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President:
Dr. Robert L. Caret

April 8, 1998

- Please Distribute-

PD 98-02

TO: Vice Presidents, Deans, Directors, Department Chairs and
Administrative Head

FROM: Robert L. Caret
President

SUBJECT: Presidential Directive, 98-02

**Access To Technology and Computer Laboratories
for Students With Disabilities**
(Supersedes PD 96-02)

Introduction

San José State University is committed to providing an environment that is responsive and accessible to students with disabilities. To ensure this environment, appropriate accommodations will be provided for students with disabilities so that technology and all computer laboratories are accessible, as guaranteed by law.

Purpose

The purpose of this Presidential Directive is to assure continuing compliance by San José State University with applicable federal and state legislation, and California State University System Policies regarding access to technology, and provision of services to students with disabilities.

The university completed the Self-Evaluation and Transition Report (The Report), on December 15, 1995. The Report indicated that there was a need to provide equal access to information technology for students with disabilities and that a multi-year plan be developed to ensure such access. A Multi-year Plan for Access to Technology (Plan of Action) was completed on September 16, 1996. Under the Plan of Action the university has adopted the following: (1) the creation of a Chief Information Officer (CIO) Advisory Committee on Access, which will be charged with reviewing access issues, (2) phasing in full access to existing Personal Computer (PC) Labs over several years (3) and, ensuring that all new refreshments to technology or purchases in PC Labs meet current standards of access.

Policy

It is the policy of San Jose State University (SJSU) that students with disabilities shall be given access to technology and computer laboratories, either through adaptive technology (adaptive software and hardware) or through conventional means, readers or assistants. Conventional means of access will only be used to supplement access while steps are undertaken to mitigate barriers to technology, and not as a permanent substitute for adaptive technology.

University departments and programs will respond in a timely manner to student or administrative requests (e.g. Disability Resource Center, DRC) for access to computer laboratories, by acquiring the appropriate hardware and/or software. Departments are encouraged to work with DRC staff to validate student requests.

The California State University:
Chancellor's Office
Bakersfield, Channel Islands, Chico,
Dominguez Hills, Fresno, Fullerton,
Hayward, Humboldt, Long Beach,
Los Angeles, Maritime Academy,
Monterey Bay, Northridge, Pomona
Sacramento, San Bernardino, San Diego,
San Francisco, San José, San Luis Obispo,
San Marcos, Sonoma, Stanislaus

Guidelines

1. The DRC will consult with departments or programs, faculty or staff to verify a student's need(s) and will advise departments or programs regarding the acquisition of appropriate technology to incorporate accessibility.
2. Accessible pathways to and from technology and PC stations must be provided.
3. Technology (e.g. Kiosks, telecommunications) and PC Labs at SJSU must provide appropriate access to students with disabilities. The CIO will issue guidelines and standards regarding appropriate access to technology and the number of accessible stations that are required, as well as the adaptations that are currently being employed.
4. New Purchases or Renovations: Programs and departments are responsible for the inclusion of access in all new purchases or refreshments of technology, including accessible furniture. Once technology or a PC station is equipped with adaptations, it must be identified and remain accessible to students with disabilities. Programs and departments will assign technicians and staff as needed to ensure that adaptive technology is acquired, installed and maintained.
5. Existing Facilities: In PC Labs that have not been refreshed or renovated since PD 96-02, adaptive technology will be acquired upon request (by a documented student with a disability or the DRC) and installed in a timely fashion. Programs and departments will assign technicians and staff as needed to ensure that adaptive technology is acquired, installed and maintained, once requested. The DRC will work with departments to identify sources of funding.
6. The High Technology Center (HTC), located in Clark Library, has been designated as the PC Lab responsible for training and instruction of students with disabilities. Technical staff in PC Labs need only be responsible for maintaining equipment, not for training students with disabilities. The hardware and software purchased by departments or programs must be consistent with that installed in the HTC.
7. Students with disabilities are encouraged to present or identify their disability needs for access to technology or computer laboratories well in advance of their anticipated need (e.g. identify need in advance of registering for a course utilizing computers) to ensure that adaptive technology can be acquired, installed, updated or modified. Students with disabilities must have a confidential file in the Disability Resource Center (DRC) documenting their disabilities, in order to receive training or support. Once students present their needs to the DRC, staff will evaluate their request, provide training, and contact the appropriated department(s).
8. For time sensitive academic work, students with disabilities will be provided readers, assistants, or other helpers while adaptive technology is being acquired and installed.

San José State University Accessibility Standards for Personal Computer Laboratories

The standards for accessible workstations outlined below and with the accompanying documents, establish a minimum level of compliance for personal computer laboratories. In addition to the standards for the accessible workstations, the standards are also divided into hardware, software, accessory and furniture sections for both PCs and Macs. Updates and changes will be made periodically to keep pace with technological advancements.

The intent of adaptive workstation(s) is to remove barriers for students with disabilities. To this end, disabled students must be given priority use of adaptive computer stations.

The adaptive workstation(s) need not be isolated or dedicated and can be used by able-bodied students when not occupied by a student with a disability. If a disabled student requests the use of the adaptive workstation occupied by an able-bodied student, the able-bodied student should be allowed ten minutes to finish and save their work before moving on to another computer. Provided all computers are engaged, regulations governing the lab regarding computer use apply. It is the responsibility of lab personnel to ensure the accessibility of adaptive workstations for students with disabilities.

Physical Barriers

Minimum standards for adapted workstations:

- Work surface at least 30" from the floor
- Clearance of 29" beneath the top to a depth of at least 20"
- Minimum width of 36" to allow leg space for seated individual
- Utility and equipment controls located within easy reach
- Clear aisle width sufficient to maneuver a wheelchair, recommended 5' diameter

Assistive Technology

Minimum Number of Accessible Computer Stations

The number of accessible computer workstations is based on the total number of stations per lab. The following are minimum requirements:

Less than 25 stations ► 1 accessible station

- 25 - 50 stations ► 3 accessible stations
- 50 - 75 stations ► 4 accessible stations
- More than 75 stations ► 5% of total number of stations should be accessible

Below is an overview of the adaptive hardware and software required for a minimum standard and enhanced standard workstation. These stations must be available to students with disabilities and maintained by the department that operates the lab. ***One enhanced standard workstation must be installed in labs with more than 25 stations.*** The accompanying documents detail the software and hardware required for PC's and Macs.

Minimum Standard Workstation

- Screen reader software: for the PC use JAWS (www.hj.com); for the Mac use Outspoken (www.aagi.com)
- Screen magnification software: for the PC use MAGic (www.hj.com); for the Mac use InLarge (www.aagi.com)
- Sound Card: use any Windows compatible Sound Card for the PC along with Jaws software; Mac is sound ready
- Accessible furniture
- 17" or larger monitor for each adapted workstation

Enhanced Standard Workstation

All minimum standards with the addition of:

- CCTV, Closed Circuit Television - Magnification System: (www.optelec.com)
- Scanner
- Braille Printer (*only required in labs of 50 or more stations*)
- Voice Recognition software
- Visual outlining software

*Example of the configuration of a lab with 56
Stations:*

- 3 minimum standard workstations and 1 enhanced

Contacts

Questions regarding the standards: Dr. Maurice Mitchell, Associate Vice President, Instruction/Research Services (4-7405) and Martin B. Schuler, Director, DRC (4-6007). Questions regarding the adaptive technology: Neveen Radwan, Information Technology Coordinator, DRC (4-6004).

March 24, 1998

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

PC COMPUTER SYSTEM—Hardware	Page 1
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Computer	No recommended vendor		233 (minimum) MHz Pentium Computer with at least 32mb RAM and 3.0 GB hard drive, 4 serial ports, 2 parallel port, FD/HD controller, 101 tactile/click keyboard	\$2000	If multimedia system is purchased, system includes CD-ROM and sound board/speakers - will not need to purchase these separately
Monitor	No recommended vendor		17" SVGA .28 dot pitch, not-Interlaced, 1 MB SVGA graphics card, low radiation	\$600	
Disk Drives	No recommended vendor		2 3.5" high density floppy drives	\$60	
Mouse	No recommended vendor	Microsoft or Logitech Mouse	Microsoft compatible; mouse software	\$60	
Printer	No recommended vendor	Hewlett-Packard 600 series (inkjet); II series (laser)	Front-loading inkjet or laser	\$300-\$500	Paper loading tray is easily accessible
Track ball	No recommended vendor	Kensington TurboMouse or Logitech Trackman	Microsoft compatible; mouse software	\$100	

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

PC COMPUTER SYSTEM—Hardware	Page 2
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
CD-Rom	No recommended vendor		16x CD-Rom	\$100	
Sound Card & Speakers	No recommended vendor	JAWS will work with any windows-compatible sound card	16 or 32-Bit sound card; digital stereo speakers.	Sound Card \$150 Speakers \$50	Included if multimedia computer system is purchased.
Modem	No recommended vendor	US Robotics, 28.8 BPS or greater, or Direct Connect	Internal or external; 56.6 BPS Hayes compatible with communications software	\$150	For internet access. If network connection is available, modem is not necessary.
Speech Synthesizer	DecTalk Digital Equipment Corp. 12 Crosby Drive Bedford, MA 01730 (www.digital.com)	DecTalk	Internal Card	\$850	optional

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Flat bed scanner ----- OCR (software)	No recommended vendor ----- No recommended vendor	----- ----- Omni Page Pro	Hewlett-Packard flatbed scanner with reading software (DecTalk internal speech synthesizer optional) -----	\$500 ----- \$400 w/ purchase of scanner	Used with computer to scan text; computer provides speech output through speech synthesizer and screen reading software
Reading Machine	SensAbility Inc. 283 Peterson Road Libertyville, IL 60048 Fax: (847) 367-4003 Contact: Ed Vitu	Galileo Reading System	Free standing scanner with built-in floppy and hard drive. Speech guided user interface	\$5000	10% Educational Discount
Braille Printer	No recommended vendor	Index Basic-D Braille Printer	Double sided printer with tractor-fed paper. Also has a speech guided user interface.	\$3500	78 characters per second; can print multiple copies.

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

PC COMPUTER SYSTEM—Hardware	Page 4
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
CCTV	<p>TeleSensory 455 N. Bernardo Ave. P.O. Box 7455 Mountain View, CA 94039-7455 (800) 227-8418 www.telesensory.com</p> <p>-----</p> <p>Optelec 6 Lyberty Way P.O. Box 729 Westford, MA 01886 www.optelec.com</p>		Black and white video magnifier with at least a 14" viewing screen.	\$2700-\$3000	Offers up to 60x magnification of any printed material.

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

PC COMPUTER SYSTEM—Software

Page 5

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Standard Software/Operating system	No recommended vendor	Windows	Most recent version		Comes with computer
Text Enlarger	Henter-Joyce, Inc. 2100 62 nd Ave., North St. Petersburg, FL 33702 (www.hj.com)	MAGic	Smooth scrolling, easy to read text. Versions available for both Windows 95 and NT.	\$350 Win 95 \$800 Win NT Multiple license discount available	Magnification from 2x to 16x. Smooth edged fonts. User configuration through menu or command line switches.
Screen Reader	Henter-Joyce, Inc. 2100 62 nd Ave., North St. Petersburg, FL 33702 (www.hj.com)	JAWS	Configurable voice output: tone, pitch, etc. Highlight words as it reads. For use with students with learning disabilities.	\$800 NT version and multiple copy discount available	Compatibility with major word processing and other programs. User configurable through menu.

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Speech Input/Dictation System	Any software retailer Dragon Systems 320 Nevada St. Newton, MA 02160 (617) 965-5200 www.dragaonsys.com	Dragon Dictate Dragon Naturally Speaking	At least 30,000 word vocabulary	30,000 word \$200 60,000 word \$700	Contains active vocabulary with word recognition. Input through microphone. Built-in commands for popular word processing and spreadsheet programs.
Keyboard Filter	HumanWare, Inc. 6245 King Road Loomis, CA 95650 www.humanware.com -----	TextHelp -----	Works with DOS/Windows -----	\$250 -----	Allows user to look down the shift, alt, and control keys to provide one – handed access; allows the user to program in a delay to permit typing by people who have limited muscular control.
	Microsoft Corporation One Microsoft Way Redmond, WA 98052-6399 www.microsoft.com	Access Pack for Windows	Works with Windows	\$0	

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Braille Translator	TeleSensory 455 N. Bernardo Ave. P.O. Box 7455 Mountain View, CA 94039-7455 (800) 227-8418 www.telesensory.com	Duxbury/PC Version		\$500	Translate ASCII text files.
	----- GW Micro 310 Racquet Drive Fort Wayne, IN 46825	Braille Talk		----- \$200	

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

PC COMPUTER SYSTEM—Accessories	Page 8
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Glare Screen	No recommended vendor			\$25	Reduces eye strain
Headphones	No recommended vendor			\$7	Used with speech synthesizer and screen reading software
Wrist Rest & Ergonomic mouse pad	No recommended vendor			\$9-\$25	

SJSU Minimum Requirements for Accessible Computer Work Stations

PC's

PC COMPUTER SYSTEM—Furniture	Page 9
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Table	Contract Interiors 9365 Waples St. Suite D San Diego, CA 92121 (619) 452-2600 ----- San Diego Office Interiors 7946 Clairemont Mesa Blvd. San Diego, CA 92111 (619) 495-7364	Hayworth Table Systems	Adjustable continuous height table (hand crank) 45”w x 27”d	\$900	
Ergonomic Chair	Prison Industry Authority 506 East Natoma St. Folsom, CA 95630	Ultra Chair with arms	Adjustable back and height.	\$265	Reduces stress on back and neck.

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Computer	No recommended vendor	Macintosh PowerMac series (www.apple.com)	Apple Power Macintosh 6500/250, 32/3.0GB/CD, MiniTower w. 132 MHz power PC 604 Processor. 32 MB RAM, 3.0 GB hard drive, 1.4 MB Apple Super Drive, Eight Speed CD Rom Drive, 16 bit stereo input/output, 64 bit graphics accelerator with 2 MB VRAM.	\$2000	
Monitor	No recommended vendor		17" color, .28 dot pitch, non-interlaced	\$500	
Keyboard	No recommended vendor		Extended keyboard		
Track ball	No recommended vendor	Kensington TurboMouse		\$100	
Printer	No recommended vendor	Hewlett-Packard 620 series (inkjet); II series (laser)	Front-loading inkjet or laser	\$300-\$500	Paper loading tray is easily accessible

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Modem	No recommended vendor	Any major brand (e.g. external U.S. Robotics 28.8 or faster baud rate)	External 28.8 BPS with software.	\$150-\$200	For dial-up access to campus computer and internet. If network connection is available, modem is not necessary.
Flat bed scanner	No recommended vendor		Hewlett-Packard flatbed scanner with reading software (DecTalk internal speech synthesizer optional)	\$500	Used with computer to scan text; computer provides speech output through speech synthesizer and screen reading software
----- - OCR (software)	No recommended vendor	----- ----- Omni Page Pro (www.caere.com)	-----	----- \$400 w/ purchase of scanner	
Reading Machine	SensAbility Inc. 283 Peterson Road Libertyville, IL 60048 Fax: (847) 367-4003 Contact: Ed Vitu	Galileo Reading System	Free standing scanner with built-in floppy and hard drive. Speech guided user interface	\$5000	10% Educational discount

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Braille Printer	No recommended vendor	Index Basic-D Braille Printer	Double sided printer with tractor-fed paper. Also has a speech guided user interface	\$3500	78 characters per second; can print multiple copies.
CCTV	TeleSensory 455 N. Bernardo Ave. P.O. Box 7455 Mountain View, CA 94039-7455 (800) 227-8418 www.telesensory.com ----- Optelec 6 Lyberty Way P.O. Box 729 Westford, MA 01886 www.optelec.com		Black and white video magnifier with at least a 14" viewing screen	\$2700-\$3000	Offers up to 60x magnification of any printed material.

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

PC COMPUTER SYSTEM—Software	Page 4
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Standard Software/Operating system	No recommended vendor	Mac Operating System	Standard, System 7.5 or later		Comes with computer
Text Enlarger	ALVA Access Group 5801 Christie Ave Suite 475 Emeryville, CA 94608 Voice: 510-923-6280 www.aagi.com	InLarge	Smooth scrolling, easy to read text	\$300	Speaks text through Mac's internal speaker.
Screen Reader	ALVA Access Group 5801 Christie Ave Suite 475 Emeryville, CA 94608 Voice: 510-923-6280 www.aagi.com	OutSpoken		\$500	Scrolls faster and more smoothly than CloseView.

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

PC COMPUTER SYSTEM—Software	Page 5
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Keyboard Filter	No recommended vendor	Easy Access		\$0	Allows user to lock down the shift, alt, and control keys to provide one-handed access; allows the user to program in a delay to permit typing by people who have limited muscular control; included with Mac utilities.

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

PC COMPUTER SYSTEM—Accessories	Page 6
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ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Glare Screen	No recommended vendor			\$25	Reduces eye strain
Wrist Rest & Ergonomic mouse pad	No recommended vendor			\$9-\$25	Reduces stress on hand/wrist
Headphones	No recommended vendor			\$7	Used with screen reading software.

SJSU Minimum Requirements for Accessible Computer Work Stations

Macs

PC COMPUTER SYSTEM—Furniture					Page 7
ITEM	VENDOR	PRODUCT NAME	SPECIFICATIONS	PRICE RANGE	COMMENTS
Table	Contract Interiors 9365 Waples St. Suite D San Diego, CA 92121 (619) 452-2600 ----- San Diego Office Interiors 7946 Clairemont Mesa Blvd. San Diego, CA 92111 (619) 495-7364	Hayworth Table Systems	Adjustable continuous height table (hand crank) 45”w x 27”d	\$900	
Ergonomic Chair	Prison Industry Authority 506 East Natoma St. Folsom, CA 95630	Ultra II Chair with arms	Adjustable back and height.	\$265	Reduces stress on back and neck