Technical Recommendations for Video Tutorial Productions

Hardware:

The following equipment is recommended for shooting video tutorials.

1. Canon (or other "prosumer"-level) HD video camera with XLR inputs: cameras that shoot in 720p or 1080p are preferable. While consumer-level handicams can be used, they do not have XLR inputs and offer fewer options for recording sound.
2. Tripod and swivel head: these are necessary for shooting.
3. Rode NT Studio Condenser Microphone with RM5 stand-mount or a similar quality mic is recommended for recording live audio. Ideally, a "shotgun" mic would be used, but is not absolutely necessary for these purposes.
4. Sennheiser MD21 U Omni Microphone or Shure SM58 Vocal Microphone (or similar quality mics) are recommended for recording voiceover.
5. Microphone stand: for use when recording live audio.
6. XLR cables: for connecting microphones to the video camera.

Software:

The following programs are recommended for creating video tutorials.

1. Camtasia Studio 7 or 8: this program is used for creating and editing screencasts. It enables the user to highlight, zoom and pan, and shade areas of interest. Additionally, it can be used to create .SRT files from captions created in the program.
2. Audacity: this is an open-source audio editing program that can be used to edit any voiceover used in the tutorial.
3. GIMP: this is an open-source image editing program that is good for creating insert shots and title backgrounds in the proper resolution.
4. Final Cut Pro or Adobe Premiere Pro: these are both high-end video editing programs with the ability to read .MXF video files (the files produced when using Canon HD video cameras). Either program can be used to integrate live video with screencasts, as well as to create transitions, video effects, and title sequences. They can also be used for converting video files to other file formats and resolutions.

Pre-production Tips:

1. Be explicit in the script regarding how the scenes are to be shot, noting camera position and shot type. Storyboards can be helpful and time-saving, but are not absolutely necessary if your script is explicit enough.
2. Where possible in the script, make note of transitions and effects to be added in post-production. This will make editing the video a much smoother and quicker process.
3. Pick your locations carefully, checking them beforehand to make sure they will suit your needs. Avoid locations that will produce an echo when recording audio, or those that will capture loud background noise. It's also important to choose locations with sufficient lighting and room for the camera.

Production Tips:

1. Be certain you're shooting in HD! Many cameras have the ability to shoot in either standard definition or high definition. It is important to shoot in the highest possible resolution. If need be, this can always be down-converted to a lower resolution.
2. Before shooting, make sure you white balance! Use a piece of blank white paper to adjust the camera's white balance. This will ensure that your color is (relatively) consistent and will cut down on the need for color correcting in post-production.
3. Record audio directly into the camera. The easiest and most efficient way to record your audio is directly into the camera using the XLR cables. When doing voiceover, simply keep the lens cap on so that the screen will be black and you will be able to distinguish your voiceover-only audio from other video clips. This is also why it is important to use the "prosumer"-level HD cameras as they have the appropriate XLR inputs, which consumer-level handicams do not.
4. Use a mic stand to position your microphone as closely to the subject as possible, while remaining out of frame. The closer the microphone is to the subject, the better your sound will be.
5. Record the room: i.e., record the natural noise of the room with no one speaking. This will help prevent obvious cuts created when silence is needed during audio editing.
6. Have your host record the entire script when you do the voiceover recording. This could be useful audio later on if you need to dub the live sound or if you choose to edit out a live sequence and insert a new sequence overdubbed with the same audio.

Post-production Tips:

General Tips:

1. Give yourself time! Editing and rendering a video tutorial is a lengthy and multi-step process. You will need plenty of time in order to watch all of your clips, edit, render, and upload to YouTube.
2. Be organized! It's important to keep your files organized so you don't overlook any clips when editing your video tutorial. Place the raw footage in a folder labeled "Raw Footage" and your audio in a separate folder labeled "Audio."
3. If you shot your video in 1080p it may need to be converted to 720p in order to be consistent with your Camtasia screencasts. Watch all of the raw footage clips and select the ones you wish to use in the video. Then convert each clip separately to 720p, giving it a title that denotes the scene being shot. Converting to WMV is recommended since it is a file format supported by Camtasia. It's important to make the clip titles obvious to avoid confusion when editing. Next, place all of the converted footage into a folder labeled "Clip Bin" or something similar.

Audio Tips:

4. Add room noise when editing audio. When editing your voiceover, simply lay a track of your recorded room noise underneath it in order to mask the cuts being made. This track should match the room noise already present in your unedited audio as long as both were recorded in the same room. Note that artificial noise will not sound quite right for these purposes.
5. Should you need to dub a live scene with your voiceover audio, you can do so by importing both the live audio and the voiceover audio into Audacity. Then simply try to match up the two waveforms as closely as possible. If this doesn't work, you may have to re-shoot or, at the very least, re-record the audio with the help of video to ensure the same pace.

Screencasting Tips:

6. When recording your screencast, it's helpful to listen to your edited audio in order to keep the actions at relatively the same pace. Try to keep the pace slow, however, to allow for zooms, pans, and highlights.
7. Once you finish recording your screencast, set the Editing Dimensions to 1280 x 720. This will keep the resolution consistent with your live video.

8. Avoid video transitions (such as fades) in Camtasia as you may not be able to edit the length of the transition in some other programs. Such effects can be added later in Final Cut or Adobe Premiere.

9. When exporting video in Camtasia you will need to edit the production settings. Select "Produce and share" and then "Add/Edit preset." Here, select the HD preset and then "Edit." When the HD preset is brought up, click on "Next" and then select "Flash options." On this screen, you'll want to set the quality to 100% (it should currently be at 50%). This will ensure that your exported video has the highest quality possible and will also prevent your screen capture from appearing blurry.

Video Editing Tips:

10. Label your video editing projects with the date! Including the date in the project title will help you keep track of the version you are working on (for example, "Finding Recordings v.1 3-23"). With each revision, be sure to rename the project with a new version number and date.

11. Aim for consistent color with all of your live shots, so that scenes do not vary much from one to the next. Color correction can be done using your video editing software and is relatively easy. The work will be minimal if you properly white balanced the camera for shooting. However, most of your live shots will require, at the very least, changes to the brightness and contrast.

12. When you have finished editing your final version of the video tutorial, export the file in WMV format. (Camtasia, which you will use to create captions, supports this file format.) Additionally, be sure the frame rate used when exporting is "Same as source." This is because the high definition screen captures are created at 15 frames per second, while the video will be anywhere from 24-30 frames per second.

Creating Captions:

13. To create your caption file, import the edited video into Camtasia. Under the Captions option, select "Speech-to-text." The program will transcribe your audio into synced captions. However, it is likely these captions will not match up exactly with your script. So, using the script, edit the captions so they are consistent with what is actually being said. Then simply select "Export captions" to create an .SRT file. Once you've uploaded your video to YouTube, this .SRT file can be uploaded separately, giving the video optional captions.