

## Visual Design and Imaging Alignment

This document contains information about four Career-Technical Articulation Numbers (CTANs) for the Visual Design and Imaging Alignment Career-Technical Assurance Guide (CTAG).

- Design and Typography Fundamentals
- Fundamentals of Advertising and Communication
- Beginning Digital Image Editing
- Fundamentals of Illustration and Layout

### 1. Design and Typography Fundamentals:

**General Course Description:** This course introduces students to typography and how to use typography as a critical part of page layout. As they continue to build upon the concept of type and the basic principles of designing with type. This course trains students to define how the printed or viewed page looks as an integrated graphic element.

**Advising Notes:** This course will utilize Adobe software.

Students taking this course will earn credit for either 340320 Digital Print Design or 340315 Visual Creation.

All Learning Outcomes signified with an asterisk (\*) are considered essential, and must be taught.

**Semester Credit Hours:** 3

#### Alignment:

Learning Outcomes	Outcomes and/or Competencies are from the Ohio Department of Education's - Career Field Technical Content Standards
1. Analyze typographic and design vocabulary to discuss application of design principles and analyze solutions to design problems.*	1.2.3 Identify and use verbal, nonverbal and active listening skills to communicate effectively.

1.2.6. Use proper grammar and expression in all aspects of communication.

1.10.1. Identify how the roles of sales, advertising and public relations contribute to a company's brand.

1.10.2. Determine the customer's needs and identify solutions.

2.1.1. Describe art elements of line, value, color, shape, space, form and texture in various media that are used individually or in combination.

2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.

2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.

2.1.4. Compare and contrast unity and variety within a design.

2.1.5. Contrast formal/symmetrical, informal/asymmetrical and radial balance.

2.1.6. Observe movement shown through repetition, pattern and rhythm.

2.1.7. Interpret emphasis through contrast, isolation, size and placement.

2.1.8. Identify visual hierarchy used to establish dominance.

2.1.9. Recognize the use of proportion/scale.

2.2.2. Analyze position in color theory models (e.g., color wheel, Munsell's design relationship among chroma/intensity, value/lightness and hue).

2.2.3. Describe how changes to tint, shade, hue, value, intensity and saturation relate to color theory.

	<p>2.2.8. Compare and contrast choices using the psychology of color.</p> <p>2.2.9. Critique the use of color schemes (e.g., primary, secondary, tertiary, analogous, complementary, triads, monochromatic) in various media.</p> <p>2.4.7. Determine composition, formal qualities, scale and use of space.</p> <p>2.5.6. Determine the effect of various font types on operating systems.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p>
<p><b>2. Develop a completed design and type projects.*</b></p>	<p>1.8.2. Select and organize resources to develop a product or a service.</p> <p>1.10.1. Identify how the roles of sales, advertising and public relations contribute to a company's brand.</p> <p>1.10.2. Determine the customer's needs and identify solutions.</p> <p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p>

	<p>2.3.7. Create a 3D design according to specific measurements using drawing, cutting, scoring and bonding techniques.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.7. Determine composition, formal qualities, scale and use of space.</p> <p>2.4.8. Apply compositional techniques, including rule of thirds, use of a grid system, 180-degree rule, framing, fill frame, pyramid, strong center of interest and aspect ratio.</p> <p>2.4.9. Create visual continuity among a variety of products.</p>
<p><b>3. Employ strategies for choosing appropriate type.*</b></p>	<p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.1.7. Interpret emphasis through contrast, isolation, size and placement.</p> <p>2.1.8. Identify visual hierarchy used to establish dominance.</p> <p>2.1.9. Recognize the use of proportion/scale.</p> <p>2.4.5. Differentiate between raster- and vector-based layouts.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.7. Determine composition, formal qualities, scale and use of space.</p> <p>2.5.2. Apply typography kerning and leading to typefaces for readability.</p> <p>2.5.3. Use typographic measurements in terms of picas, points, pixels and ems.</p>

	<p>2.5.4. Mix families of type within a project.</p> <p>2.5.1. Select typefaces (e.g., serif, sans serif).</p> <p>2.5.5. Use typography as a primary component of logo design.</p> <p>2.5.6. Determine the effect of various font types on operating systems.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p>
<p><b>4. Identify the basic fundamentals of typographic design.*</b></p>	<p>2.1.1. Describe art elements of line, value, color, shape, space, form and texture in various media that are used individually or in combination.</p> <p>2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.</p> <p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.1.4. Compare and contrast unity and variety within a design.</p> <p>2.1.5. Contrast formal/symmetrical, informal/asymmetrical and radial balance.</p> <p>2.1.7. Interpret emphasis through contrast, isolation, size and placement.</p> <p>2.1.8. Identify visual hierarchy used to establish dominance.</p> <p>2.1.9. Recognize the use of proportion/scale.</p> <p>2.2.2. Analyze position in color theory models (e.g., color wheel, Munsell's design relationship among chroma/intensity, value/lightness and hue).</p>

	<p>2.2.3. Describe how changes to tint, shade, hue, value, intensity and saturation relate to color theory.</p> <p>2.4.7. Determine composition, formal qualities, scale and use of space.</p> <p>2.5.1. Select typefaces (e.g., serif, sans serif).</p> <p>2.5.6. Determine the effect of various font types on operating systems.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p>
<p><b>5.</b> Recognize characteristics of type and how its functions in relationship to anatomy, measurements and classification.*</p>	<p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.1.9. Recognize the use of proportion/scale.</p> <p>2.5.6. Determine the effect of various font types on operating systems.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p>

## 2. Fundamentals of Advertising and Communication

**General Course Description:** Course will focus on the importance, power and dynamics of visual design directed to a specific target audience. Visual communication in relationship with advertising takes on many forms in graphic design, poster design, interior and exterior environmental design, digital painting, logo development, brand identity, outdoor advertising, web page development and digital photography.

**Advising Notes:** This course will utilize Adobe software  
All Learning Outcomes signified with an asterisk (\*) are considered essential, and must be taught.

**Semester Credit Hours: 3**

**Alignment:**

Learning Outcomes	Outcomes and/or Competencies are from the Ohio Department of Education's - Career Field Technical Content Standards
<p><b>1.</b> Analyzing the power of visuals in advertising campaigns through research.*</p>	<p>2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.</p> <p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.2.9. Critique the use of color schemes (e.g., primary, secondary, tertiary, analogous, complementary, triads, monochromatic) in various media.</p> <p>2.4.9. Create visual continuity among a variety of products.</p> <p>2.4.12. Evaluate the product in terms of the message or meaning for the targeted audience.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p> <p>3.1.1. Analyze the writing content and styles of fact-, entertainment- and marketing-based models.</p> <p>3.1.3. Assess or determine the platform for delivery (e.g., video, audio, print).</p> <p>3.2.1. Compare and contrast entertainment-based models of content created for print, electronic, audio, video and audio-visual genres.</p> <p>3.4.1. Research and analyze trends and local markets for opportunities.</p> <p>3.4.2. Determine the wants and needs of the target audience.</p>
<p><b>2.</b> Demonstrate effective application of core visual communications concepts through various advertising tactics.*</p>	<p>2.1.3 Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.4.1. Create thumbnail and rough sketches.</p>

	<p>2.4.8. Apply compositional techniques, including rule of thirds, use of a grid system, 180-degree rule, framing, fill frame, pyramid, strong center of interest and aspect ratio.</p> <p>2.4.9. Create visual continuity among a variety of products.</p> <p>2.4.10. Determine how the technical characteristics of the print medium affect content and style.</p> <p>2.4.12. Evaluate the product in terms of the message or meaning for the targeted audience.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p> <p>3.1.10. Select visual imagery to support or enhance copy.</p>
<p><b>3.</b> Design, develop and produce effective visual communication strategy for the purpose of advertising.*</p>	<p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.4.1. Create thumbnail and rough sketches.</p> <p>2.4.3. Create single and multi-color layouts using images and formats.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.2. Apply proper color profile for final output.</p>

	<p>2.4.8. Apply compositional techniques, including rule of thirds, use of a grid system, 180-degree rule, framing, fill frame, pyramid, strong center of interest and aspect ratio.</p> <p>2.4.9. Create visual continuity among a variety of products.</p> <p>2.4.12. Evaluate the product in terms of the message or meaning for the targeted audience.</p> <p>2.5.1. Select typefaces (e.g., serif, sans serif).</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p> <p>3.1.3. Assess or determine the platform for delivery (e.g., video, audio, print).</p> <p>3.1.5. Create copy that emphasizes the central theme through supporting ideas or facts.</p> <p>3.1.10. Select visual imagery to support or enhance copy.</p> <p>3.2.1. Compare and contrast entertainment-based models of content created for print, electronic, audio, video and audio-visual genres.</p>
<p><b>4.</b> Discuss and review effective logos, images and type in advertising: print ads, posters, outdoor, interior environments, digital paintings and web sites.*</p>	<p>1.2.5. Communicate information (e.g., directions, ideas, vision, workplace expectations) for an intended audience and purpose.</p> <p>1.2.6. Use proper grammar and expression in all aspects of communication.</p> <p>2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.</p> <p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.4.12. Evaluate the product in terms of the message or meaning for the targeted audience.</p>

	2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).
5. Understand principles of advertising and visual communications and the key roles of advertising as a business process.*	<p>2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.</p> <p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.2.9. Critique the use of color schemes (e.g., primary, secondary, tertiary, analogous, complementary, triads, monochromatic) in various media.</p> <p>2.4.12. Evaluate the product in terms of the message or meaning for the targeted audience.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p> <p>3.1.10. Select visual imagery to support or enhance copy.</p>

### 3. Beginning Digital Image Editing

**General Course Description:** This course will instruct the student to create, edit, manipulate and manage digital imagery using Adobe Photoshop, utilizing the most recent version of software available. Student will also use techniques that focus on visual communications and various mediums including print, web and social media.

**Advising Notes:** This course will utilize Adobe software

All Learning Outcomes signified with an asterisk (\*) are considered essential, and must be taught.

**Semester Credit Hours:** 3

**Alignment:**

Learning Outcomes	Outcomes and/or Competencies are from the Ohio Department of Education's - Career Field Technical Content Standards
<p>1. Demonstrate the ability to import, manipulate and edit digital images including digital retouching (images basics).*</p>	<p>2.2.4. Identify gamut output issues and calibrate color.</p> <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p> <p>2.4.2. Apply proper color profile for final output.</p> <p>2.4.5. Differentiate between raster- and vector-based layouts.</p> <p>2.4.11. Calculate finishing requirements in a layout (e.g., registration marks, bleed, slugs).</p>
<p>2. Demonstrate the ability to work with imported text, graphics and special effects in a designed layout.*</p>	<p>2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p> <p>2.4.2. Apply proper color profile for final output.</p> <p>2.4.5. Differentiate between raster- and vector-based layouts.</p>

	<p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.11. Calculate finishing requirements in a layout (e.g., registration marks, bleed, slugs).</p> <p>2.5.1. Select typefaces (e.g., serif, sans serif).</p> <p>2.5.2. Apply typography kerning and leading to typefaces for readability.</p> <p>2.5.3. Use typographic measurements in terms of picas, points, pixels and ems.</p> <p>2.5.4. Mix families of type within a project.</p> <p>2.5.5. Use typography as a primary component of logo design.</p> <p>2.5.6. Determine the effect of various font types on operating systems.</p>
<p>3. Preparing images for print, with focus on color management.*</p>	<p>2.1.1. Describe art elements of line, value, color, shape, space, form and texture in various media that are used individually or in combination.</p> <p>2.2.2. Analyze position in color theory models (e.g., color wheel, Munsell's design relationship among chroma/intensity, value/lightness and hue).</p> <p>2.2.4. Identify gamut output issues and calibrate color.</p> <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p> <p>2.4.2. Apply proper color profile for final output.</p>

	<p>2.4.3. Create single and multi-color layouts using images and formats.</p> <p>2.4.4. Use process color and spot color separations.</p> <p>2.4.5. Differentiate between raster- and vector-based layouts.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.10. Determine how the technical characteristics of the print medium affect content and style.</p> <p>2.4.11. Calculate finishing requirements in a layout (e.g., registration marks, bleed, slugs).</p> <p>2.5.3. Use typographic measurements in terms of picas, points, pixels and ems.</p>
<p>4. Preparing images for web output-define the importance of preparing images properly for final output.*</p>	<p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p> <p>2.4.2. Apply proper color profile for final output.</p> <p>2.4.3. Create single and multi-color layouts using images and formats.</p> <p>2.4.4. Use process color and spot color separations.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.11. Calculate finishing requirements in a layout (e.g., registration marks, bleed, slugs).</p>

	<p>2.5.3. Use typographic measurements in terms of picas, points, pixels and ems.</p>
<p>5. Understand and demonstrate competency in the palettes necessary to function in Adobe Photoshop.*</p>	<p>2.2.4. Identify gamut output issues and calibrate color.</p> <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p> <p>2.2.7. Compare and contrast additive and subtractive color theory (e.g., RGB, CMYK).</p> <p>2.4.2. Apply proper color profile for final output.</p> <p>2.4.3. Create single and multi-color layouts using images and formats.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p>
<p>6. Use problem-solving strategies to complete the creative process from concept development through revisions to final output.*</p>	<p>2.2.4. Identify gamut output issues and calibrate color.</p> <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p> <p>2.2.8. Compare and contrast choices using the psychology of color.</p>

- 2.3.3. Apply color using pencil, marker, dry media, wet media and digital media.
- 2.3.6. Select the material based on its characteristics (e.g., design, construction, maintenance, care of product) for the intended use.
- 2.3.7. Create a 3D design according to specific measurements using drawing, cutting, scoring and bonding techniques.
- 2.4.1. Create thumbnail and rough sketches.
- 2.4.2. Apply proper color profile for final output.
- 2.4.3. Create single and multi-color layouts using images and formats.
- 2.4.5. Differentiate between raster- and vector-based layouts.
- 2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.
- 2.4.7. Determine composition, formal qualities, scale and use of space.
- 2.4.11. Calculate finishing requirements in a layout (e.g., registration marks, bleed, slugs).
- 2.4.12. Evaluate the product in terms of the message or meaning for the targeted audience.
- 2.5.1. Select typefaces (e.g., serif, sans serif).
- 2.5.2. Apply typography kerning and leading to typefaces for readability.
- 2.5.3. Use typographic measurements in terms of picas, points, pixels and ems.
- 2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).

#### 4. Fundamentals of Illustration and Layout

**General Course Description:** Course will enable the student to employ digital drawing tools to create several illustrative styles. The student's projects will be based on a review of both traditional and digital illustrations and an exploration of contemporary illustration practices. The student will employ graphic design tools and terminology while creating projects that demonstrate the principles of effective illustration.

**Advising Notes:** This course will utilize Adobe software

**All Learning Outcomes signified with an asterisk (\*) are considered essential, and must be taught.**

**Semester Credit Hours: 3**

**Alignment:**

Learning Outcomes	Outcomes and/or Competencies are from the Ohio Department of Education's - Career Field Technical Content Standards
1. Describe the typical illustration design process from concept through publication.*	2.1.1. Describe art elements of line, value, color, shape, space, form and texture in various media that are used individually or in combination.  2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.  2.1.3. Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.  2.1.8. Identify visual hierarchy used to establish dominance.  2.2.4. Identify gamut output issues and calibrate color.

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|  | <p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.6. Replicate color across multiple mediums accommodating how color changes from the monitor to the final product (e.g., coated and uncoated papers, metallic, color-calibrated monitors).</p> <p>2.2.7. Compare and contrast additive and subtractive color theory (e.g., RGB, CMYK).</p> <p>2.2.8. Compare and contrast choices using the psychology of color.</p> <p>2.2.9. Critique the use of color schemes (e.g., primary, secondary, tertiary, analogous, complementary, triads, monochromatic) in various media.</p> <p>2.4.1. Create thumbnail and rough sketches.</p> <p>2.4.2. Apply proper color profile for final output.</p> <p>2.4.3. Create single and multi-color layouts using images and formats.</p> <p>2.4.4. Use process color and spot color separations.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.8. Apply compositional techniques, including rule of thirds, use of a grid system, 180-degree rule, framing, fill frame, pyramid, strong center of interest and aspect ratio.</p> <p>2.4.9. Create visual continuity among a variety of products.</p> <p>2.4.10. Determine how the technical characteristics of the print medium affect content and style.</p> |
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	<p>2.4.11. Calculate finishing requirements in a layout (e.g., registration marks, bleed, slugs).</p> <p>5.1.1. Load customer files on a prepress system and open in a design application.</p> <p>5.1.2. Compare the on-screen layout to the customer proof.</p> <p>5.1.3. Examine the page format for production or output issues, including pagination, bleeds, folds, imposition, total ink coverage and color separations.</p> <p>5.1.4. Examine font and picture usage for mapping, alignment, linking and resolution issues.</p> <p>5.1.5. Identify color correction factors, including assignment, gamut, dot gain, screen angles, trapping, gray balance and rich black.</p> <p>5.1.7. Confirm file accuracy through test printing.</p> <p>5.2.1. Determine the resolution of the output device.</p> <p>5.2.2. Apply color management through a calibrated system.</p> <p>5.2.3. Manage output factors, including file management and raster image processing.</p> <p>5.2.4. Interpret printers' marks.</p> <p>5.2.5. Verify that imagesetter materials and settings are correct.</p> <p>5.3.2. Apply color matching specifications for industry recognized systems.</p> <p>5.3.3. Maintain conductivity and pH levels for offset printing.</p> <p>5.3.6. Compare drying methods, including heat, oxidation, ultraviolet [UV], additives and infrared.</p> <p>5.3.8. Select ink types based on their properties and product specifications.</p>
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	<p>5.4.1. Compare and contrast color density proofs and press sheets for offset, wide-format inkjet and laser formats using visual and equipment readings.</p> <p>5.4.3. Analyze the effects of single-color and multiple-color (e.g., Pantone®, spot color) output on various substrates (e.g., paper, plastic, recycled materials).</p> <p>5.4.5. Analyze and maintain print quality controls for offset, wide-format inkjet and laser formats.</p> <p>5.4.6. Produce copies following project specifications.</p> <p>5.5.1. Identify digital printing technologies and uses, including laser, toner-based xerography, ink-based digital and wide-format inkjet.</p> <p>5.5.2. Create digital masters for production, including offset and digital ink-based printing.</p> <p>5.6.1. Use database software and text/graphics to create a variable data printing job.</p> <p>5.6.2. Plan and execute a digital job, including reading and interpreting production information on a job docket/ticket, maintaining a checklist and queuing a job.</p> <p>5.6.3. Determine the proper output device according to job specifications.</p> <p>5.6.4. Select finishing methods within the output software, including stitching, folding, booklet-making and hole-punching.</p> <p>5.6.5. Manage output product types for digital printing.</p> <p>5.6.6. Print black-and-white and process-color jobs on coated and uncoated paper.</p>
<p>2. Develop original digital illustrations.*</p>	<p>2.1.3 Determine how and when to apply the principles of design, including unity, variety, balance, movement, emphasis, visual hierarchy and proportion/scale, to communicate ideas.</p>

	<p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.4.2. Apply proper color profile for final output.</p> <p>2.4.7. Determine composition, formal qualities, scale and use of space.</p> <p>2.4.8. Apply compositional techniques, including rule of thirds, use of a grid system, 180-degree rule, framing, fill frame, pyramid, strong center of interest and aspect ratio.</p>
<p>3. Explore the digital tools in illustration.*</p>	<p>2.2.5. Select color profiles for different mediums (e.g., Red Green Blue [RGB], Cyan Magenta Yellow Key [CMYK], Pantone®, Reference Output Medium Metric [ROMM] RGB, CIE-L*a*B* color space).</p> <p>2.2.7. Compare and contrast additive and subtractive color theory (e.g., RGB, CMYK).</p> <p>2.4.5. Differentiate between raster- and vector-based layouts.</p> <p>2.4.6. Apply the components of a comprehensive layout (e.g., color scheme, font, white space, text graphics, frames, headings) according to an overall theme for the product.</p> <p>2.5.1. Select typefaces (e.g., serif, sans serif).</p> <p>2.5.3. Use typographic measurements in terms of picas, points, pixels and ems.</p>
<p>4. Research principles of illustration, using both traditional and digital examples.*</p>	<p>2.1.1. Describe art elements of line, value, color, shape, space, form and texture in various media that are used individually or in combination.</p>

	<p>2.1.2. Identify specific characteristics (i.e., positive and negative, organic, geometric, quality, weight, direction) of art elements that communicate and express ideas.</p> <p>2.1.6. Observe movement shown through repetition, pattern and rhythm.</p> <p>2.1.8. Identify visual hierarchy used to establish dominance.</p> <p>2.1.9. Recognize the use of proportion/scale.</p> <p>2.2.2. Analyze position in color theory models (e.g., color wheel, Munsell's design relationship among chroma/intensity, value/lightness and hue).</p> <p>2.2.3. Describe how changes to tint, shade, hue, value, intensity and saturation relate to color theory.</p> <p>2.2.8. Compare and contrast choices using the psychology of color.</p> <p>2.4.5. Differentiate between raster- and vector-based layouts.</p> <p>2.4.7. Determine composition, formal qualities, scale and use of space.</p> <p>2.5.7. Assess typography's effects on message delivery and aesthetics (e.g., limit families, readability).</p>
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