**Abstract**

This study will examine five universal principles of design: color, highlighting, alignment, consistency, and picture superiority effect. The purpose of the study was to examine whether the principles were applied effectively in three different designs to promote a department’s program offerings to prospective students. Using a post-hoc review as the method this research will show how each of the five principles were applied effectively in each design through the use of an interactive annotated portable document format (pdf) presentation.

**Introduction**

Creating visual designs for advertisements that instantly grasps the audiences’ attention is crucial to any institution when marketing their product. Information design when utilized appropriately, can greatly enhance the communication mechanism that is being created by the designer to reach the intended audience. By applying the principles from the book *Universal Principles of Design* by Lidwell, Holden, and Butler, the designer can ensure that proper techniques are implemented in the design so that the information can be efficiently and effectively communicated to the target audience.

In my current position, I work in an academic department at a community college where promoting the department’s program offerings to prospective students is crucial. While in the department, I have created flyers, brochures, and posters that promote and inform students of the department’s program offerings. These advertisements have been displayed and used at open houses and in high traffic areas throughout the College. The question that came to mind was were the universal principles of design being incorporated effectively in the designs to promote the department program offerings.

After reading the book *Universal Principles of Design* and reviewing a few designs that I had created to promote the department’s program offerings to perspective students, I wanted to see if the principles were effectively utilized in the designs. As I reviewed the designs, I kept in mind a few questions: Who is the intended audience? What is the purpose? Where will the designs be displayed? How is the material organized? What emotions or feelings do the designs evoke? How were the principles applied? After reviewing the designs, five universal principles of design were discovered to be incorporated in the designs.

# **Literature Review**

# **Universal Principles of Design**

If you were a designer, imagine having all your references conveniently in one text. In the book *Universal Principles of Design* by William Lidwell, Kritina Holden, and Jill Butler the authors make available convenient access to cross-disciplinary design knowledge for designers. Of the many principles, the authors have referenced only 125 principles in the book. Each principle contains a full description, example of its use, and guidelines for its use.

In the past, if designers wanted to learn about other areas of specialization they would have to study texts from many design disciplines. “The goal of this book is to assist designers with these challenges and reduce the effort required to learn about key principles of design across disciplines.” (Lidwell, Holden, Butler, 2010). The concepts in the book or principles were selected from a variety of design disciplines and consist of laws, guidelines, human biases, and general design considerations. The principles were selected based on several factors including utility, degree of misuse or misunderstanding, and strength of supporting evidence. The concepts in the book support cross-disciplinary thinking, problem solving, innovation, and ideation (Lidwell, Holden, Butler 2010).

The authors’ belief is that sound design can be achieved by all designers not only the small set of uniquely talented individuals and that well established design principles increase the chance of a successful design. This text has become a standard for designers, architects, and students who seek to broaden and improve their design expertise.

## Designing an effective advertisement begins with the consideration of many factors for the designer. Identifying the purpose of the product and who the intended audience will be is important so that the designer will know what elements to include in the design. “The use of well-established design principles increases the probability that a design will be successful.” (Lidwell, Holden, Butler, 2010). By applying the proper universal principles of design to the elements in the work, the designer can convey attention to specific areas of the design and able to draw the viewer to the information quickly. Through the use of design principles, the designer can also bring out feelings of positive or negative emotions in the viewer. When the elements in the design are aligned according to the universal principles of design then the content, layout and design, and graphics are effectively communicating the message. The five universal principles of design that will be examined in this research are color, highlighting, alignment, consistency, and picture superior effect.

The design elements are the basic units of any design or visual piece. How the principles of design are applied to these elements is important in that it determines how effective a design will be. According to Alex White, author of *The Elements of Graphic Design*, to achieve visual unity is a main goal of graphic design. When all elements are in agreement, a design is considered unified. No individual part is viewed as more important than the whole design. A good balance between unity and variety must be established to avoid a chaotic or a lifeless design. As a result, a design that is well thought out is one that will leave an impression in the mind of the viewer.

# **Annotating Portable Document Format**

Invented and launched in 1993 by Adobe Systems, “Portable Document Format (PDF) is a file format used to present and exchange documents reliably, independent of software, hardware, or operating system” (Adobe Systems, 2016). The universally compatible format provides a standard that works for Mac, iPad, iPhone, Android, or PC.

… PDF is now an open standard maintained by the International Organization for Standardization (ISO). PDFs can contain links and buttons, form fields, audio, video, and business logic. They can also be signed electronically and are easily viewed using free Acrobat Reader DC software” (Adobe Systems, Inc., 2016).

In the early 1990s, the PDF was aimed towards institutions, corporations, and anyone who needed to exchange reliable documents electronically. The primary use of a PDF is to preserve the appearance of the original document. “The PDF is, in essence, a carbon copy “image” of a document. It is similar to a fax machine that takes a “picture” of the document and electronically sends it to another fax machine” (investintech.com, September 1, 2016). All that is needed for the recipient to open the PDF (cross-format file) is a PDF viewer, such as Adobe Reader. A PDF viewer is also a cross-platform compatible software that allows users to view and create PDF files on or offline.

Moving forward, with the booming of the Internet, email, and free distribution of Adobe Reader, the PDF specification has been advanced to accommodate many uses in an increasingly technology-driven society. Users can now share, store, sign, comment on and review PDF files using Adobe Document Cloud to share and store their PDF files using the internet.

In today’s business world, the Portable Document Format is a necessary tool and familiarity with PDF creation processes is essential. Users can edit and annotate their PDF files and email them to others for their remarks. All annotation and drawing markup tools are available on the toolbar of the Comment feature. Users can create lines, arrows, text boxes, highlight and create notes on the PDF file. Additionally, the application also has a tracker that the sender can track a document review or view the status of a review. The advantages of the PDF file format is that work in progress can be shared easily amongst colleagues. According to A&L Computer Software Ltd. (2016), the benefits are as follows:

* Documents always look exactly the same
* Documents can be distributed worldwide for almost zero cost and then be digitally printed
* Documents can be magnified by up to 1600%, without diminishing the quality.
* The documents can be navigated by keyword search, table of contents or hyperlinks.
* The format is ideal for presentations, since PDF documents always look exactly the same on all platforms.
* The file format is very compact, so files can be sent quickly to recipients.
* Ideal for archiving, since the look and feel of documents is retained and the document size is compact
* The file format is essential for business documents like agreements and forms that must retain their exact appearance for legal reasons.

There are many other PDF creation software that users can choose to download as free or subscriptions such as PDF Annotator, PDFCreator, and Nitro PDF that allow users to edit existing PDF files or convert and edit files. For the purposes of this research Adobe Reader DC was utilized as it is the leading PDF viewer that functions with multiple platforms such as computers and mobile devices.

**Conclusion**

Certainly, the literature affirms that for a design to be effective in communicating the purpose clearly and efficiently to the intended audience the universal principles of design must be used accordingly. When the proper techniques are intertwined with the elements of a design, the designer has the power to bring attention to key elements and focal points of a design. In turn, creating an emotional response in the audience to take action on the message. Through the use of digital PDF files in creating designs, users have the ability to work collaboratively on projects with the ability to edit and share their documents across multi-platforms.

**Research Question**

This research will examine whether the universal principles of design were incorporated effectively in the information and computer technologies poster, brochure, and program sheet so that the department’s program offerings in computer studies could be effectively promoted to prospective students.

**METHOD AND TECHNIQUE**

**Method: Post-hoc Review**

To be able to identify whether the universal principles of design were incorporated effectively in the poster, brochure, and program sheet, this research used a post-hoc review method. A post- hoc analysis (from Latin *post hoc,* “after this”) consists of looking at the data-after the experiment has concluded (Wikipedia, 2016). For this research, the three designs were reviewed and evaluated. The rationale for conducting a post-hoc review was that the documents were already created and that an analysis of the designs using the universal principles of design as the criteria would answer the research question. While reviewing the designs, the reviewer looked for patterns in the work that either adhered to or disregarded the techniques as described in the *Universal Principles of Design* text. The reviewer also had to observe objectively for these patterns to show accurately without bias whether the techniques were used effectively in the designs.

To begin the post-hoc review process the reviewer made themselves familiar with the techniques as described in the Universal Principles of Design text and kept in mind questions when evaluating the designs such as, Who is the intended audience? What is the purpose? Where will the designs be displayed? How is the material organized? What emotions or feelings do the designs evoke? How were the principles applied?

As the reviewer began scanning the designs and evaluating each design, notes were taken as to what principles were found in each design. Since each of the three designs served the same purpose which was to promote the program offerings to prospective students the content in the designs was similar, but distributed in different formats. The only difference was the large amount of content in the program sheet design which will be discussed later in the review. The reviewer then had to look at how each design was used and displayed and if the content design and layout was appropriate and organized for the medium it was used for. The five principles that were found to be visible across all three designs regardless of the type of design that was used to present the content were color, highlighting, alignment, consistency, and picture superiority effect.

Additionally, the reviewer took an extra step to make sure that each design had in deed utilized the principles that were identified by using a check sheet with the elements of the design divided into categories of content, design and layout, and graphics so that the evaluation would be thorough. The next step would be to include in the review visual examples as evidence that the universal principles of design were found to be incorporated in the designs effectively. By using PDF files of the three designs and annotating the files with phrases to show how and where the techniques were used gives the reader a visual to clearly understand the information.

The software that the reviewer used to illustrate examples of the various principles that were used was Adobe Reader DC as this software is most widely used across platforms. There were many other PDF software annotators online that could be downloaded with similar features as Adobe Reader, but the learning curve was time consuming in learning how to navigate the other software, and whether they would be multi-platform compatible.

## **Technique and Design**

The annotated PDF collection illustrating how each of the five universal principles of design color, highlighting, alignment, consistency, and picture superiority effect were applied effectively in the designs can be found at:

<https://drive.google.com/file/d/0B_6bhoylwn2mNURsME1yZG9xbEliMExKRkxyWVpqNFQ0U2VN/view?usp=sharing>

**Research & Post-hoc review**

### **Color**

“Color is used in design to attract attention, group elements, indicate meaning, and enhance aesthetics” (Lidwell, Holden, Butler, 2010). Color is the base of all design and can make the elements come to life and attract attention or can impair the function of the design. “Also evident when it comes to color is it that it is a crucial component of design and creates an emotional response by the people viewing it” (Donley, 2016). By using the proper color combinations on the color wheel, the designer can convey a warm or cool feeling in the design when viewed by the audience. Color can also create harmony by using different color schemes in the design that pertain to the information. The amount of color that is used should also be limited to what the viewer can process at a glance. “Generally, desaturated, dark colors are perceived as serious and professional; and saturated colors are perceived as more exciting and dynamic” (Lidwell, Holden, Butler, 2010). Though there is no universal symbolism for different colors or color meaning, the designer should always take into consideration the meaning of colors and combinations for the target audience prior to creating the product.

The importance of choosing the right color is helpful in that color sets the tone of the message and guides the viewer’s eye that presents a sense of direction and recognition that the viewer can identify and relate to. When creating a marketing design, according to Creative, Inc.,

…the most important thing to remember is that your design needs

to speak to your prospective audience. What colors will draw their

eye? What colors best represent the message you’re trying to share? What

colors consistently represent your business brand? (November 21, 2013)

Being a visual society, great importance is placed on the visual presentations that people choose to view. The right color choice in a design will impact the viewer’s decision in subtle ways whether to have an interest in the advertisement or not.

### **Highlighting**

“Highlighting is an effective technique for bringing attention to elements of a design” (Lidwell, Holden, Butler, 2010). The highlighting technique can be applied to an area of text or illustration. Typically, highlighting should be used at a minimum as designs can become engulfed with this technique and uneasy to view. Using color for highlighting can be very effective when used in conjunction with other techniques. Bolding, italics, and underlining titles or small captions are also common techniques but bolding is preferred as it brings the most attention to key words and ideas with less noise. Inversing works well with text to bring attention as well but should also be used in moderation. According to Newbold (2013), “Inverse text is type on a solid background (like white type on a black bar). Inverse text can be useful (in fact, it can make information pop out almost more than any other highlighting method), but it can also be an eyesore.” As a general rule, highlighting should be kept consistent and no more than 10% of a design should be consumed for optimal effect.

### **Alignment**

“Alignment is the placement of elements such that edges line up along common rows or columns, or their bodies along a common center” (Lidwell, Holden, Butler, 2010). When elements of a design are aligned a sharper, more ordered design is created. Aligning the parts, allows the elements to create a visual connection with each other. In turn, allowing the viewer to easily scan through the document. According to Hortin (2009), “It tightens the design and eliminates the haphazard, messy effect which comes when items are placed randomly.” Although alignment can be achieved through diagonals, spiral or circular paths as well, more attention needs to be given by the designer so that the alignment is noticeable and that the elements do not appear disordered. By using highlighting, the designer can better reveal these types of alignment paths. Likewise, misalignment of elements can be used to attract attention or create tension in a design. For the most part, alignment should be kept in rows and columns and along a centerline.

The alignment principle is an integral part of a design in that it is the framework for all the elements and helps the designer to choose how and where to place the elements. “Taking advantage of strategic placement helps us to craft stronger and more compelling compositions and utilizing a grid system provides a standard guide for element placement” (Boudreaux, 2012). When making alignment decisions, the primary consideration that should be taken by the designer is how the viewer will be viewing the design.

### **Consistency**

Consistency is important in a design in that it creates a feeling of organization and makes the content more aesthetically pleasing so that viewers can easily interpret the information. “Consistency enables people to efficiently transfer knowledge to new contexts, learn new things quickly, and focus attention on the relevant aspects of a task” (Lidwell, Holden, Butler, 2010). Utilizing consistency together with other techniques such as typeface, color, and graphics helps to improve recognition by the audience. According to Zerwic et al,

Being consistent in font size and type, line spacing, alignment of graphics and

text, and size of graphics not only helps present a unified style as a presenter

or institution, but also allows the audience to pay attention to the

information presented rather than to the style of its presentation (2010).

By including the institution’s logo in the design, along with the colors and font is vital since it brings attention to the advertisement in that the viewer already has an established knowledge and feeling for the institution. When the visual and typographical elements are applied uniformly then the design can be effective.

### **Picture Superiority Effect**

The saying a picture is worth a thousand words may be true. “People remember pictures better than words, especially over longer periods of time. This phenomenon as we know it today, is called the Picture Superiority Effect” (Krum, 2015). Concepts that are learned by viewing pictures are more easily remembered than by text alone. By adding a picture with the text in an advertisement the viewer can associate the image with the text making the information easier to recall for future use.

When using the Picture Superiority Effect, the designer cannot use a random image. The image must work together to reinforce the content. “Consider the inclusion of meaningful pictures in advertising campaigns when possible, especially when the goal is to build company and product brand awareness (Lidwell, Holden, Butler, 2010). Additionally, the effect of the technique increases when the audience is casually exposed to an advertisement and exposure time is limited. According to Hockley, n.d., “…pictures are more memorable than words because they are more likely to be encoded uniquely in memory since they have more distinctive visual features.” This type of technique can be used in all mediums of advertising so that recognition and recall of key information can be improved by the viewer.As the information becomes more complex, the results of the effect are weakened. Keeping the phrase simple that is associated with the text is vital.

The significance of utilizing the effect in a design is that research shows that viewers will retain more data since the human brain retains information easier when an image is included with phrases. “Hear a piece of information, and three days later you'll remember 10% of it. Add a picture and you'll remember 65%” (Medina, 2015). By including the picture superiority effect in the design allows the purpose or message of the advertisement to be embedded in their minds of the audience.

## **Example 1: Post-hoc Review of Poster**

The overall review of the information and computer technologies poster, brochure, and program sheet was found to be positive. By applying the universal principles of design, the designer was able to transfer the information to the audience effectively. For this post-hoc review, the five principles that were found to be utilized in each designs are divided into three categories of content, design and layout and graphics to discuss how they were applied effectively.

***Content***

The purpose statement of the poster, “The Information and Computer Technologies department at Monroe Community College provides a wide variety of programs focused on computer studies” is clearly stated and aligned horizontally at the top of the design which gives viewers information instantly of what the poster is aiming to communicate. The content in the poster is clearly linked to the purpose statement and is relevant to the purpose in that the program offerings are listed with their descriptions for students to differentiate. The designer also includes essential information that students may need to know such as a brief explanation of the various degrees offered, and stating that portions of the degrees can be completed online as well. Contact information is also included in case the viewer needs more information or to take further action after reviewing the poster. All the information in the poster clearly has a purpose and there is no non-essential information to clutter the design.

## **Design and Layout**

### ***Color***

The colors that are used in the design are consistent with the institution’s logo and branding which bring a warm and welcoming feel to the poster. Through the use of the brand logo and colors, the designer was able to bring a familiar feeling to the design in that the viewers are familiar with the logo and what the institution offers. The gold and black colors bring a bold, confident, and professional appearance to the poster. The white background that is chosen by the designer is also consistent with the brand guidelines of what the logo should be rendered on. Additionally, the white background choice allows for the graphics to stand out and grasp the viewers’ attention and allowing for easy readability of the text.

### ***Highlighting***

Through the use of highlighting the designer was able to specifically identify key points in the poster without overindulging in the technique. The key points in the poster, which are the program offerings, are highlighted by using the gold color that is consistent with the institution’s brand color. To add to the effect of highlighting, the designer also bolded the text in the program name headings allowing for separation of the various program descriptions. In turn, allowing for the viewer to easily scan which program description they would like to read about further. The same technique is also applied in the contact information making it easily visible to the audience. The subtle effect of the bolding and gold color highlighting intertwined together allows for an organized feel when viewed which also includes the brand color again for familiarity and uniformity.

The designer also utilizes inversion of text appropriately, which is another highlighting technique that allows for key information to stand out to the viewer. In the catch phrases, “50% or more” and “completed on line!” the designer inverts and bolds the text so that the pertinent information stands out and draws the viewer to the information. By enlarging and bolding these statements, the designer brings a sense of excitement and motivation to the viewer when read so that action may be taken on the message.

### ***Alignment***

Furthermore, the alignment pattern that is used by the designer allows for the information to be well organized. By grouping the text and graphics in three columns with left justified text the designer gives the viewer a clear path to follow when scanning the poster. The three columns are immediately aligned below the horizontal line at the top of the poster which states the purpose of the design. The first column includes the main focus which is the program headings and descriptions grouped together with the newest program highlighted at the top of the list. By grouping the offerings in the first column and applying the highlighting and bolding techniques together, the designer subtly brings attention to the program offerings and is able to group the information together by means of a column.

In the second column, the designer strategically places the department name and College logo along with graphics in the center bringing attention to the viewer. By placing these elements in the center column, the designer is able to create a focal point with the images and text together drawing the viewers’ eye to the name of the institution. In turn, the focal point of the second column brings a sense of balance and easiness when the reader views the poster by separating the content in columns one and three.

In the third column, the designer includes content that allows for the viewer to take positive action on the advertisement by including contact information, and an image with text to invoke emotion and action. It is clear that the designer uses the columns effectively to organize the content of the design so that the flow is logical to the reader.

### ***Consistency***

Throughout the design the consistencytechnique is evident in that the designer uses the brand logo, text and colors of the institution and is able to transfer them to the techniques that are used in the elements. By using the institutions brand logo, the familiarity of the logo is transferred to the viewer and the message that it is sending. The font that is used in the poster is consistent with the branding guidelines and proper line spacing is used throughout each section of the design. The designer is also consistent when using the highlighting technique and applying it to similar elements, such as program headings, to group them and create attention to key phrases. The size of the graphics are consistent with the size of each section and are not overwhelming when viewed. By having consistency in the design the designer gives the design uniformity.

**Graphics**

***Picture Superiority Effect***

Through the use of the picture superiority effect the designer was able to reinforce and intertwine key phrases with images to embed them in the viewer’s memory. The graphics that the designer was able to incorporate in the design clearly reinforce the content of the poster in that the images engage and bring emotion to the viewer. The three images that are used in the center column along with the logo portray both male and female students and an image of the globe. The designer strategically includes an image of a female working in the field to bring attention and attract more female students to the computer studies programs. By including an image of the globe, the designer signifies and promotes that programs are offered online to reach diverse students across the globe.

Furthermore, the designer is able to bring out a feeling of excitement through the image in the third column by encouraging the viewer to take action. By adding an image of a female with her arms raised in excitement while using a laptop, along with the bolded and inversed color text “50% or more” and “completed online!” the designer is able to strengthen the message to the viewer causing them to take action and enroll in a program. Additionally, the female in the image is wearing a multi-color striped shirt which is easy for the viewer to remember. The designer has good use of the picture superiority effect so that the viewer can easily remember the stripes and connect the image with the message in their mind easier for later recall. Including an image of a laptop at the top of the column allows the viewer to link the image to the purpose statement. The images the designer uses are also clear and easily viewed from a short distance.

## **Example 2: Post-hoc Review of Brochure**

**Content**

A second post-hoc review was conducted on the brochure design to see if the principles were applied to the design as well and the results proved to be positive. The designer was able to incorporate the universal principles of design effectively so that the document could be used as an informational pamphlet informing prospective students about the department’s program offerings. The purpose of the brochure is similar to the poster design but the purpose here is to have a document that prospective students can take away for future reference. The content in the brochure is clearly linked to the purpose which is informing the target audience of the department program offerings. Essential information is also included such as detailed descriptions of the various degrees offered by the department. The information is clear and well organized. Contact information is also included in case prospective students need more information after reviewing the brochure. All the information in the brochure clearly has a purpose and there is no irrelevant information.

## **Design and Layout**

## ***Color***

The colors that are used in the brochure are consistent with the College’s branding which bring a warm, bold and professional feel to the brochure. As the viewer opens the brochure, the gold color is used to highlight key information and guide the reader through the inside portion of the brochure from left to right. The program headings are also highlighted in gold so that the reader can quickly scan the sections. Shading the image of the laptop in the document with the gold color also balances the overall color feel for the design. Furthermore, the white background choice is the preferred rendering of the design colors for easy readability of the text. ***Highlighting***

Highlighting was utilized in the brochure to identify key points without overusing the technique. Again, the key points in the brochure, which are the program offerings, are highlighted by using the gold color that is consistent with the institution’s brand color. To make catch phrases stand out the designer inverted and bolded text fonts in the phrases “50% or more” and “completed online!” Furthermore, highlighting is also used in the degree names by inverting the text color with the background of the shield design to bring attention without engulfing the design in additional color. In turn, allowing for the viewer to easily scan which degree description they would like to read about further. The same technique is also applied in the contact information making it easily visible to the audience. By using bolding and inverting of text color, highlighting is woven together and allows for easy viewing by the reader. By enlarging and bolding these statements, the designer brings a sense of excitement and enthusiasm so that action may be taken on the message by the reader.

***Alignment***

Furthermore, the alignment technique that the designer used in the brochure is center justified in all three sections of the design including front and back. When the design is folded into the three sections and opened this gives each page a neat and organized feel. Since each page section of the brochure is narrow and tight, centering the information gives balance on either side of the section and creates white space. By aligning the title and images with the logo name on the cover using the center for alignment a clear focal point is established for viewing. When the inside of the brochure is opened, the designer strategically aligns the new program description in the center section with the word “New” on either side to bring attention to the reader. The designer further aligns the new program with the graphic below and creates a focal point that will allow entices the viewer to take action. Finally, on the back cover of the brochure the designer again centers the degree descriptions in the shield pattern so that the design is consistent in all sections.

***Consistency***

Consistency is evident throughout the brochure in that the designer uses the brand logo, text and colors of the institution and is able to transfer them to the techniques throughout the elements. By being consistent in the colors that are used along with the logo brings a familiar feel to the viewer and creates a design that is not cluttered in color and various font style. Utilizing the institutions brand logo, the familiarity of the logo is transferred to the viewer and the message that it is sending. The designer is also consistent with the line spacing that is used so that the text is easily interpreted. The unique graphic pattern (honeycomb) is also utilized to create uniformity in the design. When using the other techniques such as highlighting, the designer is consistent in the way the elements are grouped to create attention to key phrases. The graphics are all consistently centered and are not overwhelming when viewed. By using consistency in the brochure the designer gives the design uniformity.

**Graphics**

***Picture Superiority Effect***

The Picture Superiority effect technique is applied in the message on the cover of the brochure implying that computer studies can be for a diverse group of people. Through the use of the picture superiority effect, the designer was able to reinforce and intertwine key phrases with images to embed them in the viewer’s memory. The graphics that the designer was able to incorporate in the design clearly reinforce the content of the brochure in that the images engage and bring emotion to the viewer. The three images that are used on the cover along with the logo are intended to portray both male, female, and global on-line learners. The designer strategically includes an image of a female to bring attention and attract female students as well to the computer studies programs. By including an image of the globe, the designer implies that programs are offered online and embedding the image in the reader’s mind.

Likewise, the image of a female student in a multi-color stripped shirt with her arms raised in excitement along with the catch phrases “50% or more” and “completed online!” the designer is able to bring out a feeling of excitement in the target audience. Strategically, the designer choses the image so that the photo is easy to remember for later recall. The images the designer uses are all clear and easily linked to the message they are portraying.

**Example 3: Post-hoc Review of Program Sheet**

***Content***

A third post-hoc review was performed on an academic program sheet, and by far the universal principles of design were incorporated here as well. Careful consideration was taken by the designer in using the principles exceptionally well in that the amount of information that had to be conveyed to the reader in the program sheet is abundant. The purpose of the content in the program sheet is to inform prospective students of the academic program and give as much information to the student so that they are able to make a decision to enroll in the program. The challenge of this document since it is heavy with content is to present the information in an organized fashion so that the content does not look cluttered.

**Design and Layout**

***Color***

Color is immediately introduced in the program sheet in the top section of the sheet which includes the institution’s name and branding. In the program sheet example, color was used carefully to differentiate key points. Due to the large amount of textual content in the program sheet, the design has clear transition from heading to heading allowing the reader to be able to scan the reading easily and at the same time choose what information to glance. Different shades of gray are used to separate blocks of information into categories and lists. The branding color is also used on the chart to organize data in a table to make the figures stand out and used as a separator between the black color of the text.

***Highlighting***

The Highlighting technique is utilized in the headings by using uppercase text so that categories are easily identified. Bolding is a preferred technique and is used to highlight different target elements as it adds minimal noise to the design. The designer uses slightly different size type along with bolding to draw attention without an overbearing effect to all the headings. By adding bullets to short word phrases and italics the reader is able to quickly scan and differentiate the information in chunks. Another method of highlighting that is used that can make statements pop out is inverse text which is used in the shield graphic pattern.

***Alignment***

After reviewing the content in the program sheet it was found that the designer chose to use horizontal and vertical alignment of the text. Left alignment was used in the document which creates a clear visual starting point for the reader. Columns are also used to align groups of smaller bits of information vertically. By breaking up the information into smaller groups of bulleted chunks the reader is able to comprehend the content with ease and quickly glance back to the list. As the reader scans the document the larger information is spread across the page with evenly spaced lines in between so that the content does not appear cramped. Furthermore, a horizontal chart is used to showcase figures in the document. By spreading the chart horizontally across the page in two rows and columns, whitespace is created within the chart making the information look not cluttered. The horizontally aligned chart also breaks up the content information that is above and below the chart which creates a smoot flow when reading. Therefore, aligning the elements in the program sheet properly is key to the framework of how the content will appear to the reader.

***Consistency***

Overall, consistency is achieved in the program sheet through the use of brand logo colors and font style. The design and layout of the information is organized by applying the same techniques throughout the design. The large amount of information in the program sheet has been carefully considered so that elements flow smoothly from one section to the next. By utilizing consistency together with other techniques such as bolding, highlighting, alignment and color the designer achieves an aesthetically pleasing feel and is able to efficiently transfer the new knowledge. When the techniques are aligned and applied uniformly the key points in the content clearly stand out.

# **Graphics**

# ***Picture Superiority Effect***

The Picture Superiority effect is achieved through using the unique graphic pattern (honeycomb) that is part of the institution’s brand logo. When the viewer sees the logo they can quickly identify with the institution and what is offered. The logo shield shape is also used as a supplemental design in the sheet as a text box to make key phrases pop out to the reader. Since the program sheet contains a large amount of text in the content, the document uses the design pattern as a header at both the front and back side of the sheet so that the audience can identify the information with the institution. When the technique is utilized with the brand logo bits of information are embedded in the reader’s mind which improves retention.

# **SUMMARY**

Overall, the results of the research reveals that the universal principles of design were in deed effectively applied in the three designs to promote the program offerings in computer studies. When the principles are applied to the elements in the designs the purpose of the designs is clearly and effectively communicated. Through the use of the familiar logo colors the tone of the design was set and the viewer is drawn to key points through the use of the highlighting technique. The designs had clear visual starting points through proper alignment of elements, and uniformity was established by utilizing consistency in the application of the techniques. By intertwining key phrases with an image, the designer was able to use picture superiority effect to embed and reinforce the content in the minds of the viewer for later recall.

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