SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: GRPH ~~XXX~~ **282**   Department: Graphic Arts Technology

Course Title: Professional Digital Imaging Techniques   Semester: Spring Year: 2006

Objectives/Competencies

Course Objective	Competencies
1. Students will demonstrate the techniques to correct for image distortion and perspective problems, especially in architectural and product photography.	1. Demonstrate the use of the perspective transformation command in Photoshop to make an image's distorted vertical lines completely straight. 2. Demonstrate the proper use of Photoshop's Vanishing Point command to match the perspective of the surrounding image area. 3. Demonstrate the proper use of Photoshop's Lens Correction filter to fix lens flaws resulting in barrel distortion, pincushion distortion, vignetting, and chromatic aberration. 4. Demonstrate the proper use of camera angle and lenses to avoid distorting the vertical lines in an image.
2. Students will demonstrate how to process digital camera RAW image files to meet the needs of specific photographic requirements.	1. Demonstrate how to open a RAW format image in Photoshop. 2. Demonstrate how to process the image in 16-bit format to preserve the digital image's exceptionally high-quality color detail in Photoshop. 3. Demonstrate how to process a digital image relative to color temperature, white balance, color balance, exposure compen-

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	sation, contrast, and saturation to achieve the highest quality digital image available.
3. Students will demonstrate how to remove fringing artifacts from digital images without distorting the image.	1. Demonstrate how to avoid using the widest focal length camera lens to help prevent chromatic aberration. 2. Demonstrate how to stop down the camera lens aperture to reduce chromatic aberration. 3. Demonstrate how to keep high contrast image areas away from the edges of the image. 4. Demonstrate how to select the fringing in Photoshop and replace the pixels with a more appropriate color that blends in with the surrounding area.
4. Students will demonstrate professional photographic and digital retouching techniques to restore a damaged image.	1. Demonstrate how to correct color stained photographs using digital color channel selection and restoration techniques in Photoshop. 2. Demonstrate how to touch up small defects on photographs using the healing brush tool in Photoshop. 3. Demonstrate how to touch up large defective areas on photographs using the patch tool in Photoshop. 4. Demonstrate how to improve and restore a photograph's contrast using Curves in Photoshop. 5. Demonstrate how to remove noise in a digital image using noise reduction techniques in Photoshop. 6. Demonstrate how to selectively sharpen blurry image areas using Photoshop. 7. Demonstrate how to remove red-eye using Photoshop.

Course Objective	**Competencies**
5. Students will demonstrate high-quality electronic digital image compositing and stitching techniques to produce professional, seamless looking results.	1. Demonstrate making advanced selections in Photoshop using pixel-based masking techniques. 2. Demonstrate making advanced selections in Photoshop using vector-based drawing techniques. 3. Demonstrate image editing techniques in Photoshop to blend in the composited image area with the existing background image. 4. Demonstrate the process of recording multiple images during the photography process, and the many specific techniques used to blend the images together in Photoshop (exposure correction and matching, color correction, perspective correction, image resizing, resolution matching, pixel edge blurring, and image retouching).
6. Students will state the benefits and constraints of dye- and pigment-based photo inkjet printers and dye sublimation printers, and the archival qualities of those digital printing processes.	1. State that dye-based inkjet printers produce photographs that degrade quickly. 2. State that pigment-based printers can achieve archival stability using proper paper. 3. State that dye-based inkjet printers produce prints that are prone to ink running and stains when the print gets wet. 4. State that pigment-based inkjet printers produce prints that are generally waterproof. 5. State that dye-based inkjet printing systems produce prints that have brighter, more saturated, and accurate colors than pigment-based printing systems. 6. State that pigment-based inkjet printers are more expensive than dye-based inkjet printers. 7. State that dye sublimation printers produce the best photo-

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	graphic print quality but are the most expensive, and do not reproduce type with an acceptable level of quality like dye- and pigment-based inkjet printers.
7. Students will demonstrate professional photo-quality grayscale printing techniques.	1. Demonstrate how to digitally prepare an image using the Photoshop program to be printed in grayscale. 2. Demonstrate how to set specific printer features to print a grayscale image using black ink only. 3. Demonstrate how to use alternative black ink cartridges to change the warmth of the printed image. 4. Research and state specific types of inkjet paper and surfaces designed for grayscale inkjet printing. 5. Research and state specific inkjet printer models designed for the highest quality grayscale printing.
8. Students will demonstrate the production of professional photo-quality oversized photographs through the use of specialized digital image software interpolation programs.	1. State the minimum resolution of a digital image needed to allow software interpolation programs to effectively function. 2. Demonstrate the use of the Genuine Fractals image editing software to produce over-sized digital images on a variety of different image types and sizes. 3. Research and demonstrate the use of other professional image software interpolation programs currently n the market. 4. Demonstrate the process of printing oversized prints on the department's professional inkjet printer with roll paper capabilities. 5. Demonstrate the process of mounting and presentation of over-sized prints.

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9. Students will demonstrate a variety of photographic imaging techniques to improve and augment their photographic skills using digital imaging techniques with Photoshop.	1. After being presented with a variety of current topical demonstrations, many based on specific student questions, students will use their learned digital imaging skills to produce exceptional digital photographs. .