Name _____

SLIS 5720 AV Labs
Equipment Operation

Verification of competency in the following pieces of AV equipment is required before a candidate may be recommended for the school librarian certificate. Students will receive a grade of incomplete in SLIS5720 until all the competency sheets have been acceptably completed. The following competencies may be verified by performing the listed tasks in the presence of a person who has an expertise in the specific equipment. Examples of such persons are given in the signature portion of each competency. If you would prefer to come to campus to be signed off on these competencies, one day each semester will be designated for this activity and equipment will be provided. You are expected to notify the School Library Program Office that you will attend. If no reservations are made, the on-campus day will be cancelled. Contact the School Library Program at slislr@lis.admin.unt.edu for information on dates for this semester.

The CD-ROM you received to accompany this course has video demonstrations of all the equipment you are required to operate. The exact models you see in the videos may not be the same models available to you, however your equipment should be similar enough that you can extrapolate the instructions to cover your own equipment. You may also receive operational assistance from the expert who will verify your competence on these pieces of equipment.

The equipment you will be expected to operate include:
AV Competency #1 = Overhead projector
AV Competency #2 = Data Projector
AV Competency #3 = TV/VCR/DVR
AV Competency #4 = Video Camera
AV Competency #5 = Digital Camera
AV Competency #6 = Scanner
AV Competency #7 = Computer

In addition, for your final exam, review the CD-ROM video demonstrations of:
Splicing audio tape
Replacing a videocassette case
Coiling cable
Operating a laserdisc player
Operating a sound/filmstrip projector
Operating a slide/tape system
Operating a 35mm camera
Operating a scan converter
Operating a laminator
Cleaning a VCR

Name _____

AV Lab #1
Overhead Projector Operation

The overhead projector is the technology device most likely to be available in the classroom. There are traditional overhead devices that require the projected material to be transparent, and there are "document camera" type devices that can project both transparent and opaque materials. View the video to see how to clean and maintain a projector.

Set Up
Connect power cord to AC outlet
Locate controls:
　　　On/off switch
　　　Focus knob
　　　Lens head (controls where image is projected)

Operate
Complete each of the following steps:
_____ Turn projector on. (Some projectors have a two-position on-switch).
_____ Position transparency on stage.
_____ Adjust projector to eliminate keystoning
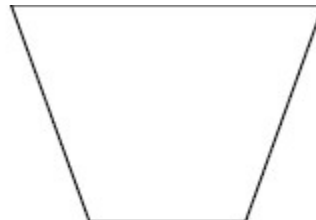_____ Focus image using focus knob.

Disassemble
Restore to storage conformation.

Troubleshooting

Image distortion: The head of the projector should be perpendicular to the projection screen. If the projector is not at right angles to the screen, a phenomenon known as "keystoning" takes place. The projected image takes on the shape of the keystone of an arch. See diagram 1.

Ideal projected image　　　　Keystoned image

Diagram 1

To correct the problem, raise or lower the projector or screen until perpendicular to one another. Tilting the screen can also solve the problem.

Name _____

No light after flipping switch: a) Make sure the projector is plugged in and turned on! This is the most common reason for any AV equipment failure. b) Make sure the power switch is all the way to the <u>on</u> position. Some overheads have a 3 position switch so the fan can run without the bulb on to cool the bulb after use. c) Lamp may be burned out. Change per instructions in video. NEVER TOUCH BULB WITH BARE HANDS. Natural oils on your fingers will shorten bulb life significantly. Bulbs can be expensive ≈ $25 apiece if bought singly. d) Switch may be defective. Have technician correct. This is the least likely cause.

Dark spot on area of screen: a) If the dark area is around the edge of the screen, the problem is that the fresnel (pronounced "freh-nel") lens is in upside down. Some fresnel lenses are easy to unscrew and reverse. Others require the assistance of a technician. While the lens is out, wash it with Dawn or other mild dishwashing soap before replacing. b) If the dark area is elsewhere on the screen, the lamp socket may need adjusting. This repair requires a technician.

Failure of lens to focus despite all adjustments: If you are certain that dirt isn't the cause (see video for cleaning instructions) the likely cause is a warped fresnel lens. Fresnel lenses, being plastic, can be damaged by excessive heat. The cause may be a defective fan, or may be caused by stacking papers or books atop a running projector. A technician will need to replace the lens and check the fan and thermostat.

Verification
Signature _____ Date _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff, ESC technology staff)

Name _____

AV Lab #2
Data Projector Operation

A data projector works much like a scan converter. It accepts video output from the computer and displays it on a wall or projection screen. The advantage of the projector is that it projects a larger image than that on a typical 32" TV -- as large as 10' x 12', depending on the projector. Data projectors are suitable for large classrooms, auditoriums, or any application where viewing computer screen detail is important.

Proxima Data projector

The disadvantage of data projectors is the cost. A typical scan converter costs about $200 while a good data projector can cost from $2500 - $5000. Bulbs for data projectors are also expensive – up to $500 each.

Setup
Locate input/output ports on computer and projector
Hook computer to projector
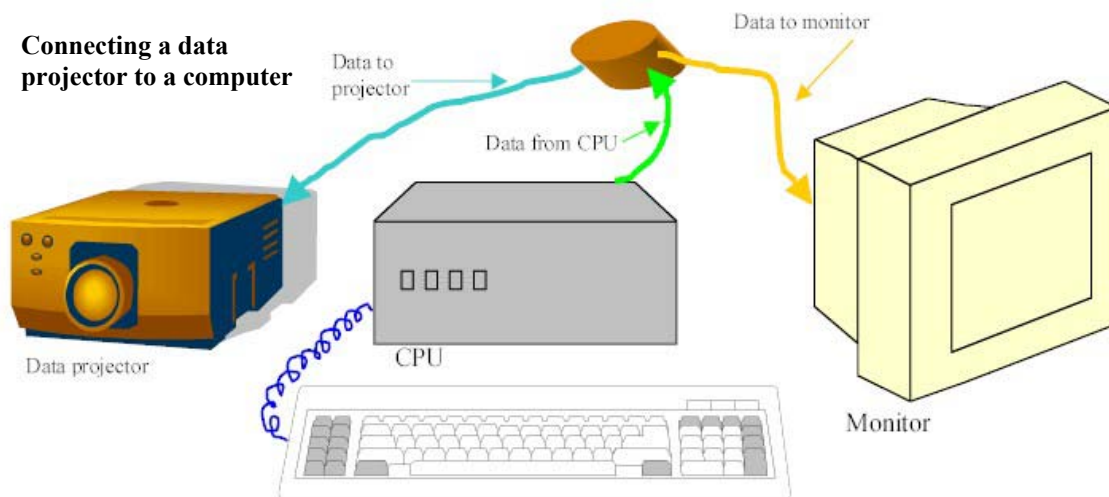If available, hook computer monitor to projector
Locate controls:
    On/off switch for projector
    Volume
    Blank button
    Focus controls

Connecting a data projector to a computer

Name _____

Operation
_____ Turn on projector.
_____ Turn on computer.
_____ Select data source.
_____ Focus display.
_____ Adjust color/brightness, etc. if needed

Disassemble
Shut down computer. Disconnect computer data cable from projector and computer. Reattach monitor data cable to video port on computer.

Troubleshooting
No picture. Is the power on? If you are using a laptop computer, switch video display mode on laptop computer to external. Is blank or standby selected?

Picture not clear. Adjust focus; clean lens.

Remote doesn't work. Does it need new batteries?

Verification
Signature _____ Date _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff, ESC technology staff; AV or computer store trainers or personnel.)

Name _____

AV Lab #3
TV/VCR/DVR Operation

Refer to video for more information.

Set Up
Connect power cords to AC outlet.
Locate controls:
      On/off switches for both TV and VCR/DVR
      Volume
      Play, rewind, fast forward, stop, eject, pause, record buttons
      TV/VCR/DVR toggle button
      Channel selection button

Operate
Complete each of the following steps:
_____ Turn TV and VCR on (some models are a combination of the two).
_____ Load and play videocassette.
_____ Stop and rewind videocassette.
_____ Change reception channel and connect cables for off-air taping.

Disassemble
Eject videocassette.
Restore to storage conformation.

Troubleshooting

Videotape is running, but there is no picture or sound on monitor: a) You forgot to select the TV/VCR switch; b) the VCR isn't hooked up properly; or c) you have the VCR set to either channel 3 or 4 and the TV is set to the opposite number.

Fuzzy sound or snowy picture: Tracking needs to be adjusted.

Tape loose in video cassette: Tighten by using fingers to wind the spools in opposite directions.


Verification
Signature _____ Date _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff, ESC technology staff)

Name _____

AV Lab #4
Video Camera Operation

A video camera uses a CCD (charged-coupled device) – a light-sensitive electronic module – to change light into electrical impulses. These impulses are stored on magnetic tape. The recorded tape can be played back through the camera into its video eyepiece, or to a regular television set. Video is recorded on tape in a helical arrangement (see diagram), which prevents accurate splicing of the tape.

Audio track

Video track

Control track
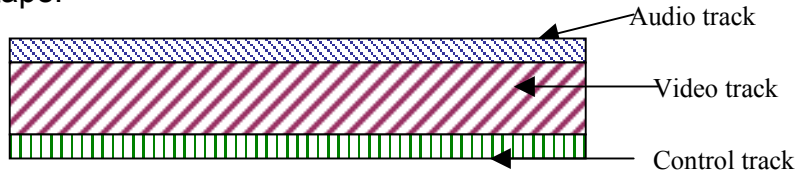
Set Up
Connect power cord to AC outlet and AC adaptor, or be sure battery is in place.
Locate controls
      Power switch
      Battery eject
      Focus rings
      Play, rewind, fast forward, stop/eject, and pause/still buttons
      Zoom controls – fast forward and reverse
      Manual/auto focus button
      Red record/button
Locate parts
      Battery pack
      Lens cover
      Eyepiece/viewfinder: Notice indicators through viewfinder – battery level (never let camera run on low battery, never leave battery discharged for more than 24 hours), time remaining for recording, date and time, operating mode rec/pause/ff/play/rew.
      Microphone
      Handgrip
Press stop/eject button and insert videocassette window side out. Shut case.

Operate
Compete each of the following steps:
_____ Turn power switch on. Red indicator light will illuminate. Turn eyepiece out to the left so you can look through it. It will click into place.
_____ Remove lens cover and set focus button to manual. This will prevent the camera from constantly focusing with each movement the subject makes, draining power. Looking through the viewfinder, manually focus the subject.
_____ Press record/pause to begin recording. Press again to pause recording. Practice zooming smoothly into and out from subject. Remember that zooming takes more battery power. In pause mode, press stop/eject to stop recording.

Disassemble
Remove videocassette.
Replace lens cover.
Return eyepiece to storage position.
Switch camera off.
Restore to storage conformation.

Troubleshooting

Camera is on, but I can't see my subject through the viewfinder: a) Lens cap on; b) camera in "play" mode.

The videocassette case won't shut: Cassette will only fit case one way. Turn around.

My subject, through the viewfinder, is only in black and white: Some viewfinders are black & while even though the camera records in color. Perhaps you have a special feature turned on in camera.

Verification
Signature _____ Date _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff, ESC technology staff; camera store or AV store personnel)

Name _____

AV Lab #5
Digital Camera Operation

The digital camera demonstrated in the class video stores images on floppy discs. Some digital cameras store images on removable memory chips or "sticks" that require special adapters. Other digital cameras store their images internally and send their data directly to the computer via a special cable. Digital images are useful for direct import to web pages and word processing documents. Refer to Internet site http://www.shortcourses.com/chapter03.htm and to class video for more information.

Set Up
Be sure batteries are charged and installed.
Locate controls
        Power switch
        Shutter release button
        Flash button
        Play/camera
        Brightness controls
        Zoom control (wide/tight)
        Auto focus control
        Control panel display

Operate
Complete each of the following steps:
_____ Open the lens cover (do not touch the lens).
_____ Insert formatted floppy disk.
_____ Power on the camera.
_____ Select the desired flash setting.
_____ Frame your subject in the viewfinder or on the LCD panel. Press the shutter release button. Take multiple photographs.
_____ Select image from camera index. Delete one image.
_____ Close lens cover when finished.

Disassemble
Return to storage conformation.

Troubleshooting
While trying to photograph, the control panel registers blank. a) Camera is switched to viewfinder mode; b) control panel is turned off; c) camera is not turned on.

LCD display shows only black and white images. a) Camera has special features turned on; b) LCD display is monochrome.

Name _____

Verification
Signature _____ Date _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff,
ESC technology staff; camera or computer store trainers or personnel)

Name _____

AV Lab #6
Scanner Operation

A scanner converts print documents and images to digital format for use on the Web and in word processing or desktop publishing documents. Refer to Internet site: http://www.duq.edu/Technology/QS/pcscanner.html for more information. Your scanner and scanning software may differ from this setup. Consult your local computer technician to see if these directions must be modified for your own installation.

Set Up
Locate controls:
      Power switch
      Document cover
If scanner is off, restart computer with scanner on so the computer will communicate with scanner.

Operate
Complete each of the following steps:
      _____ Double click on HP Precision Scan Pro II icon on desktop.
      _____ Place image/document face down on scanner glass at the corner marked with the page icon (upper right corner).
      _____ Click on the Preview button.
      _____ When scanned image appears, drag selection rectangle around the portion of the image you wish to scan.
      _____ Click SCAN button
      _____ Select Save As from the scan menu or click on floppy disk icon. Image must be saved to floppy disk! Name file. Click SAVE.
      _____ In JPEG Options dialog box, click OK.
      _____ To edit image, double click on name of image file. MS Photo Editor will automatically open for edit.
      _____ Print image.

Remove original from glass

Troubleshooting
Straight lines on your scanned image appear crooked or jagged: Image was not aligned with edge of scanner. Straighten and rescan or use image editing software to rotate image until sides are straight.

Power is on to scanner but computer error message says computer cannot find scanner: Scanner was not on when computer was started. Turn on scanner and reboot computer.

Verification
Signature _____ Date _____

Name _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff,
ESC technology staff; computer store personnel)

Name _____

AV Lab #7
Computer Operation

Never hook or unhook computer components while there is power to the CPU. When working inside the computer case, ground yourself by touching the large, square power supply box before touching any other components. Refer to video for more information.

Setup
Identify the following parts:

> CPU – central processing unit (main computer box)
> Keyboard
> Monitor
> Mouse
> Printer
> Speakers
> Monitor data cable
> Printer cable
> Power cables to printer, monitor and CRU
> Network data port
> Network cable

Locate controls on CPU, monitor, printer and speakers.

Typical computer hook-up
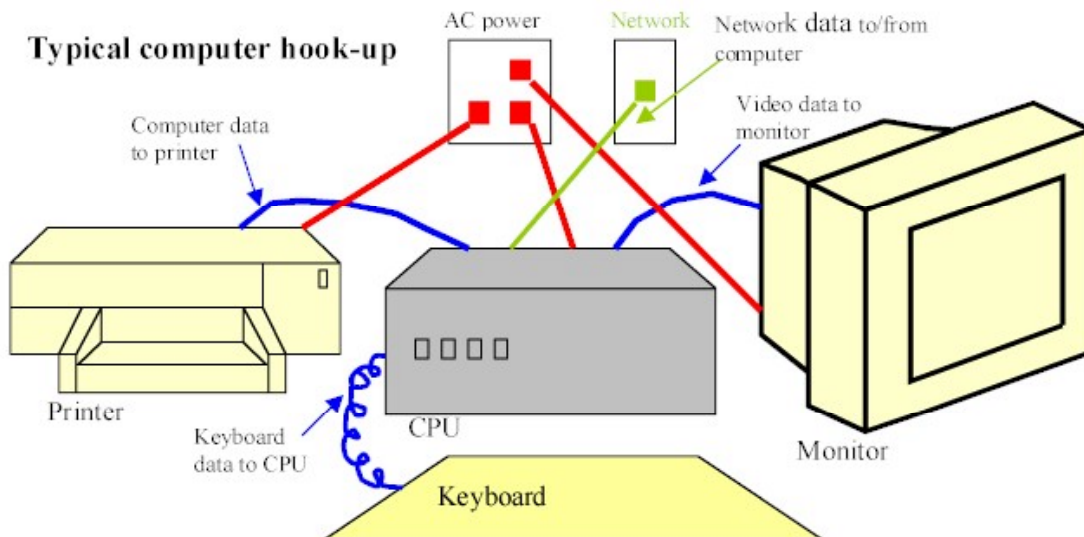
Operate
Complete each of the following steps:

_____ Open the computer case. Computer cases are held together in different ways: Most use from two to six Phillips-head screws along one or two edges. Remove the screws and slide the cover off of the system case.

_____ Select an expansion slot on the computer's system board

_____ Insert and secure the card by pressing down firmly with both thumbs. The card should fit fully and squarely into the slot you have chosen for it. Once

Name _____

the card is in the slot, use a screw to secure the card's bracket to the computer case.

_____ Check to make sure that you have not pulled or jarred loose any cables or wires, then replace the case cover on the machine and re-fasten it with the screws.

_____ Connect monitor data cable to video port on CPU.

_____ Connect keyboard to keyboard connector on CPU. Check to see that pins are properly aligned before pressing in.

_____ Connect mouse.

_____ Connect printer cable to parallel port on printer.

_____ Connect printer cable to LPT 1 port on CPU.

_____ Connect speakers to Audio Out or speaker port on sound card.

_____ Connect network cable to network jack in CPU.

_____ Connect other end of network cable to network wall jack (make sure it isn't a telephone jack!).

_____ Connect power cables to CPU, monitor, printer and speakers.

_____ Turn on monitor, printer, and speakers.

_____ Turn on CPU.

_____ Follow computer shut down procedure before power off.

Troubleshooting

Computer is on, but no image appears on monitor: a) Monitor is not connected to video card; b) monitor is not plugged in and turned on.

Computer and monitor appear to be working normally, but network access is not possible: a) Computer is not connected to network. Unplug and replug network cables at both ends; b) computer is not configured for network access. Consult technician; c) network jack is not working. Try another jack.

Computer works, but nothing will print: a) Printer is not hooked to parallel port of CPU; b) printer is not turned on; c) printer drivers are not installed.

Verification
Signature _____ Date _____

Position _____
(Acceptable supervisors: certified librarians, building or district technology staff, ESC technology staff; computer store personnel or trainers)