CS 70.11A – Photoshop 1
Lesson 8 – Design Principles & Effective Cropping

This week we are covering Tutorial 8 and learning about design principles and cropping. We are distinguishing between the basic *design principles* that apply to any visual composition and *photographic design principles* that apply specifically to photographs.

1. **Design principles**

   Design principles are general guidelines for how to put together elements in a piece to make it visually interesting, aesthetic, or effective. These guidelines can be modified to accomplish the purpose of the designer. I investigated design principles online and it seems that almost everyone has their own way of looking at things 🙂. However, the concepts embodied by the various principles tend to fall into similar categories. In addition to the principles of proximity, alignment, repetition, and contrast (PARC) discussed in the textbook, other design principles include:

   - **Balance** – the concept of visual equilibrium. Like items on a scale, each item has a certain visual weight and these weights should balance. For example, vibrant color has more visual weight than muted color. Balance is further described below under photographic design principles.
   - **Proportion** - the relative size and scale of the various elements in a design. It adds interest when the elements are out of proportion. I would consider it a subset of the contrast principle.
   - **Rhythm** - can be described as timed movement through space; an easy, connected path that the eye follows through the composition. The presence of rhythm creates predictability and order.
   - **Emphasis** – it is also referred to as dominance or focal point. It marks the location(s) in a composition that most strongly draw the viewer's attention by providing some visual "surprises". It is also one of our photographic design principles.
   - **Unity** - the underlying principle that encompasses many of the principles and elements of design. It refers to the coherence of the whole, the sense that all of the parts are working together to achieve a common result; a harmony of all the parts.

   The above is derived from [Art, Design and Visual Thinking course at Cornell University](#)
   Read the first three web pages for some additional illustrations of basic design principles.

2. **Photographic design principles**

   I'd like to elaborate on the ten photographic design principles in the textbook:

   - **Framing** – it doesn't necessarily mean that there is something in the image that literally frames the content, such as looking out through an open door. It means that the

---

photograph has an interesting composition without distracting elements. Often there is a compelling person or object in the foreground.

- **Emphasis** – Note that it's all about a strong focal point. The viewer's eye should be immediately drawn to that item.
- **Angle of view** – the idea here is to show the item from a perspective that is *unusual* and therefore interesting.
- **Rule of thirds** – within the image, draw two evenly-spaced horizontal lines and two evenly-spaced vertical lines. The main item of interest, such as the center of someone's face, should be located at one of the four intersections or along one of those lines. Another application is for one or more major elements to take up a third of the image. For example, in an image with a horizon, two-thirds of the image should be sky if the clouds or sunset is more interesting and two-thirds of the image should be the ground if the landscape is more interesting. Also see http://en.wikipedia.org/wiki/Rule_of_thirds.
- **Close ups** – like A*ngle of view*, we want to show an item in a way that it is not normally seen. I find the examples in the textbook to be only marginally close up. A better example would be an ant taking up the full frame.
- **Balance** – the visual weight of items are balanced across the image like two people on a see-saw. The following can be used to achieve balance or visual weight:
  - Several small or light shapes to counterbalance a large or dark shape
  - Textures with darker values to counterbalance a lightly textured surfaces with lighter values
  - Shapes placed above eye level add more visual weight
  - Irregular shapes are usually heavier than more easily-recognized shapes
  - Lines placed close together. They will appear darker and can help counterbalance a dark solid mass.

  The above is from *A Design Manual*, Fourth Edition, by Shirl Brainard, Pearson, 2006, page 84
- **Contrast** – makes the photograph more interesting by including elements that are dramatically different in tone, color, size, lines, or texture. Similar to *Emphasis*, but does not create a focal point.
- **Line and shape** – the viewer's eye tends to follow lines and pause on recognizable shapes. Related to the *Emphasis* design principle.
- **Tone and sharpness** – lighter and sharper objects also draw the eye. Photographers use a narrow depth of field (wide lens aperture) so that only the object in the foreground is in focus. This effect can be easily duplicated in Photoshop.
- **Arrangement** – keep it simple and uncluttered.

3. **Other design tips**
- The "rule of odds" suggests that an odd number of subjects in an image is more interesting than an even number. For example in artwork, frame an object of interest with an even number of surrounding objects.
- The direction followed by the viewer's eye should lead the viewer's gaze around all elements in the work before leading out of the picture.

- If a subject is moving or facing out of the image, there should be space in front of it.

The above is from: http://en.wikipedia.org/wiki/Composition_(visual_arts)

4. **Cropping**

   Cropping is the process of removing or hiding a portion of an image. Although it may also be used to add canvas to the image by making the marquee larger than the original size, we are not going to use it for that purpose. Cropping is useful in order to:

   - create focus
   - improve the image composition by making it more visually interesting
   - remove unwanted items
   - reduce file size
   - fit it into a picture frame or a specific place on a web page or publication
   - straighten an image so that certain objects are horizontal or vertical

5. **Crop tool**

   - *Aspect Ratio Presets* **menu**

     This menu with the *Width, Height* and *Resolution* boxes to its right is the most difficult option of the Crop tool. This menu is useful if we want to resize to a particular aspect ratio or print size - e.g. for a 4" x 6" picture frame.

     Ratio is the top option in the menu and the default option. We are free to drag a marquee of any size and shape. However, if we specify values for *Width* and *Height,* then the marquee is constrained to that width-to-height ratio. *Resolution* is not showing.

     W x H x Resolution option also lets us drag a marquee of any size and shape. However, now if we add values for *Width* and *Height,* they specify a fixed size in inches (default) or pixels, not an aspect ratio. Be warned that if *Width* and *Height* are specified in inches and *Resolution* is given a value, then the image will be resampled. As we know, resampling degrades image quality.

     Aspect ratio section – these six options constrain the marquee to the specified width-to-height ratio.

     Fixed size section – the first three options specify a fixed size in inches and can resample. The next three options specify a fixed size in pixels.

     Crop preset section – lets us save presets so that they can be reused in the future.

   - *Delete Cropped Pixels* **check box**

     If *checked*, any pixels outside of the marquee are discarded.
     If *unchecked*, any pixels outside of the marquee are concealed but preserved. The cropped pixels can be made visible by moving the layer with the Move tool. If the image contained a Background layer, it is converted to a standard pixel layer. The file size is not reduced. The document must be saved as a PSD to preserve the "big data".

   - *Content-Aware* **check box**

     This feature uses content-aware technology that we will discuss more in Tutorial 12. When using the Crop tool to rotate, straighten, or expand an image beyond its canvas, empty spaces are often created. This amazing technology figures out what the missing pixels should be and fills them in.

6. **Comparison of the cropping and straightening methods**
   - The Crop tool can straighten the contents of an image by either manual rotation or by using the *Straighten* button to automatically straighten to a line drawn within the image.
   - The *Crop and Straighten Photos* command both crops and straightens automatically, but only to the edge of each image, not to its contents.

Online videos and other resources

As usual, there is a link to the Practical Photoshop video on our Schedule page. This video uses CS6 and the Crop tool changed considerably in Photoshop CC. The 33 minute video would be worthwhile to watch, but if you feel like you have a good grasp of the Crop tool, it would be okay to skip this one.

Since all of the other videos listed under Tutorial 8 are for Photoshop CS6, I don't recommend watching them.

Additional slideshow and videos

Photography Composition using the Elements and Principles of Art – a wonderful slideshow with some definitions and examples of design elements and principles.

Using the Elements and Principles of Design in Photography – from School District of Menomonee Falls, Wisconsin, another great slideshow with lots of examples

Compelling Photographs: The Elements and Principles of Design – a comprehensive set of photographic design principles with beautiful examples.

The Art of Photoshop Composition by Julieanne Kost - Scroll down and watch the *Compositional Considerations* video (6:15 minutes, closed captioned). If you are interested in learning more about the art of image compositing, then also watch the other three videos in the *Why Composite Images?* section.

Cropping and Composition – four videos by Chris Orwig on how to photograph and crop for better composition, uses Photoshop CC and Lightroom, closed captioned:

- Examples and ideas for creating better composition (7:57 minutes)
- Why cropping matters (4:23 minutes)
- Finding Pictures within Pictures (4:23 minutes)
- The Crop tool with the Delete Cropped Pixels option (3:51 minutes)