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# Image Manipulation

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National Competency Standard (ICA05):  
CUVPHI08A Enhance, manipulate and output photo images



## Objectives

This course teaches how to capture, manipulate, import, export, publish and email digital images.

## Pre-Requisites

Those attending this course should be familiar with personal computers and be competent in the use of the keyboard and mouse.

## Duration

Half-day.

## Course Outcomes

1. Identify the main graphics formats in current use
2. Use bitmap and vector images
3. Use lossless and lossy compression techniques
4. Understand the concept of bit-depth
5. Identify factors which affect the file size of the image stored on disk
6. Convert graphics files between common formats using a simple graphics editor
7. Cut, Copy and Paste
8. Crop, Resize, Rotate and Balance
9. Apply a variety of image filters available within the graphics editor
10. Import graphics into programs such as Microsoft Word and PowerPoint and manipulate them
11. Achieve appropriate file sizes for pictures emailed in a variety of common bandwidth scenarios
12. Send a picture as an email attachment using Microsoft Outlook

## Course Content

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### Course Overview

- Objectives
- Software

### Graphics Formats

- Compression
- Graphic Data Structures
  - Bitmap Greyscale Images
  - Bitmap Colour Images
  - Vector Graphic Images
  - Standard System-Independent Formats
  - Operating System Dependent Formats

### Converting File Formats

- Converting Files
  - GIF
  - BMP
  - JPEG
  - TIFF, PNG and PCX

### Basic Image Techniques

- Moving and Copying an Image
- Cropping
- Resize
- Rotate
- Balance

### Effects

- Image Effects
  - Blur
  - Emboss
  - Oil Paint
  - Edge Detection
  - Median Filter
  - Explosion
  - Pixelize
  - Sharpen
  - 3D Button
  - Red Eye Reduction
  - Sepia
  - Raindrop
  - Solarize
  - Fragment
  - Twirl

### Importing and Email

- Importing into Word
- Emailing a Picture