely manner) in alternate formats such as Braille, large print, and electronic text?	
	Can lab publications be reached from a seated position?	
	Do electronic resources, including web pages, adhere to accessibility guidelines or standards?	
	Are videos and software used in the lab accessible?	
	Equipment	
	Is an adjustable-height table available for each type of workstation in the lab? Can the height be adjusted from a seated position?	

Status	Strategy, Planning, Policies, and Evaluation	Comments and Ideas
	Is equipment marked with large-print and/or braille labels?	
	Are there breakable materials? Can you provide plastic products instead of glass when available?	
	Are there slippery materials? Can you provide non-slip mats, beaker and object clamps/ stands, beakers and equipment with handles, and surgical gloves to handle slippery items?	
	Can controls on lab equipment be reached from a seated position?	
	Does equipment require a high degree of fine motor control or force in order to operate?	
	Are adequate work areas available for both right- and left-handed users?	
	Instructional Strategies	
	Do you have strategies for dividing the labor in a way that ensures all students in a group, including students with disabilities, actively participate in hands-on learning activities?	
	Are there policies or procedures for accommodating students who receive extra time on assignments?	
	Can a student use more accessible systems (such as CNC equipment or 3D printers), work in groups, or receive assistance from a teaching assistant when standard equipment is inaccessible?	
	How can a student who is unable to access a piece of equipment participate or contribute to the task?	

Overall, how accessible do you think this facility is for people with the disabilities listed below? Explain your responses. In the second column summarize the most important recommendations for making the facility/program more welcoming and accessible to people with these types of disabilities.

Disability Type and Access Issues	**Accessibility Recommendations**
Blind or low vision	
Deaf or hard of hearing	
Mobility impairment	
Learning or other invisible disability	
Other disability	

Other comments about this checklist, this facility/program, and/or your overall experience:

Adapted from DO-IT's publication *Making Science Labs Accessible to Students with Disabilities* found at *www.uw.edu/doit/making-science-labs-accessible-students-disabilities*.

About *AccessEngineering*

The College of Engineering and DO-IT (Disabilities, Opportunities, Internetworking and Technology) at the University of Washington lead the *AccessEngineering* project for the purpose of increasing the participation of people with disabilities engineering education and careers and improve engineering fields with their perspectives and expertise. The *AccessEngineering* Faculty Leadership Team includes representatives from Auburn University, Georgia Tech, Ohio State University, and the Rochester Institute of Technology. Collaborators represent education, industry, government, and professional organizations nationwide.

For further information, to be placed on the mailing list, request materials in an alternate format, or to make comments or suggestions about DO-IT publications or web pages, contact:

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