



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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Value Added Course

Medical Photography


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VALUE ADDED COURSE
MEDICAL PHOTOGRAPHY

Clinicians might not always have available the services of a professional medical photographer, but if a standardised approach is followed those who take their own clinical photographs can achieve acceptable results. Consistency of approach is emphasised – it is not acceptable to use photographic tricks to enhance the appearance of clinical outcomes. Rather, care should be taken to ensure that the only changes among clinical photographs taken over time are in the patient. This course aims to train medical undergraduates in photography with particular emphasis on clinical photography.

Structure of course:

- 1) Lecture 1- The basics of digital photography
 - Learning about the digital revolution
 - Advantages and disadvantages of digital photography over film photography
 - Computers as photographic tools
- 2) Lecture 2- The device
 - Camera, Lens, Flash, Accessories
 - Basic Information regarding the Camera Settings
- 3) Lecture 3- History and Evolution of Photography
 - History of photography with details of how medical photography has evolved over years
- 4) Lecture 4- Digital Basics
 - Digital image method of storing and processing digital image: Raster and Vector method
 - Representation of digital image: Resolution, Pixel Depth, Pixel Aspect Ratio, Dynamic Colour Range, File Size, Colour Models, Image Compression, File Formats
 - Calculating image resolution for outputs.
- 5) Lecture 5- Digital platform
 - Hardware and System Software
 - Windows Operating System
 - Concept of Internet

- Image transportation through floppy, CD, zip and Internet.
- 6) Lecture 6- Digital Capture
- Digital Image formation – Image Sensors – Different Capturing Method: Digital camera – Scanner – Frame Grabber
 - DIGITAL CAMERA: Understanding how digital cameras work – Digital camera types: Floppy Disc type, Flash Card type, Hard Disc type – Overview of current digital cameras.
- 7) Lecture 7- Digital Retouching & Image Enhancement
- Image size – Resolution – Selection tools and techniques – History – Retouching tools – Layers – Photo mounting techniques – Incorporation of text into picture.
 - Digital Manipulation: Applying selective effects to images and filters with masks and different digital darkroom effects.
- 8) Lecture 8- Digital Output
- Placing photos in other documents – Using photos on the web.
 - Printers as output devices – Different types of Print,
 - Proofing, Photo quality printing.
 - How can a digital image be printed?
- 9) Lecture 9- SPECIAL FILTERS
- Colour sensitivity of film, types of filter, filter factors, contrast and density of filters and its definitions.
 - General- ND, 80B, 81A, 85B, CC, IR, Polarized, Heat filter, dichroic, graduated, fog, contrast and correction-their classification, working principles, uses and available models.
- 10) Lecture 10- OBJECT LIGHTING
- Type of object lighting: Daylight, Artificial light and their combination — ANGLE
- 11) Lecture 11- EXPOSURE METER
- Types, function and use (methods of using incident and reflected type meters) — Selection of shutter speed and aperture — Manual exposure setting method — Selection of exposure in case of varying / combined illumination.
- 12) Lecture 12-Standardization
- It is axiomatic that the only variable among photographs taken to show change over time should be in the patient. Everything else should stay the same - viewpoint, positioning, lighting, colour, magnification, perspective, contrast, and background
 - principles of standardisation should apply to any set of two or more photographs taken at different times. In practice it is extremely difficult to standardise absolutely so many variables

- the photographs might be taken by different people, in different rooms, using different cameras, lenses or films, under different lighting, and from a different distance or angle to the patient.

13) Lecture 13 -Positioning of Patient

- All clinical photographs should be viewed with reference to this position - the top of the photograph should always be nearest the top of the head. This works for most views but some parts of the anatomy are best viewed from other angles, or in different positions.
- The arms are best photographed in extension, and are normally photographed in a horizontal position. However, the palms should still face forward, so the back of the forearm should be photographed with the patient facing away from the photographer [Figure:2]. Close-up views can easily be mis orientated, so should normally be accompanied by an 'establishing' view, to show their precise anatomical position.

14) Lecture 14- Ethical considerations and publishing

- There are many things to take into consideration while taking a clinical photograph such as consent, whether patient knows that the photograph will be used for publication
- Medicolegal aspects

15) Lecture 15- Field visit

16) Lecture 16- Field visit