Universal Course Design

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Center for Faculty Development
http://www.sjsu.edu/cfd/teaching-learning/accessibility
Topics

- Getting Ready to Teach
- Who are our students?
- Types of Disabilities
- The Law and Legal Landscape
- What is Universal Design for Learning?
- Findings from UD Studies
- Accessibility Guidelines and Best Practices
- References
Getting Ready to Teach

Per Policy S16-9 your syllabus should include:

1. Basic course and contact information
2. Course goals and learning outcomes
3. Textbooks, reading materials, and course activities
4. Quizzes, exams, assignments, grading rubrics and policies
5. University, college, department policies
6. Course schedule
Instructional Design Model

The ADDIE or Instructional System Design Model
A process to Analyze, Design, Develop, Implement, Evaluate your course content with learners in mind.

Analyze  
Evaluate  
Design  
Implement  
Develop  
Learners
Backward Design

The three stages of Backward Design

- Identify desired results
- Determine acceptable evidence
- Plan learning experiences and instruction
Who are Our Students?

- Individuals bring in different culture background, skills, experiences, learning preferences, needs, interests, and other characteristics to learning.

- According to SJSU Fall 2016 diversity statistics, our students include Asian (31.9%), Hispanic(24.3%), White(18.8%), International (12.3%), Other (9.1%), Black (3.1%), and Pacific Islanders (0.4%) ethic background.

- Diversity also includes a wide range of physical, visual [sensory], hearing, learning [cognitive], attention, and communication abilities.

- In Education, does one size fit all?
Disability Demographic Information

- According to the US Census Bureau report, about 56.7 million people — 19 percent of the population — had a disability in 2010.

- The percentage of undergraduates who reported having a disability was **11 percent** in 2011–12. The percentage of undergraduates having a disability:

  ~ Fast Facts from National Center for Education Statistics
AEC Student Registration Data at SJSU

Data of students registered with Accessible Education Center (AEC) at SJSU from 2005 to 2017.

- An increase from 3% in Fall 2005 to 3.75% in Spring 2017

<table>
<thead>
<tr>
<th>Semester</th>
<th>AEC Registered Students</th>
<th>SJSU Student Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2005</td>
<td>890 (3%)</td>
<td>29,975</td>
</tr>
<tr>
<td>Fall 2006</td>
<td>933 (3%)</td>
<td>29,604</td>
</tr>
<tr>
<td>Fall 2007</td>
<td>1073 (3%)</td>
<td>31,906</td>
</tr>
<tr>
<td>Fall 2008</td>
<td>1124 (3%)</td>
<td>32,746</td>
</tr>
<tr>
<td>Fall 2009</td>
<td>1127 (3.6%)</td>
<td>31,280</td>
</tr>
<tr>
<td>Fall 2010</td>
<td>1058 (3.6%)</td>
<td>29,076</td>
</tr>
<tr>
<td>Fall 2011</td>
<td>1127 (3.7%)</td>
<td>30,236</td>
</tr>
<tr>
<td>Spring 2012</td>
<td>1102 (3.9%)</td>
<td>28,002</td>
</tr>
<tr>
<td>Spring 2013</td>
<td>1125 (4.1%)</td>
<td>27,503</td>
</tr>
<tr>
<td>Spring 2015</td>
<td>1142 (3.8%)</td>
<td>29,954</td>
</tr>
<tr>
<td>Spring 2016</td>
<td>1069 (3.6%)</td>
<td>29,594</td>
</tr>
<tr>
<td>Spring 2017</td>
<td>1096 (3.75%)</td>
<td>29,200</td>
</tr>
</tbody>
</table>
Student Disclosure Issue

- a gap between the reported national disability statistics (11% of undergraduates) and our campus data (3.75%)

- Only about 35% of students choose to disclose their disability in college...

Sources:
- Getzel, E., 2014
Issues of Not Disclosing

- Adjustment to a college environment (Colleges/Universities are not required to develop Individualized Educational Plan (IEP). **Students must learn to self-disclose their disabilities**)

- Lack of acceptance, responsibility of managing accommodations

- **Difficulties accessing the necessary services & supports** such as, academic planning, learning communities & seminars, peer-to-peer instructional support or faculty mentoring, learning and practicing goal setting

- Find the process to disclose to each faculty & each class and every semester **humiliating and stigmatizing**

Sources:
- Getzel, E., 2014;
- Izzo, M., Murray, A., Novak, J, 2008,
SJSU AEC Student Distribution

AEC Spring 2017 student registration data

- Visual disability = 17 (1.55%)
- Communication = 86 (7.85%)
- Deaf = 40 (3.65%)
- Learning disability = 322 (29.38%)
- Mobility = 47 (4.29%)
- Functional disability = 584 (53.28%)

Total = 1096
## Types of Disabilities

<table>
<thead>
<tr>
<th>Disabilities</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual</strong></td>
<td>Blindness, low vision &amp; color blindness</td>
</tr>
<tr>
<td><strong>Auditory</strong></td>
<td>Degree of hearing loss, deaf-blindness</td>
</tr>
</tbody>
</table>
| **Motor**    | • Traumatic Injuries: Spinal cord injury, Loss or damage of limb(s)  
               • Diseases & Congenital Conditions: Cerebral palsy, Muscular dystrophy, Multiple sclerosis, Spinal bifida, ALS (Lou Gehrig's Disease), Arthritis, Parkinson's disease, Essential tremor |
| **Cognitive**| • Functional: Memory, Problem-solving, Attention, Reading, linguistic, and verbal comprehension, Math comprehension, Visual comprehension  
               • Clinical Cognitive disabilities: Autism, Down Syndrome, traumatic brain injury (TBI), and even dementia. Less severe cognitive conditions include attention deficit disorder (ADD), dyslexia (difficulty reading), dyscalculia (difficulty with math), and learning disabilities in general |

➤ Source: [Web Accessibility in Mind](http://WebAIM) (WebAIM)
Learning Disabilities

What is a learning disability?

“A learning disability is a neurological disorder that affects the brain’s ability to receive, process, store, and respond to information… LD is a group of disorders that vary from person to person… affects people’s ability … with spoken and written language, coordination, self-control, or attention. Such difficulties extend to schoolwork and can impede learning to read, write, or do math.” ~ National Association of Special Ed Teachers

“A learning disability can't be cured or fixed; it is a lifelong issue. With the right support and intervention, however, children with learning disabilities can succeed in school and in life.” ~ from LD Online
## Common Learning Disabilities

<table>
<thead>
<tr>
<th>Learning Disabilities (LD)</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyslexia</td>
<td>Problems with reading, writing, spelling, speaking</td>
</tr>
<tr>
<td>Dyscalculia</td>
<td>Problems doing math problems, understanding time, using money</td>
</tr>
<tr>
<td>Dysgraphia</td>
<td>Problems with handwriting, spelling, organizing ideas</td>
</tr>
<tr>
<td>Dyspraxia</td>
<td>Problems with hand-eye coordination, balance, manual dexterity</td>
</tr>
<tr>
<td>Dysphasia/Aphasia</td>
<td>Problems understanding spoken language, poor reading comprehension</td>
</tr>
<tr>
<td>Auditory Processing Disorder</td>
<td>Problems with reading, comprehension, language</td>
</tr>
<tr>
<td>Visual Processing Disorder</td>
<td>Problems with reading, math, maps, charts, symbols, pictures</td>
</tr>
</tbody>
</table>

- Other disabilities: Attention Deficit Hyperactive Disorder (ADHD), Autism Spectrum Disorder

Source: HelpGuide.org

UDL - Center for Faculty Development, October 2017
The Laws

- **Americans with Disability Act (ADA) of 1990 (sec. 12102)**
- **Section 508** of the Rehabilitation Act of 1973
  - Standards which ensure all information and communications technology (ICT) supports accessibility
- **California Government Code 11135**
Litigation Cases

2016 Office of Civil Rights (OCR) web accessibility cases from across the nation.
- Harvey Mudd College policy on EIT - resolution agreement
- Miami University’s web content & LMS – DOJ decree
- MIT/Harvard edX’s lack of captioning MOOCs – settlement agreement
- Berkley’s inaccessible online content – DOJ Letter

2017
- One CSU campus received an OCR letter
- One Activist Has Hundreds of Colleges Under the Gun to Fix Their Websites
  - Last year 360 colleges were scanned
Courses designed with UDL “strive to focus on the strength of individuals… what they CAN do rather than on what they cannot” and “proactively address the needs of people with the broadest range of characteristics…” (Emmert, M. A. 2008)
What is Universal Design?

“Universal Design” was coined by Ronald Mace in the 1970s.

“...the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.”
Examples of barrier-free and user-friendly physical environment and products

- Street sidewalk curb cuts
- Accessible Ramp
- Electronic sensor door
- Door levers
- Easy-grip tools
- Speaker phone
Think Universally!

Designing a learner-centric and barrier-free learning environment

- **Multiple means of Representation of your content**
  - Different or multi-modal ways to present, describe or explain course content information (e.g., lecture, video, online, group discussion, road map, graphic organizers, field trip, etc.)

- **Multiple means of Engagement**: to engage or motivate your students
  - Different strategies or technologies to involve students to participate in their learning activities (e.g., iClicker, active collaborate team learning, online, hybrid, flipped classroom)

- **Multiple means of Action/Expression**: to allow options/choices for students to be in control of or express their learning
  - Different ways to allow learners to express, demonstrate or control their learning (e.g., Quizzes, exams, projects, papers, multimedia presentations)
Findings from UD Studies – Student Perspectives

- Effective teaching methods & strategies reported by students in several UD studies
  1. Classroom environment
     1. Welcoming classroom climate
     2. Providing support for individual learning needs
     3. Appreciation of professors who were receptive when disclosing their disability
  2. Course content
     1. Clear goal, learning outcomes, expectations listed on syllabus
     2. Presenting materials in multiple formats
     3. Connecting academic content with real life experiences
  3. Instructional strategies
     1. Explicit step-by-step instructions
     2. Providing advanced organizers, study guides, or outlines
     3. Highlighting key points for viewing videos
  4. Assessment strategies
     1. Allowing student choices (e.g., assignments or exams; individual or group projects)
     2. Frequent formative feedback or quick response to emails & all communications
     3. Using diverse assessment strategies
     4. Providing rubrics for graded assignments

- McGuire, J.M. & Scott, S., Fall 2006
Findings from UD Studies – What Makes an Excellent Instructor

- Findings from 23 students with LD, ADHD & other psychological disorder

- Attributes of excellent instructors
  1. Approachable and available
  2. Focused on the subject
  3. Able to make a personal connection with students
  4. Created a challenging standard
  5. Pushed students to do their best work
  6. The boost of self-confidence

McGuire, J.M. & Scott, S, Fall 2006
Findings from UD Studies – Faculty’s Perspective

Findings from Faculty Members on Effective Strategies

- Clear structure (e.g., clarity in assignments, steps for completing an activity, clear class policy on attendance, make-up exams)
- Engaging students in learning (e.g., discovery- and problem-based learning, use of case studies, real-life examples, individual, group or online activities)
- Redundancy of important points (in multimodal methods, group discussion)
- Teaching student study and learning strategies (notetaking for the specific discipline, how to read the text effectively, study for perform well on tests)
- Creating a positive learning, trust and safe environment
- Establishing high expectations for student performance
- Use of humor

McGuire, J.M. & Scott, S, Fall 2006
Universal Course Design Checklist

➢ Review and discuss

Universal Inclusive Course Design checklist
Other Best Practices for Text Information

For text-based documents and communications

- Use more legible sans serif fonts (e.g., Arial, Calibri, Helvetica, etc.)
- Include structure for your document by using heading style feature
- Provide meaningful label for web link
- When formatting, using heading style, lists, bold, uppercase in addition to color texts
- Check color contrast between text and background (WebAIM color contrast checker: http://webaim.org/resources/contrastchecker/)
- Check reading order of text information

Instructions available at CFD’s Creating Accessible Documents web page
Other Best Practices for Multimedia

For non-print multimedia information

- Include closed captions for your embedded videos
- Include a transcript for your embedded audio
- Avoid using color Only to convey information
- Use simple slide transition to reduce distraction
- Avoid animation or Flash; if used, describe the information
- Avoid flashing graphics that may cause epileptic seizures

Captioning support available at CFD’s Captioning Support web page.

Source: Section 508 Standards Chapter 2 E205.4 and WCAG 2.0
7-Step in Preparing for Universal Accessible Course Materials

1. Do I use accessible syllabus for my course? An accessible syllabus template (http://www.sjsu.edu/cfd/docs/accessible%20syllabus%20template.doc) is available for download.

2. Have I submitted my textbooks order or course readers through SJSU Spartan Bookstore’s Faculty Resources?

3. Have I submitted library reserve materials, if any, through course reserves request?

4. Have I followed accessibility guidelines (http://goo.gl/RE95ck) to create handouts or slides?

5. Do my audio/video course materials include transcript or closed captions? View captioning guidelines for details and complete this request form (https://goo.gl/sOUUb0) to request for help.

6. Are my quizzes, examinations or assessment materials accessible? Contact AEC’s Testing Accommodations office for assistance.

7. Are all materials uploaded on my website or Canvas learning management system accessible? Use this verification tool to test the accessibility of any websites you reference by entering their URLs.

Available at CFD’s Accessible Course Materials web page

UDL - Center for Faculty Development, October 2017
Point of Contact

Elizabeth Tu: 408 924-3093

Elizabeth.Tu@sjsu.edu

CFD’s Accessible Course Materials web page:
http://www.sjsu.edu/cfd/teaching-learning/accessibility
References

- **Active Learning Strategies** from UC Berkeley Center for Teaching & Learning
  [http://teaching.berkeley.edu/active-learning-strategies](http://teaching.berkeley.edu/active-learning-strategies)
- **ADDIE Model**: [http://www.instructionaldesign.org/models/addie.html](http://www.instructionaldesign.org/models/addie.html)
- **Americans with Disability Act (ADA) of 1990 (sec. 12102)**
- **CAST**: [http://www.udlcenter.org/aboutudl/whatisudl](http://www.udlcenter.org/aboutudl/whatisudl)
- **UDL Universe**: [http://udluniverse.com/](http://udluniverse.com/)
- Fast Facts from National Center for Education Statistics
- **HelpGuide.org**
References 2

- The User's Perspective from WebAIM: http://webaim.org/articles/
- Web Accessibility in Mind (WebAIM)
Sample Word Accessibility Issue #2.2

- Some screen readers can list all the web links for the document. (See screenshot on the right.)

- If only urls are listed, it’s difficult for users to relate the urls to your web references.

- It’s more meaningful for screen reader to read the website name or label. (See lower half of this screenshot.)