

Images: Preparing your images for the web



The small print

Prerequisites

Time in the workshop is precious – it is an opportunity for you to interact with the workshop leader and other participants through questions and discussions and to share your experiences and concerns. To make the most of this time we sometimes ask you to carry out learning activities ahead of the workshop so that everyone comes into the class with the same basic knowledge. We keep this prior learning to a minimum and often make use of online videos. Online videos provided through LinkedIn Learning can be accessed free of charge by University members anytime, anywhere, through a browser or app.

Your course booking will tell you if any prior learning activity is required. If you don't have an environment where you can do this learning, you can come along to one of our LinkedIn Learning sessions. These are a quiet space where you can work through videos or other workshop resources.

If you arrive for a workshop without having done the prior learning, the workshop leader may suggest that you come back on another session.

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About the workshop designer

Carl Wenczek is a very experienced architectural illustrator and an expert in 3d modelling and 2d imaging. He is a Director of his own small company and over the last 21 years has built long lasting relationships with his clients, creating 100's of illustrations and helping them convey their ideas and designs.

Running parallel to his commercial work, Carl is also a part-time lecturer in multimedia and has been teaching at Oxford University's IT Services for the last 20 years, delivering courses in Photoshop, Illustrator, InDesign, After Effects, Blender, GIMP, Inkscape and digital photography.

Carl also coaches Paddlesport (kayaking, canoeing and stand up paddling) and Indoor Climbing. These sports are often coached in demanding and dynamic environments and require a calm persona!

Revision history

Version	Date	Author	Comments
1.0	February 2024	Carl Wenczek	First version

About this workshop

What you will learn

This course guides people through the process of optimizing and saving images for the web. The course will broadly cover 3 subject areas: types of images; resizing images; and saving images. There will be a mixture of explanation, demonstration and hands-on tasks.

What you need to know

You do not need any prior knowledge of the software used during this workshop.

This workshop will cover:

- Selecting appropriate images and image formats. This includes usage scenarios, and image make up and formats.
- Cropping, resizing and sharpening images.
- Use of colour profiles and saving images.

If you need to review these activities, LinkedIn Learning is a great place to get guidance. There is an activity with relevant videos in the IT Learning Portfolio: visit skills.it.ox.ac.uk/it-learning-portfolio and search for “Images” or “Images activity”.

The resources you need

Sample documents that you can use to experiment with will be made available, but you may like to bring along your own.

The resources for most workshops, including any pre-course activity, are in the IT Learning Portfolio: visit skills.it.ox.ac.uk/it-learning-portfolio and search for “Images”.

Unless you have been told otherwise, in classroom workshops there will be a computer available for you to use with the following applications installed:

- GIMP
- Adobe Photoshop
- Adobe Bridge
- Adobe Acrobat Reader
- Microsoft Word
- A web browser such as Google Chrome

You can use your own computer with your preferred apps installed if you want to – just bear in mind that I am not an expert in every app (although I am sure that between us we will be able to sort out most problems!)

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Further information

Correcting and Improving your images

A digital workflow

1. Evaluate images
2. Rotate, crop and correct perspective
3. Reduce noise and repair blemishes
4. Capture Sharpening
5. Tonal range adjustment
6. Colour balance
7. Saturation
8. Selective correction
9. Fine tuning of colours
10. Adjust mid-tone contrast
11. Resize image for final media
12. Sharpen for final media
13. Save

Preparing images for the web

Learning Objective 02 - Scenarios

We use images for a variety of different purposes: for websites, social media, email marketing, PowerPoint presentations, newsletters, magazines, research papers, posters and flyers, and so on.

These uses, or **intents**, can be broadly grouped into two categories:

- Screen based
- Print based

Each intent requires the use of specific file formats such as .tiff, .jpg, .gif, .png, .pdf, .eps, .wmf and so on.

For websites and social media we use either JPG, PNG or GIF

JPG

For complex images with no text, such as digital photographs.

PNG

For text, graphics with hard edges, and elements that require transparent backgrounds like logos.

GIF

GIF files will load quicker than PNG files however they are limited to 256 colours. Use GIF for elements like solid color buttons or banners, and simple solid colour elements that require transparency. GIF files can utilize animation, so you can create graphics with a short looping or single play animation.

Task

Examine a website and discuss with your teacher the different file formats that might have been used.

<https://www.mohash.co/?ref=onepagelove>

<https://www.britishcanoeing.org.uk/>



Preparing images for the web

Learning Objective 03 - Image makeup and file formats

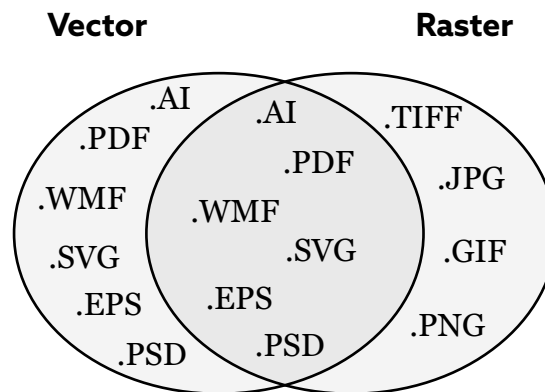
Image makeup

Images can be made of pixels (**raster**) or generated mathematically (**vector**).

Raster images are resolution dependent whereas vector images are resolution independent.

For websites and social media we typically use raster images.

File formats



Images can be uncompressed, or compressed to reduce file size.

File format	Compression	Colour	For web?
TIFF	Yes, lossless	RGB and CMYK	No
PNG	Yes, lossless	RGB	Yes
JPEG	Yes, lossy	RGB	Yes
GIF	Yes, lossy	RGB (256 colours)	Yes

Task

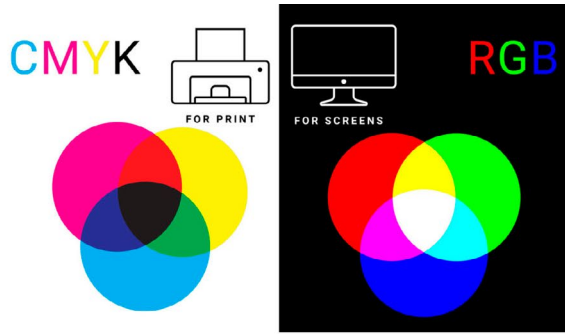
Save a vector graphic as a JPG and a PNG to compare the difference.



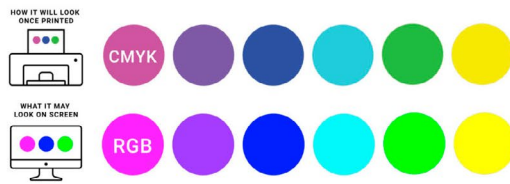
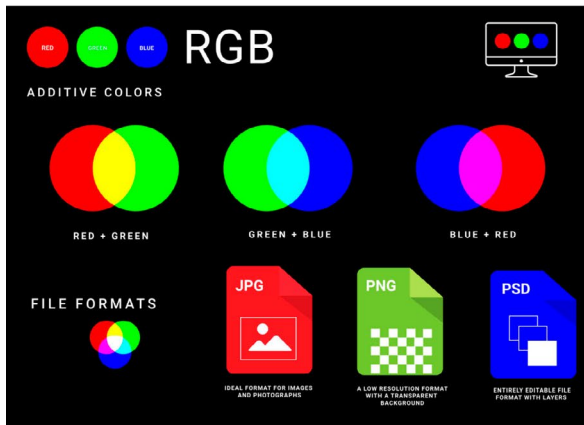
Preparing images for the web

Image makeup

Images typically come in 2 colour formats, **RGB** (screen, web, social media) and **CMYK** (print). We will revisit this later when we look at colour profiles.



To ensure your image is using RGB colours choose **Image>Mode** for both Photoshop and GIMP



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Learning Objective 04 - Cropping images

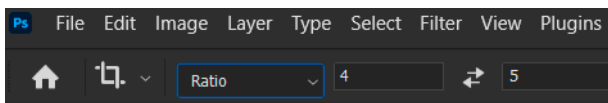
For a website you may want to crop an image without being too concerned about using a specific aspect ratio. You may just crop by eye and then resize the image later.


For social media there are defined aspect ratios for different uses on the various apps and platforms.

Cropping images to a specific aspect ratio for social media

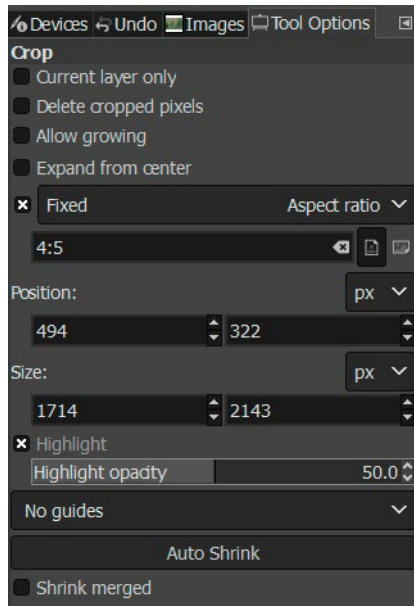
- For **Photoshop** choose the **Crop tool** 

Then, from the **Options panel** choose Ratio and set your ratio.



- For **GIMP** choose the **Crop Tool** 

Then from the **Tool Options panel** choose Aspect ratio, ensure the Fixed box is checked and set your ratio.



For a guide to social media image sizes and aspect ratios visit:

<https://blog.hootsuite.com/social-media-image-sizes-guide/>



Preparing images for the web

Learning Objective 05 - Image size for the web and social media

For the web and social media

Pixel dimensions only.

"Unoptimized images slow down websites. Slow websites = bad user experience, lower chances to rank in Google searches and ultimately less inquiries and customers."

When it comes to displaying images on a screen you need to be aware of the size of the screen or monitor you will be using to display your images. For example, to fill a monitor that is 1920 by 1080 pixels in size so, you will need an image that is 1920 by 1080 pixels in size.

Date	Other High	1920x1080	1366x768	1280x1024	1280x800	1024x768	Lower
January 2023	47.2%	18.4%	18.2%	1.1%	1.0%	0.7%	13.4%

https://www.w3schools.com/browsers/browsers_display.asp

- For Photoshop use the **Image Size** command
Image>Image Size...
- For GIMP choose **Scale Image**
Image>Scale Image...

For a more thorough explanation and guide visit:

<https://flothemes.com/flothemes-image-sizes/>

For a guide to social media image sizes and aspect ratios visit:

<https://blog.hootsuite.com/social-media-image-sizes-guide/>



Learning Objective 06 - Sharpen an image

Sharpening is a technique for increasing the apparent sharpness of an image. It can be used to emphasize texture and draw viewer focus. Sharpening needs to be carried out carefully because if it is applied too aggressively artifacts may appear or an image can appear too sharp. For more information see:

<https://www.cambridgeincolour.com/tutorials/image-sharpening.htm>

Capture Sharpening

Reduce blurring caused by the source of your image e.g. camera sensor, camera lens

Creative Sharpening

Applied selectively and for artistic purposes

Output Sharpening

Appropriate to final media and to offset any softening caused by resizing an image

Common settings

Radius: Controls the size of the edges you wish to enhance, where a smaller radius enhances smaller-scale detail. Choose a radius setting that is comparable to the size of the smallest detail within your image. Try starting at a value of 1.

Amount: Controls the overall strength of the sharpening effect, and is usually listed as a percentage. Try starting at a value of 100%.

Threshold (Masking): Controls the minimum brightness change that will be sharpened. This can be used to sharpen more pronounced edges, while leaving more subtle edges untouched. It is especially useful to avoid sharpening noise.

- For Photoshop use **Smart Sharpen** or **Unsharp Mask** filters (**Filter>Sharpen>**).
- For GIMP use the **Sharpen** or **Unsharp Mask** filters (**Filters>Enhance>**).



Learning Objective 07 - Colour profiles

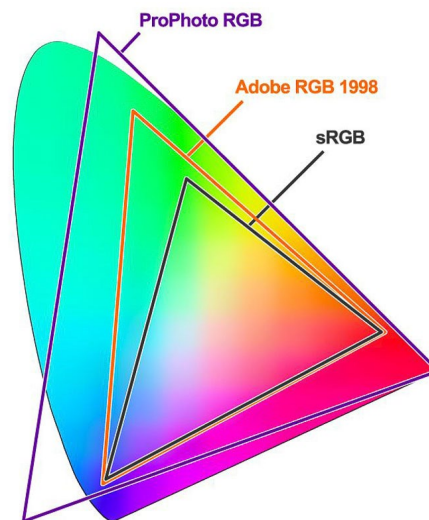
Colour profiles define the colours we capture with our cameras and see on our displays. They control what colours are used and help provide consistency between devices.

Our eyes can see far more colours than a camera can capture or a monitor can display. This means we need some way to define the subset of colours that cameras can capture and monitors can display. We also need a way to keep colours consistent between the two. A certain shade of red that a camera captures should look the same shade of red on a monitor. This is where colour spaces and colour profiles come in.

With the RGB color model, we can display (or capture) 16.7 million colours. But the question is, which 16.7 million colours to use? This is where a colour profile comes in.

sRGB

sRGB is the standard profile used on the web.



For more information visit:

<https://www.howtogeek.com/343900/what-is-a-color-profile/>



Converting between colour profiles

Adobe RGB

The Adobe RGB colour profile is designed to display a wider range of the visual spectrum than sRGB. It's mainly used by professional photographers and most high-end cameras can capture Adobe RGB.

If you have captured your image using a colour profile other than sRGB, such as Adobe RGB, you will need to convert it to sRGB before using it on the web or on social media.

- In Photoshop we can use **Edit>Convert to Profile...**
- In GIMP use **Image>Color Management>Convert to Color Profile...**

In both GIMP and Photoshop you will have 4 **Rendering Intents** to choose from: Perceptual, Saturation, Relative Colormetric, and Absolute Colormetric.

A Rendering Intent is a mathematical method of mapping colours from one colour space to another. For a more indepth explanation of Rendering Intents go to:

https://helpx.adobe.com/photoshop-elements/kb/color-management-settings-best-print.html#main-pars_header_1

For best results choose either Perceptual or Relative Colormetric.



Preparing images for the web

Learning Objective 08 - Save your images

- For Photoshop use **File>Export>Export As...**
- For GIMP use **File>Export As...**



Learning Objective 09 (Optional) - Create Batch processes

Sometimes you might have a lot of images you need to edit. You may need them all at a specific size or want them all to follow a specific naming convention. Rather than editing them one by one you might want to consider setting up a batch process to do the work for you.

There are many standalone Batch Image Processors available. However, Photoshop comes with this feature included in the form of Actions and the Batch command.

For Photoshop:

- Use the **Actions** panel.

A Photoshop Action allows you to record a series of steps and then play the sequence back to apply those effects on a single image or a batch of files.

- To run an Action on a series of images choose **File>Automate>Batch**.

For GIMP:

- Use the Batch Mode, see https://www.gimp.org/tutorials/Basic_Batch/



Further information

Getting extra help

Course Clinics

The IT Learning Centre offers bookable clinics where you can get pre- or post-course advice. Contact us using courses@it.ox.ac.uk

Study Videos from LinkedIn Learning

On our website, you will find our collection of self-service courses and resources. This includes providing LinkedIn Learning video-based courses free to all members of the University. Visit skills.it.ox.ac.uk/linkedin-learning and sign in with your Single Sign-On (SSO) credentials.

Some courses recommend pre- and/or post-course activities to support your learning. You can watch the online videos anywhere, anytime, and even download them onto a tablet or smartphone for off line viewing.

About the IT Learning Portfolio online

Many of the resources used in the IT Learning Centre courses and workshops are made available as Open Educational Resources (OER) via our Portfolio website at skills.it.ox.ac.uk/it-learning-portfolio.

Find the pre-course activity for this course in the IT Learning Portfolio: visit skills.it.ox.ac.uk/it-learning-portfolio and search for “Images” or “Images activity”.

About the IT Learning Centre

The IT Learning Centre delivers over 100 IT-related teacher-led courses, which are provided in our teaching rooms and online, and we give you access to thousands of on-line self-service courses through LinkedIn Learning.

Our team of teachers have backgrounds in academia, research, business and education and are supported by other experts from around the University and beyond.

Our courses are open to all members of the University at a small charge. Where resources allow, we can deliver private courses to departments and colleges, which can be more cost-effective than signing up individually. We can also customize courses to suit your needs.

Our fully equipped suite of seven teaching and training rooms are usually available for hire for your own events and courses.

For more information, contact us at courses@it.ox.ac.uk.

About IT Customer Services

The IT Learning Centre is part of the Customer Services Group. The group provides the main user support services for the department, assisting all staff and students within the University as well as retired staff and other users of University IT services. It supports all the services offered by IT Services plus general IT support queries from any user, working in collaboration with local IT support units.

The Customer Services Group also offers a data back-up service; an online shop; and a computer maintenance scheme. Customer Services is further responsible for desktop computing services – for staff and in public/shared areas – throughout UAS and the Bodleian Libraries.