Basic Principles of Night and Low Light Photography

- A tripod is an essential piece of equipment for quality results.
- A fast lens, allowing for wide open apertures, and image stabilisation are advantageous.
- Use the lowest ISO possible, though compromise is sometimes necessary.
- Onboard flash is rarely useful.
- Adjust the white balance to compensate for poor or mixed lighting and achieve more accurate colour.
- Bracketing is the most useful technique, particularly for beginners. Check your camera manual for your bracketing options.
- Use the histogram to choose the best exposure possible.
- For better post processing options shoot in RAW format.

Links FYI

Night and Low Light - PictureCorrect
http://www.picturecorrect.com/tips/night-low-light-photography/

Digital Night US
http://www.digitalnight.us/index.php

Chromasia - Photoshop for night photography’
tutorial http://www.chromasia.com/tutorials/online/pfnp_info.php

Secrets of Digital Photography Video Webcast
http://www.oreillynet.com/pub/e/1143

Paxton Prints Stunning Night time Landscapes
http://paxtonprints.com/index.php?x=tutorial_night_landscapes

The Nocturnes
http://www.thenocturnes.com/index.html

School of Photography - Free Night Photography Lesson
http://www.schoolofphotography.com/courses/free-night-photography-lesson.html
Photographing Dawn/Sunrise and Dusk/Sunset

- Scout the location in daylight - Download or watch the news for predicted sunrise and sunset times in the area.
- Arrive before dawn or dusk begins to prepare - there is a very narrow window of around 20 mins to capture the best light.
- For a strong composition, use the Rule of Thirds to place the horizon lines, look for a point of interest (silhouette or foreground).

- For compact camera's try the sunrise/sunset scene mode. This automatically adjust the settings to Flash-off, Shutter speeds- use slower speed than normal, Aperture e-ae, exposure compensation-on Focus -normal

- On automatic settings, the camera is likely to underexpose the scene to try and compensate for the lack of light and the strong colours.
- A tripod will increase your chances of getting a sharp shot, particularly combined with a longer exposure. Consider using a cable release or timer.
- Bracketing will increase your chances of getting a correct exposure
- Meter to the side of the sun (excluding it from the frame) using a spot or center weighted reading. Generally the aperture is likely to need 1-2 stops above the reading.
- Adjust your white balance for sunlight/daylight to get a more accurate color. On auto it will likely attempt to neutralise the colours. A polarising lens can be useful when photographing water at sunset/sunrise but it will require an even larger aperture setting to account for less light passing through to the lens.
- Keep ISO as low as possible for smoother graduations of colour.
- Be aware of unwanted lens flare - don't point the lens directly at the sun.

Post processing:
- Saturation, vibrance and filters can enhance the colours
- Add light rays for dramatic effect eg to spotlight a point of interest
- Try creating a High Dynamic Range Image.
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Photographing Weather

Storms
- Scout the location - make sure there is some sort of shelter from the elements or bring your own.
- Protect your equipment with waterproof gear
- A tripod with cable release is ideal but you may need to move quickly and be wary of wind moving the tripod and blurring shots.
  - Try the Night Landscape scene mode on your compact camera. Settings are adjusted to: Flash- off, Shutter speeds- use slower speed than normal, Aperture -auto, Focus- set to infinity
- Expose for the drama in the sky - bracket to ensure you capture all the detail
- You might have to adjust the exposure compensation on the camera to make the picture a little darker so it doesn't over expose the detail on the cloud.
- Consider foreground interest carefully and if the weather is your subject keep the horizon to the lower third.
- Watch for light from - breaks in the clouds, lightning and environmental lights (eg lighthouse beacons, ship lights, street lights. Be prepared for bursts of light and take advantage of the spot light effect they may give.
- Try changing the white balance to cloudy to add some warmth
- Keep ISO low to avoid noise in the clouds
- Post processing: using Dodge and burn tools can add extra drama to the scene particularly the clouds.

Fog and Mist
- Protect your equipment from the moisture associated with mist and fog
- Mist is generally better for photography as it is thinner and more delicate. It burns off quickly however so you need to be prepared.
- The light is most often very diffuse and directionless.
- Scenes in the fog are also much more dimly lit -- often requiring longer exposure times than would otherwise be necessary. In addition, fog makes
the air much more reflective to light, which often tricks your camera's light meter into thinking that it needs to decrease the exposure. Just as with photographs in the snow, fog therefore usually requires dialing in some positive exposure compensation.

- Backgrounds recede into fog and mist so images need a strong foreground point.
- Try and find a point above the mist/fog for a creative image
- Higher ISO values can be used with fog and mist as it enhances the ethereal feel.
- Post processing: contrast and saturation often suffers in these conditions so consider tweaking these later.

**Lightning**

- Most importantly set up in a safe area. Risks are real, particularly from higher vantage points and in wide open spaces.
- As soon as a lightning storm seems likely, head for your chosen place to photograph from. For lightning you need to be in front of the storm to avoid rainfall and catch the clear air strikes, watch the storm and direction of travel. It is possible to anticipate where lightning activity should occur most by picking the areas of greatest instability. Rain shafts often are an indicator of this. Look for an area where the camera is not going to be too affected by nearby lights which can ruin the exposures. Lightning as dusk approaches is ideal.
- It is still important to consider composition of the skyline.
- A tripod is essential, make sure it is sturdy and be aware of any wind.
- With a compact try the fireworks scene mode, continuous or burst mode may also capture strikes in a very violent storm.
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- Use long exposures (20-30 seconds) without waiting for strikes to increase your chances of capturing strikes. If the storm is more violent you can use shorter speeds.
- Use the Bulb setting to increase exposure times and capture multiple strikes.
- Use the slowest ISO setting possible as noise will creep into darker areas spoiling the image.
- Set focus to infinity
- The F4- F7.1 range is likely the best, but experiment with your camera, if the lightning is very far away the aperture will need to be much wider
- Post processing - combine several shots into one exposure to create an effective montage of multiple strikes
Moon and Stars

- Use a tripod to avoid shake.
- Use the lowest ISO possible when including a lot of sky.
- If the moon is your subject, move away from ambient lighting as much as possible.
  - Set focus to infinity
  - Fill the frame with as much of the moon as possible with a telephoto lens (200mm - 400mm)
  - Spot meter on the moon
  - Bracket the exposure to ensure you capture the highlights
- If the moon is part of your scene, compose for the best elements of the scene. Use a lens (focal length) that will compress the scene so the moon does not shrink too much.
- Consider taking two images of the scene - one of the moon and the second of the scene and then digitally combine the two
- For star trails, you need clear sky away from ambient light.
- Use the bulb setting to take exposures between 30 mins to a few hours dependent upon the result you want. The longer the exposure the longer the trails.
Urban Landscape

- Cityscapes are usually all about location, look for high places that gives you a vista over the city. Lock the focus to infinity.
- Choose the time of day carefully - you still want some color in the sky so dusk is the most effective - particularly as the sky becomes deep blue.
- With cityscapes, use a tripod so you can keep ISO low to avoid introducing noise into the sky. For buildings noise is less crucial as they are often textured anyway.
- Try the Night Landscape scene mode on your compact camera. Settings are adjusted to: Flash- off, Shutter speeds- use slower speed than normal, Aperture -auto, Focus- set to infinity
- Be careful of over-exposure when photographing cityscapes, with so much light is can be easy to blow out.
- If using a tripod at street level, set up out of the flow of people.
- A longer exposure can help record the majority of details in a scene, while shorter shutter speeds are more vulnerable to blur and will exaggerate the contrast between light and shadow. Bracketing can help resolve this.
- Take advantage of environmental lighting to pick out details or focal points of a building or scene.
- Because the lighting is often mixed, it may pay to experiment with white balance based on the dominant light source, however competing color temperatures can add to the atmosphere.
- Add extra lighting to buildings with car headlights or several powerful torches.
- Be wary of light flare when photographing into lights - star bursts can be attractive while large blown out spots will not.
- For neon lighting, shoot as the sky is darkening and fill the frame if you are concentrating on the signage.
- Water in urban landscape shots including rivers, fountains and even puddles can not only help reflect additional light into the scene but create a point of interest with reflected landscape features.
- People are likely to be part of any city streetscape so decide what part they will play. Allow the people to blur to show movement across the scene with an exposure of around 2- 5 seconds long or increase the exposure for a more than a minute so that most people will not register at all as they move across the frame.
Light Trails
- Scout a location where the composition is effective and traffic plentiful, bends in the road/s give shape. Look for a good perspective - most often looking down on the scene will allow you to capture longer trails.
- Most importantly, choose a sensible place to set up.
- Trails coming towards you will be white while those moving away will be red. Blinkers and traffic lights can add interesting effects.
- Be wary of ambient lighting - bright building lights can become very overexposed or create flares.
- If you plan to include buildings, ensure you expose for them so they aren’t distorted by any color shifts.
- Use a tripod as you will need long exposures of 15 secs or more to capture the light trails depending on the speed and flow of traffic. If using a bridge as a vantage point be aware of shake caused by wind or heavy vehicles.
- Use the bulb setting to control the length of time of the exposure.
- Use a low ISO setting
- If your camera is having trouble focusing, turn auto focus off and either lock at infinity or at a point of interest.
- Other lighting sources can create light trails such as sparklers, torches in fact any moving light.
Fireworks
- Often the most difficult part is finding a vantage point where crowds won’t be in your way - arrive early to get the best position or find a higher point. Pay attention to the wind direction so you don’t get buried in smoke.
- The initial fireworks are often the most important to capture before smoke starts to obscure them - especially in case of low wind. Clear nights with a light directional breeze are best for photographing fireworks.
  - With a compact try the Fireworks scene setting that defaults to: Flash- off, Shutter speeds- use slower speed than normal, Aperture -auto, Focus- set to infinity
  - Focus set to infinity, turning off autofocus.
- A tripod will result in much better images than those hand held. Being able to capture the full burst (fireworks take between 1 and 5 second to bloom fully), or even multiple bursts, with a longer exposure will result in better colours.
- Use the bulb setting for extended exposures but be wary of over exposure if the shutter is open too long or ambient light is too strong. You don’t want to wash out the colors so check the image preview and make adjustments if necessary.
- A wider aperture (smaller f-number) will make brighter trails and a smaller aperture will make darker trails. That’s because a wide aperture lets in more light than a small aperture. Since fireworks are intensely bright you’ll want to start with a smallish aperture of around f/8.
- Use the remote control to better anticipate the bursts
- Keep ISO as low as possible, grain will ruin the shots.
- Post production: montage several firework bursts to create a huge display. You can also montage the fireworks with a skyline or scene for effect.
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Interior Lighting
- A tripod isn’t always practical, particularly at a party when you are taking
candid shots.
  - For compacts, try the preset Indoor/Party scene modes.
    Indoor Party mode uses Flash-on with red eye reduction,
    Shutter speeds—slower speed than normal are used,
    Aperture—auto, Focus—normal
  - Museums often do not allow any flash and most
    compacts have a Museum Scene mode. This mode uses Flash-off, Shutter speeds—fast to avoid camera shake, Aperture—auto,
    BSS—on
  - If possible boost interior lighting with additional lighting, try reflectors or a turn
    on additional lights.
  - You can use the onboard flash but consider its range and position yourself
    accordingly, bounce flash is much more effective.
  - The faster the shutter speed, the more pronounced the flash effect will be.
  - Alter the white balance according to the indoor light source to reduce color
    casts (eg tungsten/incandescent bulbs create a yellow/orange colouring while
    fluro’s can cause a shift to green
  - Keep the ISO as low as possible, particularly for portraits

Candlelight
- Keep the composition simple, fill the frame.
- Have enough candles to light the subject without overpowering it. Watch the
  distances between the subject and the light.
- Use a (gold) reflector if additional light is needed, or mix with natural ambient
  light.
- A tripod will allow for longer shutter speeds - but watch the movement of the
  flames which are vulnerable to
  movement.
- Choose the widest aperture setting
  you have to use a faster shutter
  speed if you need to hand hold.
- Don't adjust for the color cast - it is
  part of the atmosphere.
- Be wary of overexposing the
  flames so they don’t burn out.
- Use a low ISO to avoid noise in
  the shadows
Concerts etc

Find yourself the best position in relation to the stage. Get as close as possible. Focus manually because the subjects are likely to be moving too rapidly and the dim light will strain it. The laser assist is also likely to annoy a few people. You are unlikely to be able to use a tripod but have a small one on hand just in case. Use any lens stabilisation you have. Action in low light is easier to capture with a fast, wide aperture lens so if you have one, use it. A wide angle lend can be useful to catch the entire performance. Find out if you can use flash in advance. On board flash with its range of about 3 meters is unlikely to be helpful but a bigger flash or flash gun could be. Take advantage of any ambient light and position yourself carefully to get the most light on the subject. Be careful of spotlights behind the performers shining directly into the camera. Work out if there is any pattern to changing lights and take advantage of them. Adjust the ISO to get a balance between speed and aperture. It's likely something will have to be sacrificed unless you have really great equipment so decide how much noise you are willing to tolerate (400 and up), in order to get the sharpness you want. For a music concert some blur can be creative - try the slow synch flash for creative results if possible.