

## MIDTERM EXAM REVIEW – ART 245

- **The exam will be open book; you can also bring your camera.**
- **Bring a calculator, to multiply image dimensions measured in pixels**
- **Questions will be multiple choice, true false, short answer**

### 1. camera types

- film cameras and digital cameras
  - how resolution, image quality is defined
  - advantages of each
- CDC's (compacts) vs. SLR's (single lens reflex)
  - characteristics and advantages of each

### 2. camera care

- proper storage, environments to avoid, cold weather hazards

### 3. exposure controls: aperture and shutter speed

- 2 functions of lens aperture
- 2 functions of shutter speed
- slowest hand held shutter speeds – in range of 1/15 sec w/ image stabilization
- methods of controlling aperture and shutter speed on CDC's w/o manual control:
  - choice of ISO setting
  - choice of light conditions
- depth of field – it's relationship to distance from subject

### 4. non-CDC digital camera types – ultra compacts, superzoom, DSLR: characteristics of each

- ultra compacts:
  - very small, simple and easy to use,
  - few options, mediocre image quality
- super zooms
  - resemble DSLR's but smaller and don't have mirror system
  - large LCD screens like DSLR's
  - live preview and small image sensor like CDC's
  - zoom lens has very wide focal length range
- DSLR's (digital single lens reflex)

- no live preview on most models; viewing is through viewfinder
- mirror system allows you to see what image sensor sees
- interchangeable lenses
- have larger image sensor than any other digital camera type
- much less digital noise at high ISO's
- no shutter lag
- auto focus works well in very low light
- built in flash is more powerful

### **5. Built in flash**

- working range – distance from subject
- flash modes:
  - Auto, Red Eye Reduction, Forced flash, No Flash, Slow Sync
  - description and appropriate uses for each
- what causes red eye? lens and flash are parallel and close to each other

### **6. common automatic shooting modes:**

- macro: allows for close up focusing
- landscape: use small aperture for wider depth of field
- action or sports: uses fast shutter speed to freeze motion
- portrait: uses wide aperture to throw background out of focus
- night: uses slow enough shutter speed to capture background detail

### **7. Lenses**

- define focal point and focal length
- how normal focal length of a given camera is determined
- normal focal length for CDC: 12.5mm
- wide angle: less than 12.5; telephoto: more than 12.5
- how image characteristics change with focal length:
  - wide angle range: wider angle of view, objects in scene reduced in size
    - suitable subject matter
  - telephoto range: narrower angle of view, objects in scene magnified in size
    - suitable subject matter
  - normal range: image size same as normal human vision
- optical zoom vs. digital zoom
- image stabilization – reduces camera vibration to allow for shooting in lower light without camera shake

### **8. image resolution**

- calculating total pixel count from pixel dimensions
- minimum printing resolution for high quality prints: 200PPI
- calculating necessary image resolution for various purposes
- examples are as follows:
  - screen viewing: at screen resolution of 72PPI, resolution necessary to view 8x12 print at full size
  - small prints: necessary resolution for printing 5x7 print at 200PPI
  - large prints: resolution for printing 11x17" print at 200PPI

### **9. resampling an image file**

- downsampling: reduces the number of pixels in a given image file
  - purposes:
    - to reduce file size, which speeds up internet transmission (E mail,etc)
    - to speed up image processing in editing programs like Photoshop
    - to reduce storage space needed
- upsampling: increases the number of pixels in an image
  - new pixels are added through a process called interpolation
  - purpose is to increase image resolution, in order to make larger prints
  - only partially successful
- deselecting 'resample' in the Photoshop Image Size box
  - no pixels are added to, or subtracted from, an image file
  - they are only rearranged; only their density, (pixels per inch), is changed

### **10. Photoshop editing**

- best method for adjusting image brightness: using the Levels midtone slider
- best method for reducing image contrast: Shadow/Highlight adjustment
- best method for increasing contrast: using Levels, dragging highlight and shadow sliders toward the center
- technique for darkening or lightening only a portion of an image:
  - use Selection tools first, then use Levels
- image formats: JPEG, PSD
  - advantages of JPEG's
    - files can be opened on any computer
    - compresses the image file, thereby reducing storage space
  - advantages of PSD
    - image quality doesn't degrade with repeated opening of the file; JPEG's do
    - can work with Layers in Photoshop; JPEG's cannot

