

# Mini-Course in Color

## Introduction to Color

I took the Color course at Yale with Josef Albers and Sy Sillman. This course was the single most influential experience I had in graduate school. I understood the course objectives and it conditioned me to recognize visual values, not only in color, but also in other art and design courses. Color class met for three hours twice a week and there was an enormous amount of outside work expected.

What I appreciated most about Albers' approach to color was the lack of rigidity and his understanding of the relativity of color. The first thing he did in color class was to ask every student to go through the color pack, pick out red and lay it face down on the desk. After a few minutes, Albers asked the students to hold up red. The variation among students as to what they thought was red proved to be quite amazing. This provided a basis for Albers to address students about color relativity and how no two people see color exactly the same.

Albers worked with color paper because he wanted students to focus on color and not have to battle the problems of using a brush or mixing and applying paint at the same time. The colors were precise and

additional sheets of the same hue and intensity could be purchased through coded numbers on the back of each sheet.

Albers based his problems on simple principles that often had application far beyond consideration for color. For instance, *how much to how much* could apply to drawing, typography, painting or any other form of visual expression. Albers' problems forced students to make innumerable decisions, and he realized that eye sensitivity to color and learning resulted from having to make all these decisions. Albers clearly recognized the searching process itself to be more important to learning than the end results.

It has been interesting for me to compare notes with other graduates of Albers color classes who went on to teach color. Few of us adhered strictly to Albers, and we moved in different directions.

I never had a separate class in color. My teaching of color has been limited to taking one hour a week from Basic Design. To do this, I restricted myself to about four or five exercises, color interaction,



boundaries, visual mixture and how much to how much. We did the leaf exercises as part of free studies. The one hour was used to critique student work and present new problems. When problems were not satisfactorily done by a majority of students, we did them over and over until the problems were understood and results were reasonably consistent. All the work was done outside of class time. After the theoretical problems, students worked on free studies using the four principles.

For myself, I stressed color over shape, composition and sensitivity for amounts in the use of color. I found that near the end of the term when students had used all their *favorite* colors, they worked with what was left of their color pack which were colors they normally would not use. Some of the most interesting color studies came from this stage of the course. One of the true values of the Albers color course is that it forces students to use colors that under other circumstances they would not consider.

Most students coming into design education are not visually sensitive, and I found the color problems the best vehicle for students developing a discriminating eye for color choice and amount, composition and better understanding of what constitutes *visual sensitivity* which could then be transferred to other courses such as drawing, design, typography and photography. Sensitivity itself cannot be taught, but students can be made aware of it, and they can cultivate their intuitive capabilities. I think the color boundary and quantity problems are absolutely essential to the education of every Graphic Designer.

What is described here is not so much a color course as it is a series of problems to make students sensitive to color and composition, and to further develop eye skills. Graphic Design students require a much more comprehensive course in color.

It is important for students to know the major color systems, learn color terminology and to be introduced to the physics of light and color. Students require the experience of mixing color and learning to apply it with skill. Students should be aware of how various artists or designers have used color in the past. Another consideration that is rarely touched upon but it is pertinent today as design becomes increasingly international, and that is the relationship between color and culture. The symbolic associations with color change from culture to culture. What might be attractive to one culture might be symbolic of death or misfortune to another.

Someone told me that the basis for the color theories used by Albers came from the writings of Goethe on color. I believe that Knopf published an obscure small book on the color theories of Goethe sometime during the 1960s.

The teachings of Albers have been vastly misunderstood. His color and drawing courses represent to me some of the most effective instruction in terms of student understanding and learning that I have ever encountered. At most American schools today, Albers is identified with the Bauhaus, and is viewed as someone from the distant past who is totally irrelevant to art and design.

Most critics of Albers and the Bauhaus base their opinions on Bauhaus imagery which is now dated. The Bauhaus was about philosophy, objectives, pedagogy and social values and not a particular imagery. The underlying qualities of the Bauhaus are as relevant today as they were during the first decades of the twentieth century. If the Bauhaus were operating today, they would be working with all the new technologies and social conditions of the present, and the imagery would be quite different.

### Mini-Course in Color

The mini-color course is limited to taking one hour a week from basic design. The course is restricted to four or five exercises, color interaction, boundaries, visual mixture and how much to how much. The balance of the course is devoted to free studies and leaf studies. The one hour is used to critique student work, and to present new exercises. When the work is not satisfactory, it is repeated until a majority of students understand and overall class results are reasonably consistent. Color is stressed over shape, and composition should not compete with the color. Craft is an important consideration in evaluation of work. All work is expected to be done outside of class time.

Near the end of the term, students have expended all their *favorite* colors and they begin to work with what is left of the color pack. They then work with colors that normally they would not select, and some of the most interesting color studies come from this stage of the course. One of the greatest benefits of the color course is that it forces students to try colors that under other circumstances they would not consider. Most students coming into design education are not visually sensitive, and the color problems are an excellent vehicle for developing a discriminating eye for color choice, how much to how much, composition and a greater understanding of what constitutes *visual sensitivity*. This sensitivity usually transfers to other courses such as drawing, design, typography and photography. Sensitivity itself cannot be taught, but students can be made aware of it, and they can improve on their intuitive capabilities. Color boundary and quantity problems are absolutely essential to the education of every graphic designer.

What is described here is not so much a color course as it is a series of exercises to make students sensitive to color and composition, and to further develop eye skills. Graphic design students require a much more comprehensive course in color. It is important for students to know the major color systems, learn color terminology and to be introduced to the physics of light and color. Students require the experience of mixing color and learning to apply it with skill.

#### Basic terminology for the course includes the following:

- 1 Hue refers to one color; color refers to one or several hues; color and hue can be interchangeable, while chroma refers to all color including shades, tints and tones.
- 2 Intensity, saturation or brilliance are interchangeable terms. Refers to higher or lower in degrees of vividness. Diluted or undiluted color or pigmentation.
- 3 Shades are hue plus black.
- 4 Tints are hue plus white.
- 5 Tone is hue plus grays.
- 6 Analogous colors or those that are adjacent on the color wheel.
- 7 Chromatic refers to all hues, shades, tints and tones.
- 8 Achromatic refers to the entire spectrum of gray with white at one end and black at the other.
- 9 Chromatics have an achromatic equivalent called *value*.

Students should be aware of how various artists or designers have used color in the past. Another consideration that is rarely touched upon, but it is pertinent today as design becomes increasingly international, and that is the relationship between color and culture. The symbolic associations with color change from culture to culture.

The principles employed in the color course are borrowed from Josef Albers color classes at Yale University during the 1950s. The basis for the color theories used by Albers reportedly came from the writings of Goethe on color. I believe that Knopf published an obscure small book on the color theories of Goethe sometime during the 1960s.

#### Materials

- 1 Full color pack
- 2 Spray mount or rubber cement
- 3 Scissors and exacto knife
- 4 Two ply or heavier bristol board

#### Instructions

All color exercises and free-studies are done with cut or torn paper. All color work is done either with a mat or put onto a mat for presentation. The proportions of mat include the top, bottom, sides, and the size of the work to the mat, are part of the evaluation. Craft is critical.

The purpose for using cut and torn paper is that it allows students to work quickly, and to explore the effect of different colors, amounts and compositions with a minimum of effort and time. Students can focus on color without having to mix paints, wait

for them to dry or learn how to use a brush. It is the process of trying different colors, varying the amounts, etc. that is of most value to students and to learning.

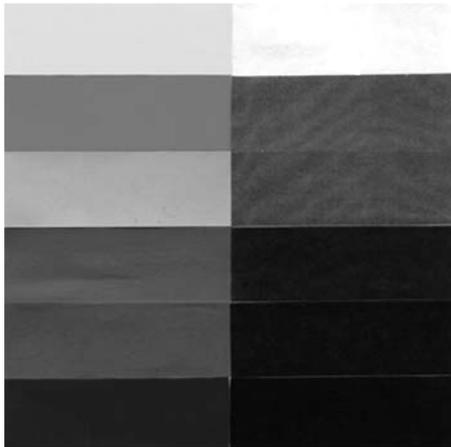
Students need to put work on the floor or wall, and to stand over or back from it and evaluate what they have done and determine changes. Without the process, there is small benefit for students in doing the exercises.

#### Exercise 1: Hue as Value

Each hue has an equivalent black to gray value. To illustrate, select six hues at random. Cut into swatches  $\frac{3}{4} \times 3$  inches and adhere them to bristol board. Run them through a color copier set for black and white. This should provide reasonable equivalents in black or gray values for each hue.

Arrange the black and gray values vertically into a progression with the darkest value at the top. The swatches should butt against one another. To the left of the gray scale, arrange the hues adjacent to their respective black or gray equivalent. The swatches of hues should butt against each other and also to the gray scale.

The result should be a vertical rectangle divided in half vertically and divided horizontally into six segments with hues on the left and their equivalent grays on the right. Craft in doing this exercise is very important.



## Exercise 2: Boundaries

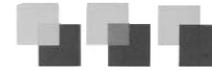
Where one color meets another color the two edges create a line. The line is referred to as a *boundary line*. The line will be soft or hard according to values, *i.e.* if the values are close, the boundary line will be soft; and if one value is dark and the other is soft, the boundary line will be hard.

- 1 Select six different hues with varying values, and from each, cut a swatch one by three-inches.
- 2 Without regard for hue or value, adhere the swatches butted against one another on the long dimension forming a rectangle six inches high.
- 3 Choose one hue at random and adhere it with the short end butted against the left end of the top swatch. This creates a one-inch boundary line.
- 4 Using all different hues, try to match the softness or hardness of that one-inch boundary line on the succeeding five divisions.
- 5 The final result is a six-inch square vertically divided in the middle, and having six horizontal divisions composed of twelve color swatches. The vertical center line should have the same degree of hardness or softness from top to bottom regardless of what hues or values are chosen.
- 6 Craft is an important criterion in evaluating this exercise.



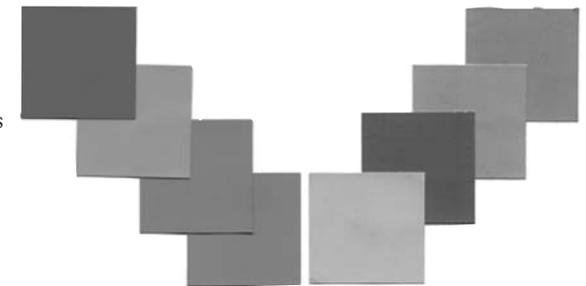
## Exercise 3: Transparency

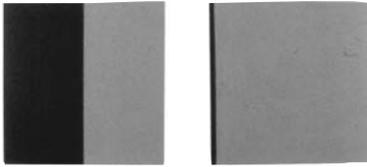
- 1 Select a hue of approximately middle value and cut three three-inch squares which are put down on a horizontal line.
- 2 Select a second hue which contrasts with the first one, and cut three one and one-half-inch squares. Position the squares over one corner of the larger squares creating a one-inch overlap.
- 3 In the squares on the left, create the illusion of the smaller square being in front of the larger one by selecting a third, totally different, hue for the one by one-inch overlap. It is the boundary principle that determines what is in front and what is in back, not the choice of hue.
- 4 On the second set of squares, create the illusion of the larger and smaller squares merging.
- 5 On the far right set of squares, create the illusion of the larger square being in front of the smaller one.
- 6 Craft is an important criterion in evaluating this exercise.



## Exercise 4: Color Manipulation

A common axiom in art has been *warm colors advance and cool colors recede*. Do a free-study and apply the boundary principle so that warm colors recede and cool colors advance. Size is optional. Sometimes students were asked to select one color and make it progressively recede through application of the boundary principle. Frame appropriately and craft is a consideration in evaluation.





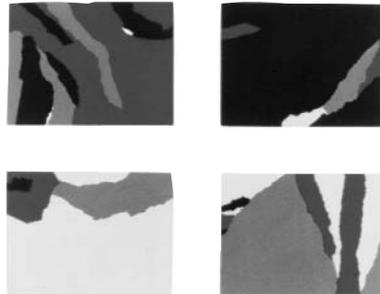
### Exercise 5: How Much to How Much

Select two hues that could be described as the ugliest possible color combination.

- 1 Do a free study with exactly the same amount of each color.
- 2 Do a free study making an exaggerated distinction between how much of one color to how much of the other appropriate framing and craft are a consideration in evaluation.

### Exercise 6: Color Climate

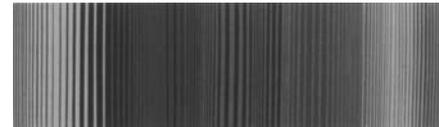
Select four different hues with varying values and make four compositions with each measuring 4 x 2 1/2 inches. The compositions will be mounted on one board. Incorporating the same four colors, make four free studies. By applying the *how much to how much* theory, try to disguise the fact that the same four colors were utilized in all four compositions. How the four compositions are mounted on the board and craft are considerations for evaluation.



### Exercise 7: Visual Mixture

The format is horizontal, and it is four-inches high but the width is optional. Choose three hues and construct a color mixture by arranging the colors into areas of alternate strips. There should be a one-half to three-quarter inch vertical band of each color to identify what colors were mixed. Placement of the three bands is optional. The objective is to create the illusion of as many different colors as possible through using visual mixture.

The principal considerations begin with the choice of hues. If they are in the middle value range, there will be greater success. Second, the width of the strips has a great deal to do with the illusion of mixture. The thinner the strips, the more effective the illusion. Third, the area of mixture has to be sufficiently wide as to allow the mixture to be read. If the bands of mixture are too narrow, the effect is lost. Ideally, the visual mixture should be obvious from a viewing distance of four to six feet. Craft is critical to the evaluation of this exercise.

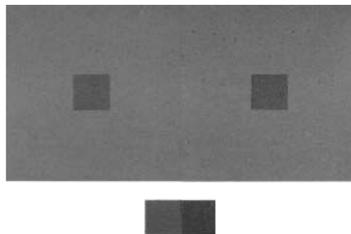


### Exercise 8: Color Interaction

Color on color will affect how they are seen. The objective is to make three colors appear as four through color interaction.

- 1 In order to better understand value change, cut two four-inch squares, one from black paper and one from white paper. Butt the two squares. Select a gray that appears as two separate values when it is cut into one-inch squares and centered on the black and the white squares. This is a value change and not a color change.
- 2 Select two hues, cut from each a four-inch square, and butt the squares against one another. Find a third hue that cut into one-inch squares and placed on the center of each of the larger squares creates an illusion of two different hues. This has to be a color change and not a value change.

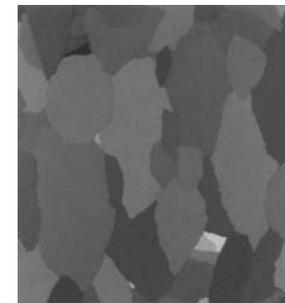
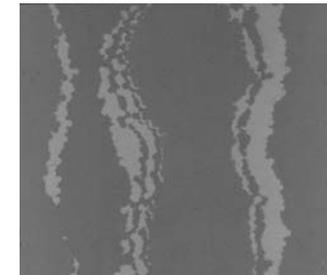
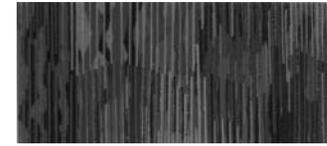
*To a great extent, success with this exercise is dependent on what hues are selected. Careful consideration must be given to selection. Craft will be a factor in evaluation.*



### Exercise 9: Free Studies

Using the four principles in some combination, make a free study with cut or torn paper. Emphasis is on color rather than shape or composition *i.e.* compositions will tend to be more static than dynamic.

Think of free studies as being similar to abstract painting rather than to design, most will be quite intuitive. Rely on a process of repeatedly putting studies upon the wall to determine new refinements that will make the color study visually more interesting. Dimensions are optional but the studies must be appropriately framed and craft is a consideration in evaluation.



### Exercise 10: Leaf Studies

Leaf studies are free studies done with an autumn leaf that has color. The leaf serves as a key to what other colors will be selected. Some colors might repeat those in the leaf while others might contrast. Leaf boundaries might be utilized to maximize the colors of the leaf while minimizing its shape. The leaf studies will tend to be painterly and intuitive.

