**DIGITAL IMAGE MAKING**
**Art 2123**
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Office Hours: M-W11:00 AM-2 PM
FR after 11:00AM by appointment only.
Lab Hours: 8:00 AM-7 PM

Final Test to be worth 100 points.

Test will cover: Shortcuts in Illustrator -Photoshop and InDesign
Terms covered in previous handouts such as.
EPS, TIFF. PSD etc. naming conventions.

Also the following will be covered.

Digital images are an arrangement of 1's and 0's which the computer translates into a "picture."
This is called BInary Code.

BPP=bits per pixel.

Most color images from digital cameras have 8-bits per channel and so they can use a total of eight 0's and 1's. This allows 256 different combinations—translating into 256 different intensity values for each primary color. So an RGB colored image has three channels of 256 values per channel. When all three primary colors are combined at each pixel, this allows for as many as $2^{(8*3)}$ or 16,777,216 different colors, or "true color."

Some scanners can scan as high as 32 bpp.

The human eye can only discern about 10 million different colors, so saving an image in any more than 24 bpp is excessive if the only intended purpose is for viewing. Photoshop allows 24 bit images to be processed to adjust the color but no filter can be applied to it because it requires an infinite amount of processing power that the application is unable to handle. On the other hand, images with more than 24 bpp are still quite useful since they hold up better under post-processing.

Color can only exist when three components are present: a viewer, an object, and light. Although pure white light is perceived as colorless, it actually contains all colors in the visible spectrum. When white light hits an object, it selectively blocks some colors and reflects others; only the reflected colors contribute to the viewer's perception of color.

Though black may not be considered a color in the art world, it definitely is a color in the print wold. Know the distinction

Additive v subtractive Color

Virtually all our visible colors can be produced by utilizing some combination of the three primary colors, either by additive or subtractive processes. Additive processes create color by adding light to a dark background, whereas subtractive processes use pigments or dyes to selectively block white light. A proper understanding of each of these processes creates the basis for understanding color reproduction.

**Additive** **Subtractive**

The color in the three outer circles are termed primary colors, and are different in each of the above diagrams. Devices which use these primary colors can produce the maximum range of color. Monitors release light to produce additive colors, whereas printers use pigments or dyes to absorb light and create subtractive colors. This is why nearly all monitors use a combination of red, green and blue (RGB) pixels, whereas most color printers use at least cyan, magenta and yellow (CMY) inks. Many printers also include black ink in addition to cyan, magenta and yellow (CMYK) because CMY alone cannot produce deep enough shadows.

| Additive Color Mixing | | | | Subtractive Color Mixing | | |
|---|---|---|---|---|---|---|
| Red + Green | | Yellow | | Cyan + Magenta | | Blue |
| Green + Blue | | Cyan | | Magenta + Yellow | | Red |
| Blue + Red | | Magenta | | Yellow + Cyan | | Green |
| Red + Green + Blue | | | | Cyan + Magenta + Yellow | | **Black** |

Subtractive processes are more susceptible to changes in ambient light because they rely on this light to produce their colors. Printed colors often require a specific type of lighting in order to accurately reproduce the color shown.

Metamerism: The quality of some colors that causes them to appear differently under different light sources. For example, two color samples might appear the same in natural light, but not in artificial light. Flourescent light is cooler (more blue) in most cases than in incandescent light (more warm). Printed as well as ambient color can shift under different conditions and different light sources.