 INTRODUCTION TO PHOTOGRAPHY

TIPS AND TECHNIQUES FOR BETTER PHOTOGRAPHY
PHOTOGRAPHY

- GREEK FOR “PAINTING WITH LIGHT”
- CAN BE CONSIDERED BOTH AN ART AND A SCIENCE
  - PHOTOGRAPHY IS A SCIENCE, BECAUSE THERE ARE BASIC PRINCIPLES OF PHYSICS THAT GOVERN SUCCESS
  - PHOTOGRAPHY IS ART BECAUSE ITS BEAUTY IS SUBJECTIVE
FIRST PHOTOGRAPH TAKEN BY JOSEPH NICÉPHORE NIÉPCE IN FRANCE IN 1826, ON A BITUMEN COATED ALUMINUM PLATE
EXPOSURE
STOPS

- The amount of light that strikes the film/chip is measured in stops and is also known as exposure value (Ev).
- A difference of 1 stop is a doubling or halving of the light making the image.
- A stop is used to measure the differences in Ev of apertures, shutter speeds and film speeds.
- “Fast” means the camera can expose a photo quickly.
FILM SPEED
Film Speed

- **Film Speed** is a measure of the sensitivity of the film or sensor in a camera.
- It is measured in values using an International Organizations of Standards (ISO) number. Used to be measured in American Standards Associations (ASA) numbers.
- ISO numbers are used in both film and digital cameras.
FILM SPEED

- ISO NUMBERS COME IN A WIDE RANGE, BUT STANDARD NUMBERS ARE 50, 100, 200, 400, 800, 1600, AND 3200

- ISO NUMBERS ARE LINEAR IN THEIR RELATIONSHIP

FILM SPEED

LOW ISO

HIGH ISO
SHUTTER SPEED
SHUTTER SPEED

- CONTROLS THE AMOUNT OF TIME THE SHUTTER OR CURTAIN IS OPEN
- SHUTTER SPEED IS MEASURED IN FRACTIONS OF SECONDS
- DEPENDING ON THE CAMERA, IT MAY SHOW THE SHUTTER SPEED WITHOUT THE NUMERATOR, I.E. 250 INSTEAD OF 1/250
SHUTTER SPEED

- Common shutter speeds are 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500, 1/1000
- A doubling or halving of the time value (Tv) represents one stop of EV
- A fast shutter speed freezes the action of an image
- Conversely, a slow shutter speed blurs the action of an image
SHUTTER SPEED

FAST SHUTTER SPEED

SLOW SHUTTER SPEED
SHUTTER SPEED

FAST SHUTTER SPEED

SLOW SHUTTER SPEED
APERTURE

Aperture
APERTURE

- APERTURE IS THE SIZE OF THE HOLE IN THE DIAPHRAGM THAT ALLOWS LIGHT INTO THE CAMERA

- THE LARGER THE HOLE, THE MORE LIGHT THAT ENTERS THE CAMERA IN A GIVEN TIME

- APERTURE VALUES (Av) ARE MEASURED USING F-STOPs, SHOWN AS f/# (I.E. f/16)
APERTURE

- The image at left shows common f-stop values and how they appear.

- A change of 1 f-stop doubles or halves the light entering the camera.

- Smaller f-numbers represent wider apertures, and larger f-numbers are smaller apertures.
APERTURE

- The Av controls the amount of depth of field in an image.
- The wider the aperture, the more shallow the depth of field, and vice versa.
**Av & Tv TOGETHER**


- **CONVERSELY, THE SLOWER THE SHUTTER SPEED, THE SMALLER THE APERTURE NEEDS TO BE**

- **FOR ANY IMAGE, THERE ARE A NUMBER OF COMBINATIONS THAT WILL MAKE A CORRECT EXPOSURE**

<table>
<thead>
<tr>
<th>f-stop</th>
<th>1.4</th>
<th>2</th>
<th>2.8</th>
<th>4</th>
<th>5.6</th>
<th>8</th>
<th>11</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shutter speed</td>
<td>1/1000</td>
<td>1/500</td>
<td>1/250</td>
<td>1/125</td>
<td>1/60</td>
<td>1/30</td>
<td>1/15</td>
<td>1/8</td>
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LIGHTING

- Light is the essential ingredient of photos
- One of the skills that separates photographers from snap shooters is the ability to solve lighting problems
- There are 2 primary factors to consider for light: direction and colour
LIGHTING - DIRECTION

- The direction the light comes from can make the image seem flat or 3-dimensional.
- Front lighting is easy to photograph, but images are generally flat.
- Top lighting, such as from the sun overhead, also makes the image flat, and shadows are short and dark.
- Side lighting will emphasize texture and contours, and create long shadows.
LIGHTING - DIRECTION

FRONT LIGHTING

SIDE LIGHTING

TOP LIGHTING

BOTTOM LIGHTING
LIGHTING - COLOUR

- **THE COLOUR OF LIGHT IS MEASURED BY TEMPERATURE IN KELVIN (°K)**
- **THE COLOUR OF NATURAL LIGHT CHANGES THROUGH THE DAY**
- **HUMANS RESPOND PSYCHOLOGICALLY TO DIFFERENT COLOURS, THEREFORE THE COLOUR OF A PHOTO WILL AFFECT EMOTIONAL RESPONSES**
- **LIGHT THAT IS IN THE REDS, ORANGES AND YELLOWS IS SAID TO BE “WARM”. CONVERSELY, “COOL” LIGHT IS BLUE IN TONE**
LIGHTING - COLOUR

WARM LIGHTING

COOL LIGHTING

TIPS AND TECHNIQUES FOR BETTER PHOTOGRAPHY
LIGHTING - COLOUR


- TYPICAL WHITE BALANCE SETTINGS OF A CAMERA INCLUDE: TUNGSTEN, FLORESCENT, SHADE, SUNNY, CLOUDY, FLASH, AUTO AND MANUAL

- FILTERS CAN ALSO BE USED TO AFFECT THE COLOUR OF LIGHT IN THE IMAGE
LIGHTING - COLOUR

FLASH/MID-DAY

TUNGSTEN

FLORESCENT

CLOUDY
CAMERA SHOOTING MODES

- ALL DIGITAL CAMERAS HAVE VARIOUS MODES FOR SHOOTING

![Image of camera modes]

- **P, Tv, Av, M Mode**: You can make settings such as the shutter speed and aperture value in order to take the picture you want.
- **Auto Mode**: You can leave it to the camera to select settings.
- **Movie Mode**: For shooting movies.
- **Easy Mode**: You can shoot just by pressing the shutter button.
- **Scene Mode**: The camera can automatically select all settings appropriate for the conditions so that you can take images just by pressing the shutter button.
CAMERA SHOOTING MODES

- **Scene Modes** take the guess work out of setting proper exposure
  - Modes include presets for taking photos in a variety of settings such as at night, on the beach, or snow, or for portraits

- **Manual Modes** allow for more creative control
  - A greater understanding of camera settings is required
COMPOSITION
LENS

THE LENGTH OF A LENS IS MEASURED IN MILLIMETRES (mm), OR EQUIVALENT FOR POINT-AND-SHOOT CAMERAS

LOW NUMBERS ARE CONSIDERED WIDE LENSES, WHILE HIGH NUMBERS ARE CONSIDERED LONG LENSES

- A WIDE LENS, I.E., 18mm, IS USEFUL FOR LANDSCAPE PHOTOS
- A LONG LENS, I.E., 300mm, IS USEFUL FOR CLOSE-UPS OF WILDLIFE

HUMAN EYESIGHT IS EQUIVALENT TO ABOUT 50MM
DEPTH OF FIELD

- DEPTH OF FIELD (DoF) IS THE “ZONE OF ACCEPTABLE SHARPNESS”
- DOF IS CONTROLLED BY APERTURE AND DISTANCE TO SUBJECT
  - THE CLOSER THE SUBJECT, THE SMALLER THE DoF
  - THE WIDER THE APERTURE, THE SMALLER THE DoF
DEPTH OF FIELD

DISTANT - DEEP DoF

CLOSE - SHALLOW DoF
DEPTH OF FIELD

SMALL APERTURE - DEEP DoF

LARGE APERTURE - SHALLOW DoF
THE RULE OF THIRDS

- The “Rule of Thirds” states that when composing your photo, place the centre of interest at a junction of the lines that trisect the image.
THE RULE OF THIRD

- Also, when composing landscape shots, the horizon line should be on one of the intersecting lines.
FRAMING

- Framing is using a foreground object to “frame” the subject of the photo.
- The frame should be appropriate to the subject.
- The frame should have its own aesthetic value.
- Render the frame sharply, or blur it away.
FRAMING
FILL THE FRAME

IF YOUR PICTURES AREN’T GOOD ENOUGH, YOU’RE NOT CLOSE ENOUGH.
ROBERT CAPA, WORLD WAR II PHOTOJOURNALIST

- IF YOU CAN’T GET CLOSER TO YOUR SUBJECT, USE A LONGER LENS TO FILL THE FRAME

- FILLING THE FRAME REFERS TO THE PRIMARY SUBJECT, NOT EXTRANEOUS OBJECTS
FILL THE FRAME
PORTRAIT TECHNIQUES

- THE SUBJECT SHOULD FACE INTO THE IMAGE SO THAT THERE IS MORE SPACE IN FRONT THAN BEHIND
PORTRAIT TECHNIQUES

- Subjects usually shouldn’t be square on to the camera
LANDSCAPES

- TRY TO INCLUDE AN OBJECT TO CREATE SENSE OF SCALE
LANDSCAPES

- Horizon line should be placed to emphasize either the sky or the land.
LANDSCAPES

- HORIZON LINE SHOULD BE PLACED TO EMPHASIZE EITHER THE SKY OR THE LAND
LANDSCAPES

- Focus on a detail within the scene to add interest
LANDSCAPES

- TRY TO USE A LINE THAT WILL LEAD THE VIEWERS EYE INTO THE PICTURE
FINAL TIP

- THERE ARE NO RULES IN PHOTOGRAPHY
THE SUBJECT SHOULD FACE INTO THE IMAGE SO THAT THERE IS MORE SPACE IN FRONT THAN BEHIND
Subjects usually shouldn’t be square on to the camera.
HORIZON LINE SHOULD BE PLACED TO EMPHASIZE EITHER THE SKY OR THE LAND
THE END
TIPS AND TECHNIQUES FOR BETTER PHOTOGRAPHY