Today: Photoshop/Gimp intro
Spatial and temporal resolution

Add How to pad sides of portrait orientation

Tasteoforthodoxy.com
Jay road, east 1 mile

Get Wet: Post in D2L dropbox AND in Wordpress

Buy Photoshop bundled with other Adobe apps

Adobe Creative Cloud subscription: $228 annually
http://www.colorado.edu/oit/creative-cloud-faq

Our VIP subscription rates are roughly $19 per month for a named-user license and $14 per month for a device license. For users who need only a single program, e.g., Photoshop or InDesign, a "single-app" license is available at about half the rate for the complete suite.
19*12=228
228/2=114
From <http://www.colorado.edu/oit/creative-cloud-faq>

Other options: previous versions of PS on eBay etc., but can't open new camera RAW files.
Photoshop Elements: < $100, probably adequate for this class.
Adobe Lightroom: not as powerful as PS, is designed for professional photography workflow, making same changes to many images at once.
Gimp: Online, open source image processing software.

Most image processing software will be adequate for this course: crop, brightness, intensity, spotting

Other Resources

Rent macro lenses and other equipment: Pro Photo Rental on Arapaho
http://prophotorental.com/
Canon, Nikon, Olympus bodies and lenses. Also used equipment for sale.

Pro Photo Rental, Inc.
1644 Conestoga St, Suite 5
Boulder, CO 80301

From <http://prophotorental.com/contact.asp>

New firmware for your Canon; allows much more control
http://chdk.wikia.com/wiki/CHDK   open source
Canon Hack Development Kit
Mostly non-DSLRs
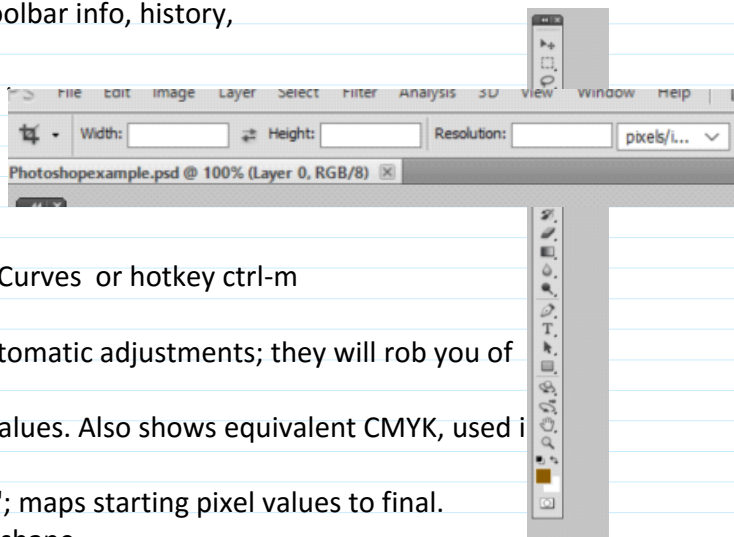
http://www.magiclantern.fm/about.html   also open source
"Magic Lantern is a software enhancement that offers increased functionality to the excellent Canon DSLR cameras. We have created an open framework, licensed under GPL, for developing extensions to the official firmware." built in intervalometer. Motion detection trigger, HDR

Topics in PS/gimp that we'll cover today:

1. Desktop nav
2. Contrast
3. Color channels
4. Crop tool
5. Clone stamp
6. Filters
7. File formats

1. Desktop nav: menus, tools, toolbar info, history,

2. Contrast

Increase contrast in PS:
   Use Image>Adjustments>Curves or hotkey ctrl-m
Gimp: Colors menu > Curves
   It's all you need. Avoid automatic adjustments; they will rob you of
   skill.
   Look at info, shows RGB values. Also shows equivalent CMYK, used i
   hardcopy industry.
   Curve = 'transfer function'; maps starting pixel values to final.
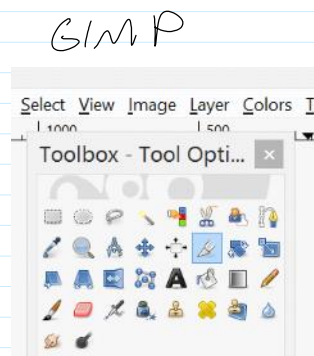   Increased contrast has 'S' shape.
   Avoid saturating highlights and shadows; try to retain information
   there by having a non-zero slope at bottom and top.

4. Crop tool:
    Make sure specs in toolbar are clear.
   Can rotate crop using cursor outside of crop area
   Choose 'Perspective' in toolbar to change a non-rectangular
   area into a rectangular one. Caution! Stretching part of an
   image can destroy geometry information.

5. Clone stamp
      Better than 'healing brush' for corrections, but healing brush
      really is good for fixing face blemishes.
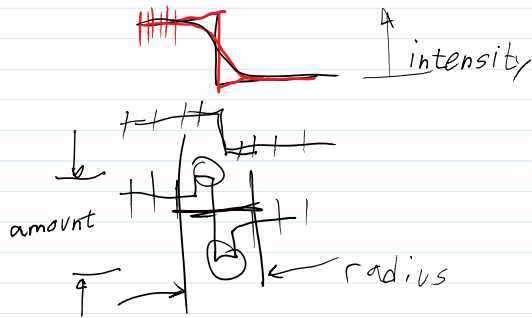   PS: select source with Alt click
      Gimp: select source with Ctrl click

   6. Filters

Can do wild stuff, but algorithms are unknown. When
making images for both scientific and artistic purposes,
avoid destroying information whenever possible. Try to
get desired effects with known transformations instead of
mysterious ones.

Sharpen: amplifies difference between adjacent pixels. Old
painting technique; edges outlined by black on one side,
white on the other. Use Unsharp Mask.

Good tutorial: http://psd.fanextra.com/tutorials/photoshop-sharpen/

7. File Formats

PS: Save As
Gimp: Export

OK to send final images in these formats
Native PS format: psd
Native Gimp : xcf

Do NOT send FINAL images as JPG!

Information is **lost** when saving in jpeg
http://cscie12.dce.harvard.edu/lecture_notes/2011/20110309/slide42.html

Non-Lossy image file formats. These are acceptable for edited images submitted in class.
TIF, PNG,PSD,xcf

Most PHD cameras store images as jpg. Open in PS, then edit and store as PSD,
Photoshop's native format or .XCF, in Gimp

DON'T use *Photoshop* RAW. Metadata is lost; images can't be opened.
Camera raw formats, like NEF, CR2 etc, are OK.

For uploading to Wordpress: save as jpg, max width 1300 px for landscape
image. For portrait orientation image, make into a landscape format: save as
1100 wide by 900 high, with extra space on sides in a dark neutral gray. Our
Wordpress theme, Impreza is 'responsive', resizes image for each device, but
makes portrait orientation images too large and low res when selected as
featured image for a post.