

THE UNIVERSITY OF TEXAS AT AUSTIN
INFORMATION TECHNOLOGY ADVISORY COMMITTEE

SCHOOL/COLLEGE/ADMINISTRATIVE UNIT VISION PLAN TEMPLATE

SUMMARY OF REQUESTS

The Accessibility Institute requests a total of 86,025 for 2007-08, to do the following:

1. New academic course: Develop "Introduction to Accessibility," the first of several new academic courses on accessibility, to generate sustained interest in accessibility, open new employment opportunities for students with and without disabilities, and promote new research and innovation.
2. Accessibility support for instructional sites: Continue offering accessibility support from our successful Student Accessibility Team to assist in creating online instructional resources that achieve accessibility for students with disabilities through the application of cutting-edge technologies and the latest international standards for accessibility.
3. Online tutorials: Develop additional online tutorials for using the market-leading JAWS screen reader with applications important for student success at UT; update existing tutorials for new versions of JAWS and other applications, including Windows Vista and Office 2007. Tutorials are aimed at students with visual impairments as well as developers of course content.
4. User testing: Compensate subjects who participate in user testing; keep software up to date.
- 5.

OVERVIEW OF CURRENT IT PROGRAMS AND INFRASTRUCTURE

Vision/Mission/Goals of Unit

The Accessibility Institute integrates technology, accessibility, and learning for everyone through research, education, advocacy, consulting, training, and service. The Accessibility Institute promotes all aspects of Web accessibility by providing free training and consulting to the UT community, by conducting cutting edge research, and by proactively incorporating accessibility into all educational research and development activities.

Goal:

To ensure that UT Austin is the world leader in providing online instructional resources that are accessible to all students, including students with disabilities.

Methods:

- Perform regular assessments of online instructional resources against national and international standards for Web accessibility
- Provide accessibility training to faculty, students, and staff developing online instructional materials

- Carry out user testing to measure impact of accessibility barriers on students with and without disabilities
- Assist developers in integrating accessibility into project planning and design
- Develop online resources to support creation and successful use of accessible course materials
- Raise awareness through annual events such as the AIR University competition (2000-present)
- Develop unique, cutting-edge academic courses to recruit new participants into the field

IT Programs (programs requiring recurring funds for salaries, operations, etc.)

- Usability lab (user testing that includes participants with and without disabilities)
- Compliance checking (evaluation of online resources against national and international standards for Web accessibility)
- Accessibility training (face to face and online)
- Student Accessibility Team (conducts accessibility evaluations of instructional Web sites and participates in training Web developers; develops tutorials for using important instructional applications with the JAWS screen reader)
- Academic course development (assesses programmatic needs, designs and develops inclusive learning activities, interviews prospective students, records, captions, and/or describes guest presentations for Web publication, analyzes results, etc.)

Infrastructure

Usability lab:

- Desktop PC (Windows XP)
- PC laptop
- Mac laptop
- Video cameras
- Scan converter
- Mixer board
- Session monitoring
- Video recorder
- Morae remote usability testing software
- JAWS and Window-Eyes screen readers (for use by people who are blind)
- ZoomText screen magnifier (for low vision)

Current and proposed funding sources for IT programs and infrastructure

Current

annual allocation from Provost's office, ITAC funding, funding from the Department of Education via contract with Center for Disability Studies (completed August 2006), plus one small grant from Humanities Texas to develop online training about making humanities materials accessible (completed December 2006)

Proposed

In addition to ITAC, we are actively seeking grants from private foundations and government agencies, including NSF

Best Practices

We are developing and testing methods for the evaluation of accessibility issues in instructional sites. One of the best practices that we developed has been to have more than one person evaluate the same site in order to develop a shared understanding of evaluation criteria and to give better reports to clients. Student Accessibility Team members are being trained to help content providers exceed minimum requirements by drawing upon additional national and international accessibility standards and guidelines such as the Web Content Accessibility Guidelines and the National Center for Accessible Media's Guidelines for Making Educational Software and Web Sites Accessible. The team is also being trained to go beyond technical compliance to enhance the experience of users of assistive technology.

USE OF PREVIOUS ACADEMIC YEAR ALLOCATIONS

Programs

Online tutorials

In our 2005-06 proposal, we requested funding to (1) continue and expand our accessibility reviews of instructional content by the Student Accessibility Team, as well as (2) an equal amount for a new project to create and publish online tutorials to help students and developers of instructional content understand how to use basic and advanced features of the JAWS screen reader, and (3) upgrade equipment in our usability lab to support systematic user testing of instructional content. The final allocation amounted to substantially less than our initial request. We therefore chose to focus on the JAWS tutorials as well as upgrades to the usability lab. This allowed us to take advantage of the experience the student team had gained in 2004-05 (all three members returned in 2005-06) while at the same time expanding the team's knowledge and experience and increasing our ability to support successful participation in instructional activities by students with disabilities. That is, we generalized the purpose of the student accessibility team: from now on, the team can focus its attention where the need is greatest, whether on instructional Web sites or other instructional applications.

The online tutorials are driven by the experiences of student employees with disabilities and informed by observations made during user testing in 2005-06 and earlier, which showed that students with visual impairments are not always expert users of the assistive technologies that are crucial to their ability to work on an equal basis with their peers. Dialogue with Web developers revealed that they are also eager for information about how JAWS interacts with applications frequently used by students. Research showed that existing training materials are inadequate for use in university settings.

In the fall 2006 semester, the student team investigated applications that are widely used by all students, believing that students with visual disabilities would benefit most from information about using those applications with the JAWS screen reader. They found, for example, that

Powerpoint is often required to create and deliver presentations in class. The team then developed two tutorials about creating Powerpoint presentations using basic and advanced features of Powerpoint together with the appropriate JAWS techniques. The near-final versions of these tutorials have been posted to our test site for final review, and will be migrated to the production site by the beginning of the Spring semester.

Additional tutorials will be developed in Spring 2007. These will focus on Adobe's Acrobat Reader PDF format, which is used by many instructors for class handouts, and is also the format used when students retrieve articles from many journals through the General Libraries (for example, JSTORE delivers PDF documents, as does Google's ambitious Print project). Other tutorials will focus on research applications, including EndNote (a desktop application) and noodlebib (a Web application), both of which present significant obstacles to JAWS users who are unfamiliar with advanced JAWS features. These tutorials will supplement training offered by the General Libraries, which is geared to sighted users.) Additional tutorials will be prepared for WebSpace, and for the most widely used Web-authoring tools, FrontPage and Dreamweaver.

Tutorials will be available through the Accessibility Institute Web site, and will be promoted through Services for Students with Disabilities as well as the Center for Instructional Technology, the General Libraries, and other venues.

Infrastructure

Upgrade our Usability Lab

The equipment and software listed below will be purchased by late summer 2007 to support the Student Accessibility Team with evaluation and user testing of sites. It will update the equipment in the accessibility lab and allow us to continue to demonstrate the impact of accessibility on the use of instructional sites by allowing recording of users interacting with sites. These examples can then be used to demonstrate to instructional developers the experience of interacting with their site and impact of accessibility barriers on the user experience.

The licenses for assistive technology (screen readers and screen magnifier) increase our effectiveness by allowing members of the Student Accessibility Team to demonstrate assistive technology and perform accessibility evaluations at remote sites while other activities that require these tools are conducted at the Accessibility Institute offices. We also are requesting technology support to assist in the set-up and maintenance of equipment.

2006-07 Requested resources

1 PC		\$2550
1 Macintosh		\$2999
1 digital video mixer		\$3449
1 license for JAWS screen reader with SMA	\$1295	
1 license for Window-Eyes screen reader		\$550
1 license for ZoomText screen magnifier		\$555

Total allocated in 2006-07 for Equipment & software: \$11,398

One-time Projects (describe stated purpose of funds allocated in previous Vision Plan and how they were actually used; explain deviations)

N/A

NEEDS AND PROPOSED USE OF FUNDS

Programs

Continued Services of Student Accessibility Team

In 2007-08, the student accessibility team will focus on creating resources to support major changes in both conventional and assistive technologies. Major new releases of Internet Explorer (7.0), Firefox (2.0), and JAWS (8.0) were issued in Fall 2006; another significant JAWS upgrade is expected for Fall 2007. Windows Vista was released on December 1, 2006, along with a major new version of Microsoft Office. The student accessibility team will investigate these developments and create or update tutorials as needed.

The Student Accessibility Team will also continue to assist in development of online instructional resources that are accessible to all students, including students with disabilities. Members of the Student Accessibility Team will:

- Evaluate new and existing instructional resources for compliance with national and international Web accessibility standards (Section 508, Web Content Accessibility Guidelines)
- Work with faculty and instructional designers to develop solutions for challenging academic content such as mathematics, mapping, foreign languages, and interactive demonstrations; solutions that are most effective for students with and without disabilities will often involve cutting edge technologies such as Mathematics Markup Language (MathML), Scalable Vector Graphics (SVG), Synchronized Multimedia Integration Language (SMIL), Resource Description Framework (RDF), etc., as well as more conventional technologies such as XHTML, CSS, and client- and server-side scripting.
- Publish working examples and techniques in the How-Tos and Demos section of the Accessibility Institute site.

Increasing the number of Student Technical Assistants to three will allow us to devote time to both of these important tasks.

The need

Federal law, including the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, requires that University programs and activities be accessible to qualified students with disabilities. The US Department of Education's Office of Civil Rights has

consistently held that this requirement applies to instructional materials that are provided online as well as those in print or other media such as video. In addition, Texas law requires state agencies, including institutions of higher education, to make online resources that are available to members of the public accessible to individuals with disabilities. An accessibility policy for the University of Texas at Austin is currently in effect.

As a working definition, online resources may be considered accessible when people with disabilities can use them as effectively as people without disabilities. From the technical standpoint, accessibility is defined by two related sets of standards:

- Section 508 (federal standards established by the US Access Board). These standards apply directly to federal government resources, and have been adopted by many other organizations including state and local governments, universities, and corporations. In 2005 UT Austin adopted Section 508 as the basis for its official accessibility policy.
- Web Content Accessibility Guidelines (WCAG), international standards published by the World Wide Web Consortium. Adopted by many nations, including the European Union and member states, Canada, Australia, New Zealand, and others. WCAG 1.0 is the basis for the US Section 508 standards and others. Also adopted by UT System.

Both WCAG and Section 508 are undergoing significant revision as of November 2006. An entirely new version of the Web Content Accessibility Guidelines is under development by the World Wide Web Consortium; completion is expected in 2007. Accessibility Institute director John Slatin was named Co-Chair of the Web Content Accessibility Guidelines Working Group in 2005, and served until he was forced by illness to step down in May 2006. Slatin is co-editor of the Web Content Accessibility Guidelines 2.0 and supporting documents, and remains active in the WCAG Working Group. Review of the US Section 508 requirements began in September 2006, with final publication slated for 2008; Professor Slatin is also participating in this effort.

Members of the Student Accessibility Team will be trained to use the new Web Content Accessibility Guidelines 2.0 and the new Section 508 requirements in evaluating and creating Web-based instructional resources. This offers another way to sustain and enhance the University's reputation for innovative uses of instructional technology.

Increasing the number of Student Technical Assistants to three will add capacity to the team, enabling both increased support for the development and evaluation of accessible instructional resources and the creation and updating of tutorials. It also increases the team's capacity for learning, a significant issue considering the number of important updates described above (to the Windows OS, to MS Office, to IE and Firefox, to JAWS, and to the accessibility standards).

Requested resources

1 Graduate Research Assistant, 20 hours/week

Grad. Res.

Assist.

Sept. '07 - Aug. '08
\$39,182/12 mos. Base

Salaries	\$19,906
Fringe	\$5,176

3 Student Technical Assistants, 10 hours/week each			
Undergrad. Assist.	Sept '07 - Aug. '08	Salaries	\$14,322
	\$18,540/12 mos. Base	Fringe	\$1,862
Total salaries and fringe:			\$40,466
Tuition			
	GRA Tuition (2 sem/1 sum)		\$7202
TOTAL for Student Accessibility Team:			
\$47,668			

Academic courses: Building the future of accessibility

Our long-range goal is to develop a set of academic courses about accessibility, including both undergraduate and graduate courses. This will be the first program of its kind in the United States. Undergraduate courses will be offered through the Division of Rhetoric and Writing. Each course will stand alone, and the cluster of courses will be sufficient to constitute either an undergraduate minor for students in a variety of fields, or a concentration within the Rhetoric Division's new undergraduate major. Graduate courses will be taught under the rubric of the English Department's Computers and English Studies Ph.D. concentration, and will be cross-listed with other schools and colleges (such as the School of Information, the LBJ School of Public Affairs, the School of Social Work, and others as appropriate). All will meet in the Computer Writing and Research Lab's networked classrooms to support hands-on activities and foster collaboration.

The need

To date, accessibility work has focused primarily on gathering techniques, sharing best practices, and codifying standards. Techniques, practices, and standards have been disseminated almost entirely through either Web-based information or short, instructor-led technical training classes aimed at professional Web developers. Examples of the former include the Accessibility Institute's How'-tos and Demos and Guidelines and Policies pages. Examples of the latter include instructor-led, hands-on training for UT Austin staff and faculty offered through the Accessibility Institute and ITS; other organizations offering such training include the Austin-based nonprofit organization Knowbility (a frequent collaborator with the Accessibility Institute) and Utah State University's WebAIM.

There have been comparatively few academic courses on accessibility. Exceptions include Professor Gregg Vanderheiden's courses in Engineering and Biomedical Engineering at the University of Wisconsin-Madison, which focus primarily on the development and testing of assistive technologies; Professor Jon Gunderson's Rehabilitation Engineering courses at the University of Illinois at Urbana-Champaign, which have focused variously on Cascading Style Sheets and evaluation tools; Professor Elizabeth Lawley's 2003 course on Web design at the Rochester Institute of Technology, which hosts the National Technical Institute for the Deaf; and

a combined graduate/undergraduate course taught from 1998-2004 by John Slatin here at UT Austin. Professor Clay Spinuzzi's courses on usability, offered through the Rhetoric Division, have also incorporated accessibility concerns. The proposed set of courses is to our knowledge the first such program in the United States.

Accessibility is an increasingly complex area, distributed across many disciplines. Technical training for working professionals and one-off academic courses will no longer allow adequate coverage, and continued progress will benefit from more systematic education in addition to technical training. Our plan to create a set of academic courses, therefore, amounts to the beginnings of an "intellectual infrastructure" for continued research and development in the field, and for opening new employment opportunities for students, including especially students with disabilities. We see this becoming an interdisciplinary/multidisciplinary program, drawing on faculty participants from disciplines in addition to Rhetoric and Writing, including (but not limited to) Information, Cognitive Science, Psychology, Computer Sciences, Electrical and Computer Engineering, Design, Media Studies, Special Education, and others. We also see it as involving expertise from industry (e.g., the IBM Accessibility Center based in Austin, AT&T Labs) as well as members of the disability community in Austin.

The Accessibility Institute will actively seek input from students with disabilities as well as industry and academic experts in developing each course.

Please see the section on "One-Time projects" for detailed information about the course we propose to develop in 2007-08.

One-time Projects

New academic course: Introduction to Accessibility

In 2007-08, we will concentrate on creating a new Introduction to Accessibility course, to be offered through the Division of Rhetoric and Writing and cross-listed with Science, Technology, and Society. The course will be designed to satisfy the new Flag requirements for Writing and Multicultural Perspectives and Diversity, as described in "Supplementary Recommendations from TFCR, <http://www.utexas.edu/faculty/council/2005-2006/reports/tfcrsupp.html>". This will allow us to introduce students to an exciting new field at an early stage in their academic careers, thereby building an audience for more advanced courses .

Topics

As noted above, this is the first in a series of courses. "Introduction to Accessibility" will address the following topics:

- Conceptions and definitions of disability and accessibility: "medical" and "environmental" models of disability and their implications for accessibility.
- Accessibility and disability in law and policy: US and internal legislation concerning rights of the disabled, accessibility requirements for government and/or commercial sites, policies in education
- Assistive technology: Students will learn to use selected assistive technologies:tools that enable individuals with disabilities to access and use information technology and online

content (screen readers, screen magnifiers, word prediction tools, graphical organizers, OCR, alternative input devices, captioning, speech recognition, specialized browsers, etc.). We will take advantage of the tutorials created by the Student Accessibility Team wherever possible.

- Accessibility standards: what the standards do (and do not) require, plus how standards are developed. Both the international standard published by the World Wide Web Consortium in 1999 and the US federal standard that took effect in 2001 are undergoing major updates. The processes for both are public; they are also very different. Students will have the opportunity to follow the evolution of specific provisions.
- Evaluating accessibility: students will apply accessibility standards to specific Web content, using different methods and tools. This includes comparing results of automated testing and user testing.
- Social impact: students will investigate how accessibility barriers affect people with disabilities in major life-areas such as work, education, health care, and recreation.

The course will feature guest presentations by industry and academic experts, especially those who have disabilities. Presentations will be recorded (with permission from the presenter); selected recordings will be transcribed and archived for later review by students; where feasible, recordings and transcripts will be made publicly available via podcast or as Digital Talking Books (DTB; see below).

Audience

Students in the following groups may find the course(s) especially interesting:

- Students with disabilities
- Rhetoric and Writing majors
- Psychology majors
- Students in Computer Sciences and Computer and Electrical Engineering
- Students in Media Studies
- Students in Design
- Students in Government
- Students in Education
- Business students
- Etc.

Deliverables

- A course Web site that exemplifies best practices in accessible Web design and conformance to the latest international standards
- A detailed instructor's guide to support instructors new to the course, including Assistant Instructors
- Learning activities and assignments that follow the principles of Universal Design for Learning
- Collection(s) of print and online readings; print materials will also be available as Digital Talking Books, a NISO-standard format that allows simultaneous visual and auditory presentation of electronic books. The DTB format is used by Recording for the Blind &

Dyslexic (www.rfbd.org), and in 2008 the Library of Congress' National Library Service for the Blind and Physically Handicapped will begin publishing DTBs .

- Additional resources for students and instructors

Learning activities

Learning activities include the following, and others to be developed:

- Encountering Barriers, in which students try to accomplish routine Web tasks using assistive technology;
- the Mouseless Week, in which students conduct all computer-related activities using only the keyboard;
- evaluating specific content against accessibility standards. Students will also visit the Accessibility Institute's usability lab, first observing user testing and then participating in design of tasks and scenarios.
- Other activities including collaborative production of text alternatives for images and other non-text content, including closed captions for video and transcripts of audio-only files

Timeline

Fall 2007

- Set up planning site for the project (e.g., a WIKI)
- Develop interview questions for students with disabilities and experts in the field. This will (a) provide important guidance in addressing the interests and needs of students with disabilities, whom we are especially interested in attracting to these courses; and (b) raise awareness of the program throughout the field, thereby increasing prospects for attracting external funding as well as recruiting new students to the University. Note that this could become an annual national survey.
- Work with Services for Students with Disabilities to recruit interviewees while protecting student confidentiality
- Submit to IRB for human subjects review.
- Conduct interviews; analyze results.
- Set up accessible content/learning management system such as ATutor (University of Toronto) or Sakai (Sakai Consortium, including UT Austin, Stanford, Michigan, Indiana, others)
- Set up the basic course Web site
- Identify and prepare examples for presentation in class; include detailed notes for instructors
- Develop learning activities, including instructions for students and detailed notes for instructors; post to course site
- Identify and collect readings for course packet
- Scan print sources and convert to Digital Talking Book format; obtain permissions where necessary; make available through Library e-reserves system
- Construct schedule of readings and assignments; post to course site

Prepare informational materials about the course and send to academic advisers as well as Services for Students with Disabilities (for direct distribution to their clients); post to “Classes” page on the Accessibility Institute site

Spring 2008

- Teach course
- Conduct in-progress evaluations to gather feedback from students
- Conduct end of semester evaluations
- Conduct follow-up interviews with selected students

Summer 2008

- Review course materials and results in light of student and peer evaluations and interview findings
- Update materials as needed
- Write up results for publication
- Recruit and train instructor(s) for next iteration
- Identify areas of attention for next course in the cluster

Requested resources for Introduction to Accessibility

1 Graduate Research Assistant, 20 hours/week

Grad. Res.

Assist.

Sept. '07 - Aug. '08
\$36,685/12 mos. Base

Salaries	\$18,342
Fringe	\$4,769

One Student Technical Assistant, 10 hours/week

Undergrad. Assist.

Sept. '07 - Aug. '08
\$18,540/12 mos. Base

Salaries	\$4,774
Fringe	621

Total salaries and fringe for Introduction to Accessibility course: \$28,506

Tuition

GRA Tuition (2 sem/1 sum)

\$7202

Total for Introduction to Accessibility course:

\$35,708

User Testing

Compensation to user testing participants with and without disabilities \$600 (20 people/\$30 each)

Upgrade to Morae Remote User Testing software v. 1.3 (digital video recording of user test sessions): \$849.00 <http://www.techsmith.com/purchase/order/moraeacademic.asp>

TOTAL for accessibility/usability lab:
\$1,449

Infrastructure

The products below support the production of Digital Talking Books using either recorded or synthetic speech, or even a mix of the two. The end result may be exported as standalone audio to CD-ROM or MP3 players, and may also be used on a computer with synchronized text and audio. (This combination is especially important for students with reading disabilities such as dyslexia, and also benefits students whose native language is not English.) We list these products as “Infrastructure” because we anticipate using them for many projects, including future academic courses, tutorials, accessibility reports, etc.

Product	Description	Ordering information	Cost
APH Studio Recorder	Software-based digital recorder designed especially for recording and editing spoken-word audio for use in Digital Talking Books. Designed by American Printing House for the Blind for use by people who are blind; also accessible to sighted users.	D-03600-See00See http://www.aph.org/tech/sr_info.htm	\$200.00
Dolphin Publisher	Software for creating Digital Talking Books: synchronizes text with recorded or synthetic audio	See http://www.yourdolphin.com/productdetail.asp?id=12#main	~\$1,200 (education price)

	<p>narration, so the resulting document can be read visually or aurally; visual display of text is synchronized with audio. Documents can be navigated by word, line, sentence, paragraph, section, chapter, etc. Fonts can be enlarged or diminished. Audio can be sped up or slowed without degradation of speech quality.</p>		
--	--	--	--

Total for Infrastructure:

\$1,200