Florida State University
Physical Education Online Program Technology Manual

Welcome to the Online Physical Education Program technology support manual. This document will provide step-by-step instructions, troubleshooting, and general technology information for students when attempting to shoot, save, edit, and digitize video clips for submission to various courses. Additionally, the manual will offer a variety of suggestions for students interested in buying new or upgrading current technology.

I. Video Cameras: Digital & Analog:

Once you have completed filming your video, you will need a way to prepare it for and load it into your computer so you can edit it and prepare it for posting on a network (e.g., Blackboard) or the Internet. Remember the duration of the video is to be no more than 2 minutes – NO EXCEPTIONS. There are two types of video cameras available today: digital and analog. If you have a digital video camera, the video is already in the digital format your computer needs, but you need to make sure you have a FireWire port on your computer and the appropriate cables to transfer the video from your camera to your computer. If your computer does not have a FireWire port, you can purchase an adapter to transfer the video to your computer.

If your video camera is not a digital model, your camera saves video as an analog signal. Analog signals need to be processed and compressed into digital files to be used on computers. You need to identify what type of ports are on your video camera and your computer and the type of video capture card in your computer or whether you will need to acquire a new cable(s), video capture card and/or adapter (these procedures are outlined below).

II. Ports, Plugs and All That:

Your video will transfer to your computer through cables connected to ports on your video camera or VCR and your computer. Deciding how to connect cables and what ports to use can be confusing so we have identified the primary ones below.

FireWire Ports: FireWire is the industry standard for high-speed data connection for digital video, so this is only important if you have a digital camera. To transfer video from a digital camera to a computer with a FireWire port, just put one end of the cable into the FireWire port on the video camera or videotape recorder and the other into

computer's FireWire port. The icon for FireWire resembles a "Y." If your computer does not have a FireWire port and you have a digital camera, you can purchase an adapter for your computer.

Audio and Video Ports (sometimes called RCA or radio ports): These are the ports that are often found on televisions, VCR's, computers and DV players. They may be color-coded in red, yellow, and white. For these, you will need cables that have endings for audio and video ports. For better video capture, some teachers recommend the cables with the gold plugs. If you have an analog video camera and a computer with these ports, just connect the cable from the audio and video output ports on your video camera or VCR to the audio and video input ports on the computer.

S Video Ports: Many digital devices also have S Video connections. S Video provides a higher quality resolution than is available through video ports. Remember, however, that S Video is for video, not audio.

Other Ports: We have listed the most common connections, but you may come across others, for example, LTV connections, or some computers may connect to video capture devices through USB, PCI or parallel ports. These devices, such as the Dazzle adapter, then connect to ports on a VCR or video camera. Your best bet is to follow the directions for your cords and devices.

III. Technology Requirements:

In order for you to successfully complete all of the multimedia elements required to finish the FSU Physical Education MS Online Program, you will need to have access to or own the following hardware and software. The requirements will sound technical, but please make sure you have the following components, otherwise you will encounter much unneeded frustration and headache.

- A computer to which you have access that has the following capabilities:

Hardware: (minimum requirements)

1. At least a 40 GB hard drive
2. FireWire Port or USB 2.0 Port (to transfer video from camera to computer)
3. Graphics card that interfaces with the specific computer's video editing software
4. 512 MB RAM

Software:

1. Broadband (High Speed) Internet connection
2. Video Editing Software (with capability to export compressed video to AVI or Windows Media Player format)

Computer:

Any of the following options are highly recommended:

Computer	*Model*	*Processor*	*Memory / Hard Drive*	*Price*	*Video Software*
Macbook	Laptop	1.83GHz Intel Core Duo	512MB / 667	1,099.00 + Tax	iMovie - 2
iMac DV	iMac - Desktop	1.83GHz Intel Core Duo	512MB / 667	1,299.00 + Tax	iMovie - 2
Sony VAIO	RB41P - Desktop	Pentium 4 – 530J HT	512MB / 200GB	1,200.00 + Tax	DV GATE + / Movie Maker
Dell Dimension XPS	410 - Desktop	Intel Core 2 Duo processor	256MB / 500GB	1,595.00 + Tax	Movie Maker
Dell Inspiron	9300 – Laptop	Pentium M - 730	512MB / 40GB	1,400.00 + Tax	*Additional:* Vegas Video ($500.00)

- **Processor** - The processor (also called the CPU) is the part of the computer that actually works with the data and runs the programs.
- **Memory** - RAM (random access memory) is the memory that is used to save anything "live and running" while you are working on the computer (remembers the program data that has been entered while the program is open, running, etc) This memory is usually cleared when you close a program, or turn off the computer. For example, if I had a computer that had 256 MB of memory, I would be hesitant to open up too many digital editing programs as the computer would most likely not have enough memory to handle running that many programs at the same time.
- **Hard Drive** - this is the long term memory storage device (usually described in Gigabites –GB). It is stored no matter if you turn off the computer or not. Examples of this are: files, folders, movies, etc.
- *Video editing/compression software can be purchased separately but on some machines (e.g., SONY VAIO) it will come standard. If you plan on using the machine for these processes in the future then purchase one with this type of software already installed.*
- *Instructions for the editing software are available bundled with the package and are also available form the manufacturer.*

Video Editing Software (Options):

Pinnacle Studio 10.5 $49.00 - 99.00	Windows Movie Maker $59.00	Apple iMovie 2 $99.00	Muvee autoProducer 5 $99.95	Adobe Premier $849

*No additional hardware requirements are needed.
*Moviemaker comes installed on Sony machines and is an option on all Dell machines when you order.
*There are many others on the market that will do as well.

Camera:
Any of the following options are highly recommended:

Item	*Make*	*Model*	*Price*	*Possible Vendor*
Mini DV	Canon	ZR-600	349.99	Best Buy
Mini DV	JVC	GR-D395US	369.99	Best Buy
Mini DV	SONY	DCR-HC46	479.99	Crutchfield.com
Mini DV	SONY	**DCR-HC96	799.99	Sonystyle.com

*All models and makes of cameras are compatible with all major computer brands; no additional software or hardware requirements are needed.
*Older cameras can be used as well however; you will need a conversion tape and a DVD / VCR recorder.
**This camera will convert analog to digital.

DVD / VCR Player Recorder:
If purchasing the above items (i.e., camera and computer at the same time) are out of your reach financially you may have the option to borrow the use of a camera to record your lesson and then work to edit the footage by converting the analog signal to digital (this will be discussed later in the manual) using a DVD recorder.

Any of the following options for this conversion procedure are highly recommended:

Item	*Make*	*Model*	*Price*	*Possible Vendor*
DVD / VCR Recorder Combo	Toshiba	D-VR5	249.99	Best Buy
DVD / VCR Recorder Combo	Panasonic	DMR-ES35VS	244.99	Circuit City
DVD / VCR Recorder Combo	**SONY	**RDRVX515	299.99	Best Buy

**This is what we use here at FSU.

IV. Installation (Set-Up):

Once you have made your decisions regarding the purchase of any of the above pieces of equipment it is time to set up your system. This section will provide instructions and guidelines for utilizing your new equipment.

A. Guidelines for a SONY System:

This is what we currently use here at FSU so we are able to provide the most detailed instructions and support for this set-up. In this section we are assuming that you have a Sony configuration (i.e., computer, camera, and peripheral cables and connectors).

1. Tape the lesson you wish (make sure you get sufficient footage however, the clip you upload will only need to be 2 minutes).
2. Connect the camera to the computer using the cables supplied with the unit (or the optional cables you purchase if you are converting from analog to digital).
3. When the connection is made the computer will prompt you to select the program you wish to use for video editing (e.g., moviemaker, Vegasvideo, etc.).
4. Make sure you have one of the video editing programs installed or you will not be able to edit your clips.
5. Follow the instructions for each of these programs to edit your footage down to 2 minutes.

SONY System (No camera):

If you do not own or cannot purchase a camera, but do have access to one for shooting, then you will need a way to convert the analog (VCR / Mini DV tape) to a digital signal for editing.

1. If you have and older camera (one that records to a standard tape) you will require additional equipment (see DVD recorder section of the handbook).
2. In this instance you will have to record the footage to a DVD and then upload the new digital footage to the computer for editing.
3. If you have a new camera (i.e., Mini DV) this camera will plug into the computer system and will be ready for video transfer. **Note:** only digital cameras will have the capabilities for this transfer as previously discussed.
4. Once you have the footage on a tape you simply place the tape into the DVD recorder unit and follow the instructions below**.
5. Once you have created the DVD place it in the computer and select the program you wish to use for editing.

**VHS to DVD (analog to digital):

1. Insert tape you wish to convert to DVD.
2. Insert rewritable DVD into drive (the unit may need to format the DVD so it may take a few moments).
3. Push video arrow (pointing to the DVD player) and copying will begin.
4. Push stop when you are done or simply allow the unit to stop on its own.
5. The unit will then write the contents to the DVD (again this may take a few moments).
6. To convert the DVD to VHS simply do the same procedure but in reverse.

SONY System (converting analog/standard VCR tape to digital signal):

Note: you may need to purchase a Sony I-Link cable and an AV/DV conversion cable if attempting to go from analog to digital (i.e., VCR tape to computer; these instructions are outlined below). This procedure will require the Sony DCR-HC96 camera.

Camera Hardware Set-Up:

1. Attach Sony DCR-HC96 to docking station. Plug station into power outlet (the battery may not last for the duration of the video capture).
2. Connect A/V wire from VCR to docking station (cord already attached to VCR).
3. Connect grey I-Link cable form back of VIAO computer to docking station (cord already attached to computer).
4. Once both cords are plugged in, the computer will send up a prompt for you to select the video capture program you wish to use for editing (e.g., Windows Movie Maker, DV Gate Plus, or Sony Vegas Video).
5. Using Windows Movie Maker the program will ask what to name and where to save the file (My Videos). Additionally, select the best quality for video playback option.
6. Then it will ask whether you wish to capture the entire tape or partial (select which option you want) – Start Capture.
7. Select Program

Camera Set-Up:

1. Once camera is on slide the power switch to get to the PLAY/EDIT lamp.
2. On the LCD screen, touch P-MENU – MENU – TOOLBOX (Standard Set) – [A/V – DV OUT] - [ON] – OK – X. (refer to page 98 of the camera handbook for these instructions)
3. Start playback on the analog video unit (VCR).
4. The video image should appear on the mini screen in the program you have selected for capture (i.e., Windows Movie Maker).
5. Proceed with the project and frames you wish to capture form the analog video.

B. Guidelines for PC's:

Capture, Compression, and Transfer: It is a bit complicated to explain how to use a Windows computer for video creation, because there are many different video cards, methods of transfer and adapters available for PC computers, each with its own unique instructions. Combine this with the different types of PC computers and video cameras, and you can see why our advice is always to read the instructions carefully.

First of all, you need to determine what types of ports you have on your computer and if your computer has a video capture (import) card installed (not just a video card that allows you to display video on your computer). Find out if there is proprietary software that came with the card or third party software that works with the card. If you don not have an option for video capture, you'll need to purchase a card and/or adapter to allow you to transfer video into your computer.

There are a number of providers of video capture and video editing systems and products for Windows-based computers. For example, Dazzle Multimedia offers solutions for both capture and editing, including a hardware adapter that connects to a VCR or video camera and then to a computer through the USB or parallel port. The Dell Dimension XPS computer with Dell's Movie Studio includes the Dazzle adapter and allows users to use digital video camera and analog camera input along with video-editing software. The Sony VAIO RB41P computer includes iLink (FireWire) and home movie editing software.

Editing: Once your video has been transferred and is ready in your computer, you can begin the editing process using video-editing software. Companies such as Adobe, Avid and Dazzle provide software that gives you the tools to create those perfect movies for CDs, presentations, email, VCRs, and web sites.

C. Guidelines for a Macintosh System:

DV Macintosh:

Transfer: With an iMac DV or G4 Power Macintosh with DV computer, video from a digital video camera can be transferred with a click of the mouse. Because most digital video cameras come with FireWire ports, transferring video from these cameras is as easy as connecting the FireWire cable to Mac DV computers. If you do not have a digital video camera, your video will need to be changed into digital file format first (see below).

Editing: Apple's iMovie 2, shipped with each DV-ready Mac, is all you will probably need to create near-professional quality videos. For professional editing, look into Final Cut Pro, also available from Apple.

Creating movies with DV Mac computers is so easy that very young students can master it. No longer do you need costly equipment or Hollywood production teams to create movies. The process of producing good video has been simplified and is now a valuable and affordable tool for homes and schools.

Other Macintosh Computers:

Capture, Compression, Transfer: If you have a digital video camera and don not have FireWire in your Macintosh computer, you can add a third party capture card to help you with capture, compression and transfer of digital video files. If you have an analog video camera, you will commonly connect it to your computer through RCA ports. You can then transfer the video by opening Apple Video Player or Adobe Premiere.

Editing: For computers that did not come with iMovie software, check the Apple Web site to see if iMovie will run on your computer. Later model Power Macintosh computers with up-to-date operating systems can also use iMovie software. If your computer is not able to use iMovie for editing, video-editing software is also available from Adobe, Avid, Dazzle, etc.

Sharing: Once completed, you can save your Desktop Movie as a QuickTime file which can be shared on your network or the Internet or distributed on a CD-ROM. **Note:** QuickTime movies created on a Mac can be easily used in presentations and other applications on Windows systems.

V. 10 Easy Steps to Creating Desktop Movies with iMovie:

1. Create your video with a digital video camera that has a FireWire port.
2. Connect the FireWire cable between the FireWire ports on the camera and the iMac. iMovie software will then be in its camera mode.
3. Use iMovie software on-screen buttons for remote camera control for capturing, recording, playing, rewinding, fast-forwarding and pausing.
4. Preview your movie from the camcorder on the computer screen.
5. Trim unwanted footage.
6. Arrange your video clips in the sequence you want, using drag and drop, copy, cut and paste editing.
7. Restore video clips to their original form if you don't like your editing.
8. Keep in mind that you can paste stills, graphics and other video clips over existing video while keeping the underlying audio unchanged.
9. Add cool effects like dissolves, fades and other professional-looking transitions between scenes.
10. Use iMovie's export feature to share your movie on videotape, Web site, on a CD, through email, or in a presentation.

VI. Saving, Viewing, & Uploading Video:

Saving: Once you have shot and edited you video down to the assigned 2 minute parameter it is time to save the footage. **You must save the footage in an email or webmail format!** There are two reasons for this (1) media files take up loads of space on

your computer and ours, and (2) if the footage is not saved in this manner we will not be able to view it and we will have no way to assess your assignment. Therefore, be sure to follow the following steps:

1. Do not upload movie clips that are longer than 3 minutes.
2. When exporting (saving) your movie clip, save them in an e-mail or web mail format (There are several different options to save the video on the software you are using – look for e-mail or web mail). You will loose a little clarity in the movie clip but the outcome will be a compressed video that is easier to load on the Blackboard site. Be sure to preview your saved clip before and after uploading to make sure it can be seen. Depending on the size of the file, it may take a few minutes to upload for viewing.

Uploading: Once the video is shot, edited, and saved it is time to submit. This is where all of the hard work pays off. There are three possible scenarios for submitting your saved work; these are outlined below:

1. Submit to the Discussion Board – Once the appropriate Discussion Board is located, follow the normal procedures to post a response. An "Attachment" link will be available. Browse to find your file and upload it. All class members will be able to view the file/video.
2. Submit to Group Page Discussion Board – Follow instructions for the Discussion Board as they are the same. Only the members in the group will be able to view the file.
3. Submit as an email attachment – Follow the same procedures as you would for sending any email message with an attachment using your email software program. Only the person(s) you sent the email to will be able to view the video.
4. Submit as an Assignment that the instructor has created within the weekly assignment page. Specific directions for submitting will guide you through the process. Only the instructor will have access to this file/video.

Viewing: Depending on what tool has been used to create the video, you may have to download one or more of the following to view your colleague's movie:

1. Microsoft Windows Media Player (free download) - PC
   http://www.microsoft.com/windows/windowsmedia/default.aspx

2. QuickTime (free download) – Mac or PC
   http://www.apple.com/quicktime/download/win.html

If you have trouble saving, uploading or viewing movie clips, please don't panic, just post the problem to *Course Questions* on the *Discussion Board*. It is helpful if you give us as many details as possible regarding the problem. For example: the computer platform on which you are working - PC or Mac, the software program in which you are working, the computer error that pops up, the way in which the screen looks or sounds. Our office of distance learning is working with us on these problems because we are the first group to actually use video in our classes. Your help continues to make our program stronger. You might also find answers in the *Frequently Asked Questions* section below or through this linked presentation.

VII. Frequently Asked Questions Section:

This section will offer a variety of responses to some questions you may still have regarding the information already presented. If you have additional questions please feel free to pass them along to the instructors and we will do our best to answer them and incorporate them into this document.

What is "digital video"? Is it the same as "DV"?

"Digital" means that the information is stored in a binary format, as a coded series of 1's and 0's. Thus, digital video refers to video stored in a binary format. Digital video systems can be used to transfer video from an analog videotape into digital format, make edits (like cuts, transitions, and special effects) output digital video files back to videotape, and compress digital video files for the Web, DVD, or CD. "DV" is a specific format of digital video. DV is the standard for video editing programs and most digital video cameras.

What kind of equipment is needed to capture video on a computer?

Capturing (or digitizing) video from a videotape or camcorder requires certain hardware. The type of hardware depends on what type of video the information is coming from. It is easier to capture video from a DV video camera than to capture video from VHS, Hi8, SVHS, Laserdisc, or other video sources. This is because the video stored in a DV camera is already in digital format and has a built-in computer interface. The video stored in the other formats is analog and does not have a built-in computer interface.

All Apple Macintosh computers built since 1998 and many newer PCs come with the hardware necessary to capture video from a DV camera. Capturing from sources other than a DV camera requires purchase of a D/A (digital/analog) media converter or purchase and installation of a video capture card.

When using a video capture card, the quality of video you can capture depends on the specifications of the capture card, the speed of the computer, and the speed of the disk drive.

Importing DV from a DV video camera, media converter, or other DV device requires the use of FireWire (IEEE 1394) cables. FireWire, invented by Apple, is one of the fastest peripheral connection methods ever developed. FireWire also often allows the user to control the playback device (such as a DV video camera) directly from the computer.

What kind of software is needed to edit video on a computer?

Today, a variety of digital video editing software is available for both PCs and Mac. Since most video software was developed on a Macintosh platform, digital video editing is primarily done on Macintosh.

Apple's iMovie is perhaps the simplest and most straightforward capturing and editing program for beginners. Apple's Final Cut Express and Final Cut Pro are much more advanced editing tools, designed for video professionals.

For beginners and for the purposes of the FSU requirements, Pinnacle's Studio 10.5 or Microsoft's Windows Movie Maker are as close to iMovie as is possible on the Windows Platform. Adobe Premiere is another popular professional editing program used that has recently transitioned from the Mac to the PC.

What kind of equipment is needed to play back video on a computer?

Any Windows or Macintosh computer should be capable of playing video on the screen using programs like Quicktime, Real Player and Windows Media Player; no special adapter or hardware is required. However, faster computers with faster disk drives and more RAM will be able to play video back more smoothly.

What kind of equipment is needed to output computer files to videotape?

"Printing" or exporting to tape involves taking files stored on a computer and making an analog video tape of their contents. This requires some type of converter, like a Sony Media Converter or the Dazzle Hollywood-Bridge, to take the digital signal from the computer and convert it to an analog signal that the VCR can understand.

What types of computer files can be incorporated into video?

Video editing programs like Adobe Premiere, iMovie, and Final Cut Pro allow users to import most types of image files (TIFF, GIF, PICT, JPG) and incorporate them into video projects. With video editing software, the user can easily control the duration, motion, and size of the image on the screen. Image files as video clips are also capable of the same transitions and filters as any other video file.

Presentation files, like those from Microsoft PowerPoint, must first be saved as sets of individual images before they can be imported into a video editing program.

Many types of audio files can also be added to video projects as soundtracks.

What changes can be made to digital video files?

Since the computer has control over each pixel of each frame of every video clip, digital video allows for a wide range of special effects. These include adding titles (text), adjusting brightness and contrast, compositing (combining multiple images), and performing 2D and 3D digital video effects (DVEs).

What are "digital cameras," "digital video cameras," and "DV cameras"?

"Digital camera" usually refers to a digital still camera; these are similar to 35mm snapshot cameras, except that they contain no film. Some digital still cameras allow you to capture short (under 30 second) clips of audio as well, and some can be connected to televisions in order to preview the pictures in the camera.

A "digital video camera" is similar to a regular camcorder or video camera, except that it stores the recorded video in a digital (as opposed to analog) format. This results in video which can be duplicated many times or copied directly into a computer without any additional loss of image quality.

A "DV camera" is a specific type of digital video camera that shoots in the "DV" format. This is the same format that editing software uses, therefore video on a DV cassette doesn't lose any quality when captured directly to these programs.

Most popular consumer DV video cameras use Mini DV tapes. Mini DV tapes capture the same fine-quality video as their larger industrial counterparts and are relatively inexpensive.