GETTING STARTED WITH THE SONY EA50
(Quick Reference Guide)

Getting Started

• ALWAYS BRING YOUR OWN HEADPHONES to every shoot!
• Make sure your batteries are fully charged. Battery snaps into back of camera; to remove battery hit battery release button near the base of the handle.
• Always start by calibrating your LCD display for the current lighting conditions.
• Many cinematographers prefer to shoot using the viewfinder rather than the flip-out screen; Especially if you are shooting outdoors in bright sunlight, the snap-on viewfinder reduces glare; also, many documentary filmmakers shooting in uncontrolled situations find the flip-out screen problematic because the subject / bystanders can get distracted trying to look at what you’re shooting (on the other hand, if you’re shooting yourself, the flip screen can be very handy). Your camera kit includes a clip-on viewfinder attachment - to use the viewfinder, clip it onto the LCD screen using the built-in clips.
• For handheld / documentary shooting, the built-in shoulder mount provides excellent ergonomics, allowing you to balance the camera on your shoulder for even weight distribution and steady shooting. Release the shoulder mount by pulling the tab underneath the camera.
• Make sure date and time are set correctly when you power on (this is useful metadata that is written to your clips as you record.
• If you’re using the viewfinder, make sure the diopter ring is set correctly for your eyesight; if you wear glasses and prefer shooting without glasses, try calibrating the diopter for your vision (use slider on viewfinder)
• Format your memory card before starting to record – make sure footage from previous user is cleared off. A 32GB card will hold around two hours of footage. To format: MENU > OTHERS > MEDIA FORMAT > MEMORY CARD > OK
• Always shoot in manual for professional-quality recording: put IRIS, EXPOSURE (buttons on side of camera), and ZOOM (bottom of camera, under the lens) into manual mode before you start shooting.
• Always check your recording format before each shoot to make sure camera is in the right mode. Your editing system can handle a range of formats, but it is important to make sure that you are shooting consistently in whatever format you choose for your project (rather than mixing formats in FCP, which requires rendering and is hypothetically problematic if you leave FCP for color correction or layoff). A GOOD GENERAL FORMAT IS 1080 / 24P FX (1920 * 1080
resolution, 24 fps progressive, 24 Mbps). To check or change your recording format: MENU > REC / OUT SET > REC SET > REC FORMAT.

- If you anticipate a very long shoot with more hours of footage than can be stored on the cards provided by checkout, you may consider purchasing additional SDHC cards. If you use your own cards, make sure to take it out of the camera before returning it to the checkout lab.
- When shooting HD, carefully control your highlights to prevent clipping / blowing out. Use a light meter, as well as the camera exposure tools (Marker and zebra stripes) to make sure your exposure is not too hot; when in doubt, err on the side of underexposing.
- Make sure auto-manual master switch on camera side is always set to manual!
- Use LAST SCENE button to quickly check your shooting without switching into playback mode.

CAMERA FEATURES AND OPERATION

White Balance

Always do a MANUAL white balance before starting a shoot; adjust as needed during shooting if lighting conditions change:

a) Set White Balance Switch to position A or B (not Preset)
b) Hold up a piece of white paper and fill the viewfinder with white
c) Press and hold the one-push white balance button (next to the A/B / Preset switch) until the white balance color temp is set.
d) For a shoot with variable lighting conditions, you may want to create an A and B setting in advance so that you can easily toggle back and forth.
e) To quickly set white balance in a rush, you can use preset button (set to indoor or outdoor in MENU > CAMERA SET > WB PRESET

Focusing

- Autofocus is NOT recommended for professional shooting situations. Keep in mind that AF is much less responsive at slower frame rates and doesn’t perform well in low light.
- PEAKING – creates slight edge enhancement highlight in viewfinder on objects in focus; useful for confirming focus visually
- Expanded Focus button – on top of hand grip; creates a pixel-for-pixel magnified extraction view in viewfinder; another useful visual confirmation of focus
- General Procedure to focus camera:
  a) Zoom in on subject to 99%
  b) Open iris up to narrow DOF
c) Put on ND filter if image is too bright with open iris  
d) Press expanded focus button to dial in on subject  
e) Turn focus ring  
f) Use push auto focus to confirm focus in a rushed situation (works better in good lighting)

Zooming
• Camera includes optical / power zoom (on lens) and digital zoom (switch on handgrip; not recommended).

EXPOSURE / EXPOSURE TOOLS

Iris Dial
• Always use manual exposure mode (hit iris button to switch modes - if you see an “A” next to the f-stop number, you’re in auto-iris mode).  
• Aperture readout is on LCD. Use ring next to iris button to dial up or down f-stop range  
• Max aperture depends on where you are in zoom range: zoomed in at 100%, max=6.3, at widest angle, max=3.5…. So stay wide for low-light shooting!  
• Push auto iris can be useful to confirm or get ballpark exposure reading (like push focus).  
• Iris readout numbers are sequences in 1/3 stops (i.e. 5.6 / 6.3 / 7.1/ 8 etc)

ND Filter (use for bright light or shallower DOF)
• There is no built-in ND filter in this camera! Your kit comes packed with a screw-on ND filter that you will need to attach for bright shooting conditions.  
• The included filter is an adjustable, variable density filter. It cuts from 1.5 to 9 stops . Turn the outer ring on the filter from MIN to MAX to increase how much light is cut.

Gain
• Calculates amount of electronic gain that you add; brightens image electronically  
• GAIN ADDS NOISE to picture; you’ve probably heard the general recommendation to use it sparingly, but because this camera doesn’t have a very fast lens, you will probably need to use some gain for indoors /low light shooting (and it doesn’t look so terrible with this camera).
• Keep Gain in MANUAL mode (push GAIN / ISO button until “A” disappears in viewfinder) - do not ever shoot with auto gain!
• Camera switch under gain button has Low, Medium, and High gain modes. Gain values can be customized in MENU > CAMERA SET > GAIN SET

Shutter Speed
• Changing the shutter speed can also change the brightness (slower speed = brighter... but motion will look blurrier at slower shutter speeds). Press shutter speed button and use menu dials to dial speed up or down.

Gamma and Knee Settings (in picture profile menu)
Change response curve to highlight / shadow areas, affects general dynamic range

Zebra Stripes (highlights areas that are overexposed)
• MENU > DISPLAY SET > ZEBRA > LEVEL
• The zebra stripes are an exposure control tool that places white diagonal zebra stripes on the LCD display to mark all areas of the image where brightness has exceeded a certain IRE threshold. These IRE values can be customized.
• Zebra 1 default setting is 70. This is more or less the target brightness value for Caucasian skin.
• 100 IRE should be your target maximum brightness. 100 IRE is the Broadcast safe Max. Video for broadcast that will be color corrected can exceed this range so long as levels are brought down in post. You can switch your Zebra level to 100 to make sure nothing is triggered at that setting.
• When setting exposure, you can use several Zebra levels to get a more precise sense of the exposure range in the scene. For example, if you are shooting a Caucasian face, you should be aiming for around 70 IRE in the skin tones/face. Start with your zebra set to 100 IRE to make sure skin tone is well exposed – none of the facial highlights should be triggering the 100 IRE zebra. Then dial down to 70 IRE to check the highlights – you should now see zebras on the face’s hotspots (tip of the nose, forehead, etc).
Audio:
- ALWAYS USE HEADPHONES! Headphone jack is in the handle.
- ALWAYS USE AN EXTERNAL MIC, mounted in a shockmount if possible. The shockmount screws into the hotshoe mount on top of the camera. If you’re only using one mono external mic, you may want to use the internal mic on the second audio channel for a backup track.

Audio Select Switches:

a) Camera can record sound from onboard stereo mic (2 channels), or from external XLR mics through side XLR jacks (Input 1 and Input 2)

b) Make sure to set all switches correctly - when shooting with your external shotgun mic, radio mic, or other external mic, make sure the input switch is on INPUT 1/2 (not internal mic).

c) Turn on Mic Power 48V phantom power switches if using condenser mics that do not have their own power source; turn off if using dynamic microphones (the latter is more likely – condenser mics are higher quality but delicate and not usually used for rugged location shooting). The provided shotgun mic has a battery and does not need phantom power.

d) If using external XLR mics, make sure mic inputs are switched to mic (NOT line; line is for mixer feed)

e) Use audio levels meter display in LCD to monitor audio levels; top of the scale turns red when levels are peaking. Ideally you should aim to keep normal dialog between –20 and –12dB. Use the STATUS CHECK button on the bottom of the camera to get more detailed info about audio levels.

PICTURE PROFILE

• Setting up customized picture profiles allows you to optimize camera for the shooting situation at hand and also allows you to develop customized in-camera “looks” for your footage.

• For most shooting (especially nonfiction), I suggest trying to get the most natural-looking footage possible. This means there is no need to do anything very drastic with your picture profile (and no need to explore it in too much detail in class). Almost any of these in-camera color and picture effects can be accomplished in post with much more flexibility (and the ability to undo!).

A few things to explore in picture profile menu:

• KNEE - Knee is like a limiter for gamma; it prevents overexposure by rolling off
the intensity of the brightest part of the picture:

a) **AUTO KNEE** – camera may change knee mid-shot – this isn’t really generally desirable – it may cause highlights to flicker

b) **KNEE POINT** – Allows you select point where curve starts attenuating. gives protection against blowing out highlights; 80 is low (max dynamic range, but can make whites look too grey), 90 is mid setting, 100 is high setting (looks more natural than 80 but offers less protection); default is 90 IRE

• **GAMMA CURVES** – camera has 5 different gamma curve settings; the gamma curve determines the contrast curve of the camera, i.e. how quickly it responds to light.

• **Detail**
  a) Affects overall sharpness of image; higher setting adds edge enhancement and contrast to increase perception of sharp detail. Can also appear to add texture to image.
  b) Higher settings also accentuate noise in image
  c) Lower level can clean up noise, but can also look soft; low levels are optimal if you are planning to blow up to film
  d) 0 - +5 is safe range for general use

• **BLACK LEVEL**
  a) Contrast control; controls video black level
  b) Lower setting = deeper, richer black
  c) Higher setting = more washed out, milky black
  d) Be cautious about setting pedestal too low; you risk crushing blacks and losing image detail in shadows. Crushed blacks can make a nice, sharp, snappy image, but this is the sort of thing you can also do in post when you color correct – so it’s better to preserve as much detail as possible at the shooting stage.

**IN CAMERA PLAYBACK**

• Press “Visual Index” button (under handle) to enter playback mode

**OFFLOADING FOOTAGE**

• Always offload your footage after shooting. You are responsible for making sure your media is safely stored and backed up. All media is wiped out when the camera goes back to checkout /to another user.
• Remove the card from the camera and use an SD card reader connected to your computer (or insert the card directly into your computer if you are using a laptop with a built-in card slot)

• Review detailed Slugfilm workflow tutorial (http://slugfilm.ucsc.edu/production_support/?page_id=4695) for detailed step-by-step process.

• ALWAYS BACK UP YOUR FOOTAGE RIGHT AWAY! You should always have more than one copy of your media folder.