

SCHEME OF EXAMINATION

CERTIFICATE IN PHOTOGRAPHY

PRACTICAL

TOPIC	TIME	MARKS
Lighting & Photography	3 Hrs.	50
Photoshop	3 Hrs.	50
	TOTAL	100

THEORY

TOPIC	TIME	MARKS
Photographic Optics & Methods	3 Hrs.	50
	TOTAL	50
	GRAND TOTAL	150

SYLLABUS

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PRACTICAL

PRACTICAL I - Lighting & Photography

1. Study of different types of camera.
2. Working with different cameras: Holding camera in hands, film loading, unloading, winding, large format cameras, rising, falling and cross movements and swing back.
3. Study of apertures: f-number and their effects, opening and closing.
4. Study of shutters, focal plane and between the lens shutters, different shutter speeds, controlling shutter speeds and movements.
5. Effect of aperture on depth of fields.
6. Effect on the image due to use of normal, wide angle, telephoto and zoom lenses.
7. Use of extension wires, self-timer and shutter release.
8. Use of tripod stand, study of panning tilt head.
9. Use of exposure meter and determination of correct exposure.
10. Use of colour filters: Its effect on photograph, preparation of lighting and objects
11. Making enlargements employing an enlarger. Techniques of enlargement, use of dodging, burning, flashing, vignetting etc., making cartoons.
12. Determination of exposure, its relationship with shutter speed, aperture number and film speed.
13. Use of natural light, tungsten light, fluorescent light, single & multiple electronic flash, reflectors, exposure meters, studio flash & accessories and guide number.
14. Practice on different types of composition using various lighting techniques and use of lenses. Taking photographs out door & indoor.
15. Image show and tell Presentation of photographers who primarily work in portaiture. Discussion of portrait genres and lighting techniques (studio, natural) Review aperture, shutter speed, ISO. Practice editing and cropping. Preparing full and ¾ portraits under different lighting conditions e.g. use of one lamp, two lamp and high front and low front lighting (ghost lighting), its effect.
16. Experiment with night photography and low light shooting. Shoot outside during class time in groups
17. Dynamic landscape photography both day and night.
18. Creation of illusions, view camera, wild life, fashion photography, photojournalism
19. Photography as Contemporary Art Discussion about conceptual practices. Shoot 4-8 images that are conceptually driven, based on your own interests or inspired by the lecture.

Suggested Readings

1. Understanding Exposure, Fourth Edition Paperback by BRYAN PETERSON
2. Digital Photography Complete Course Hardcover by DK
3. Tony Northrup's DSLR Book: How to Create Stunning Digital Photography Kindle Edition by Tony Northrup (Author), Chelsea Northrup (Editor)
4. Light Science & Magic: An Introduction to Photographic Lighting by Fil Hunter (Author), Steven Biver (Author), Paul Fuqua (Author)
5. Understanding Color in Photography by Bryan Peterson (Author)

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PRACTICAL II – Photoshop

1. Basic Interface of Photoshop – Basic Tools & Functions
2. The Essentials of Camera Raw - How to Open Different Types of Images in Camera Raw, Applying a Camera Profile, Using Camera Raw Like It's a Filter, Setting the White Balance, Seeing a Before/After in Camera Raw, Letting Camera Raw Auto-Correct Your Photos, My Editing Your Images Cheat Sheet, Setting Your White Point and Black Point, Adjusting the Overall Brightness, Adding Contrast, Dealing With Highlight Problems (Clipping), Opening Up the Shadows (Like "Fill Light" on a Slider) Double-Processing to Create the Uncapturable, Editing Multiple Photos at Once, Sharpening in Camera Raw, Automatically Fixing Lens Problems, Fixing Chromatic Aberrations, Edge Vignetting: How to Fix It and How to Add It for Effect, Adjusting or Changing Ranges of Color, Removing Spots, Blemishes and other Distracting Stuff, Finding Spots and Specks the Easy Way, Removing Haze or Fog, Reducing Noise, Cropping and Straightening, The Advantages of Adobe's DNG Format for RAW Photos, Choosing How Your RAW Images Will Appear in Photoshop, Calibrating for Your Particular Camera.
3. *Correcting lens problems* - Automatically Fixing Lens Problems, Using Upright to Automatically Fix Lens Problems, Guided Upright: When Camera Raw Needs You to Help a Bit, Fixing Chromatic Aberrations (That Colored Edge Fringe), Fixing Edge Vignetting
4. Special Effects - Adding Vignetting Effects, Adding Custom Vignettes & Spotlights, Stitching Panoramas Right in Camera Raw, Double-Processing to Create the Uncapturable, Applying Selective Color in Camera Raw, Wet Streets and Cobblestones, Converting to Black and White, Split Toning, Duotones Made Crazy Easy, Creating Your Own One-Click Presets in Camera Raw
5. Cropping Photos - Basic Cropping for Photos, Cropping to a Specific Size, Creating Your Own Custom Crop Tools, Custom Sizes for Photographers, Resizing Photos, Automated Saving and Resizing, Resizing for Poster-Sized Prints, Straightening Crooked Photos, Making Your Photos Smaller (Downsizing), Resizing Just Parts of Your Image Using "Content-Aware" Scaling
6. Layers of Light - Working with Layers, Selecting Square, Rectangular, or Round Areas, Saving Your Selections,
7. Softening Those Harsh Edges, Easier Selections with the Quick Selection Tool.
8. HDR - Creating 16-Bit HDR Images in Camera Raw, Creating the Tone-Mapped HDR Look, Creating a Blended HDR to Get the Best of Both Worlds, Getting the HDR Look on a Single Image, How to Get Rid of "Ghosting" Problems, High Pass Sharpening for HDR Images, HDR Finishing Techniques (Vignetting, Sharpening & Soft Glow)
9. *Sharpening Techniques* - Sharpening Essentials, Smart Sharpen, High Pass Sharpening, Output Sharpening in Camera Raw, Saving Blurry Pictures Using the Shake Reduction Filter

Suggested Readings

1. The Adobe Photoshop CC Book for Digital Photographers by Scott Kelby

THEORY

Photographic Optics & Methods

1. A Brief History of B/W Photography: Early experiments and later developments
2. Reflection and refraction of light, dispersion of light through a glass prism, lenses, different kinds of image formation, principal focus and focal length, size of the image, speed and power of the lens, depth of field, angle of view and perspective.
3. Defects of images formed by lens: Chromatic and spherical aberration, curvature of field, distortion and astigmatism, methods of reducing the above defects. Aperture of diaphragm, its function, f notation, different kinds of aperture and their construction, dependence of depth of field and focus on distance and f number.
4. Types of camera lenses: Single (meniscus), achromatic, symmetrical and unsymmetrical lenses, telephoto, zoom, macro, supplementary and fish-eye lenses.
5. Photographic camera types: Pin-hole, box, folding, large and medium format cameras, single lens reflex (SLR) and twin lens reflex (TLR), miniature, subminiature and instant camera, choice of camera and sizes, rising, falling, cross movements and swing back devices.
6. Principal parts of Photographic cameras: (a) Lens (b) Aperture (c) Shutters, various types and their functions, focal plane shutter and in-between the lens shutter, shutter synchronization, self-timer. (d) View-finders and focusing systems: Direct vision and ground glass view finders, frame view finder, plane mirror and penta-prism view-finder, fresnel prism focusing, split image focusing, range finders and range finder focusing, mechanism focusing distance scale. (e) Film chamber: Film transport mechanism, manual and auto winding, film speed setting device.
7. Exposure counter, self-timer, tripod stand, panning tilt head, lens hood, cable release, extension tubes and bellows, tele converter and changing bag.
8. Enlarger: Different types, construction, working.
9. Exposure: Correct exposure and its determination, exposure meters- Types and function, exposure tables.
10. Color Filters: Different kinds, Red, yellow, green, neutral density, half filters, filter factor, color correction filter.
11. Photographic Light Sources:
 - Natural source, the Sun, nature and intensity of the sunlight at different times of the day, different weather conditions.
 - Artificial light sources: nature, intensity of different types of light sources used in photography namely; (i) Photo flood lamp, (ii) Spot light, (iii) Halogen lamp, Barn doors and snoot, lighting stands.
 - Flash unit: Bulb flash and Electronic flash, main components, electronic flash units, studio flash, slave unit, multiple flash, computer flash, x-contact, exposure table.
12. Perspective and composition, rules of composition.
13. Photographic dark room, layout and equipments.
14. Photo sensitive materials: Photographic emulsions, structure of B/W film, types of emulsions and their constituents, grain size and its effects on the image, speed of the film, ASA, DIN and ISO etc., Latitude and resolution, types of negative films, photographic papers, Bromide and Chloride papers, different grade and weights, contrast, surfaces and their use, spectral sensitivity of films and papers.
15. Film (B/W) and Paper Processing:
 - Developers: Constituents of developers and their functions, kinds of developers for specific purposes, e.g. universal developers, fine grain developer, contrast developer
 - and their formula, effect of temperature and time on development.
 - Stop bath: Its function.
 - Fixer: Constituents and function, effect of temperature.
 - Hardener: Its function.
 - Mechanism of washing, methods of illumination hypo and testing its presence, drying,

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- dish and tank developments.
 - Processing of reversal B/W films, method employed, monobath processing.
16. Printing: Contact printing, projection printing using an enlarger, enlargement on Bromide paper, selection of papers, technique of enlargement – Burning, dodging, vignetting, flashing, diffusion or soft focus, distortion creation and correction, making cartoon and multiple photograph on the same paper, making giant enlargements, glazing and drying.
 17. Trick Photography: Methods, effect box, photomontage, wire screen-star effect, use of diffraction grating, texture effect, photolith, Bas-relief, solarization and photo grams.
 18. Defects of negatives and prints: Causes of thin and dense negatives, flat or hard prints, various stains and spots etc. and their removal or prevention.
 19. After treatments of negatives and prints: Intensification, reducing, toning and colouring, constituents and methods employed in each case, retouching and finishing methods, fill in, mounting and framing of films.
 20. Portrait Photography: What is portrait, principle of portrait lighting, use of one, two and three photo flood lamps, use of spot light, use of barn doors and snoot, main light and fill in light, bounce and reflected light, umbrella lighting, photography of full and $\frac{3}{4}$ portraits, arrangements of models, backlighting, control lighting for tones and textures, multiple lighting, profile and silhouette photograph, lighting interior, low and high key lighting.
 21. Still life, table top photography, methods and enlargements employed.
 22. Photography in available light: Meaning and methods, problems, exposure, movements, depth of field, selection of film compensating exposure, special techniques of developments.
 23. Photomicrography: Photography using a microscope, essential equipments and methods, use of polarized light.
 24. Colour Photography: Basic principle, idea of colour, primary and secondary colours, colour and colour temperature, additive and subtractive colour synthesis, colour films, negative and reversal structure, colour film types, processing of colour negatives and reversal films, colour developer its constituents, colour printing dark room and essential equipments, colour printing, constituents of colour enlarger, methods of colour printing on colour papers using colour negatives, steps in obtaining colour prints.
 25. Copying equipments, suitable camera and light arrangements, preparation of negative and duplicate transparencies.
 26. Cinematography: History, basic principle and technique, constructional details of a movie camera, time laps photography, processing techniques and equipments, editing, tilting and presentation.
 27. Sound Recording: Sound recording on line film, techniques and methods employed.
 28. Video Photography: Basic principle of a video camera, various line camera, differences and similarities.

Suggested Readings

1. A History of Photography: From 1839 to the Present by Steven Heller (Editor)
2. Photography: The Definitive Visual History by Tom Ang (Author)
3. Camera: A History of Photography from Daguerreotype to Digital by Todd Gustavson (Author), George Eastman House (Author)
4. Understanding Exposure, Fourth Edition by BRYAN PETERSON
5. Digital Photography Complete Course Hardcover by DK
6. Tony Northrup's DSLR Book: How to Create Stunning Digital Photography Kindle Edition by Tony Northrup (Author), Chelsea Northrup (Editor)
7. Light Science & Magic: An Introduction to Photographic Lighting by Fil Hunter (Author), Steven Biver (Author), Paul Fuqua (Author)
8. Understanding Color in Photography by Bryan Peterson (Author)