

# IMAGE PROCESSING FOR SCIENTIFIC ILLUSTRATION

## INTRODUCTION TO THE BASICS

What we will learn:

- What is vector graphic, what is raster graphic and how they differ from each other
- What are the benefits of using vector/raster
- Color spaces: What is RGB? What is CMYK? How they work and when to use them.
- What are resolution, pixel size and pixel density? What is the difference between dpi and ppi?
- File formats: basic file formats and their differences

## BASICS OF COREL DRAW

What we will learn:

- In this section we'll go through and try the tools in Corel Draw; what they do and how to use them efficiently
  - Pick tool
  - Grouping
  - Object manager and order (Layers)
  - Alignment and guides
  - Mirror tool
  - Copy, paste and duplicate
  - Path tool
  - Vector drawing tools: Pen, bezier, freehand
  - Shape tool
  - Different shapes
  - Weld tool / crop tool
  - Text tool
  - Grid tool

*Examples of how & when to use these tools*
- Other useful functions:
  - Object properties: controlling strokes and fills, coloring and color effects, transparency
  - Step and repeat
  - Bitmaps in Corel Draw
  - Saving and exporting. Making a pdf for print, how to set correct color profile, resolution, bleeds and crop marks

## DESIGNING AND ILLUSTRATING

What we will learn:

- Basic guides and tips for succesful design and illustration
- Typography: basic theory on fonts and making text look appealing. What is good typography, what are letterforms, how to choose your fonts.

## COREL PHOTO

What we will learn:

- What is color depth and what are the differences between 1bit, 2bit, 4bit, 8bit, 16bit, 24bit and 48bit images.
- More on raster file formats, document size and resolution
- How to use layers
- Making adjustments and color corrections
  - Levels
  - Hue/Saturation, white balance
  - Curves
  - Brightness/Contrast
  - Exposure
  - Color hue overlays
- Overview of the tools