SYLLABUS

SEMESTER- 7

Cinematography

SP.PAPER-5

Physics of Digital Photography

Credits-3

L	T	P
3	0	10

1. Physics of Optics, The physical Aspects of Lenses

1.1 Types of Lenses, Image formation
1.2 The physical basis of Optics, Refraction, Focal length and angle of view
1.3 Focus, Depth of field, Circle of confusion, Depth of field equations, Hyperfocal distance
1.4 Focus, Exposure Theory, The Elements of Exposure
1.5 Response curve, Strategies of exposure, Zebras
1.6 Lens Accessories, Lens care

2. Raw Conversion, Colour and The Colour Space

2.1 Physics of colour, CIE RGB colour space
2.2 CIE XYZ colour space, Chromaticity diagram (*xy*)
2.3 Digital cinema colour spaces: P3, XYZ, Aces
2.4 Colour in Cinematography, White point
2.5 Camera raw space, Eye response functions, Camera response functions,
2.6 White balance, Adopted white, Chromatic adaptation transforms, White balance strategies

3. MTF, Resolutions, Nyqvist Theory

3.1 MTF
3.2 Resolution, Sharpness and Contrast
3.3 Nyqvist Frequency
3.4 The case for 4K
3.5 Resizing and Resampling

4. High Dynamic Range and Wide Color Gamut

4.1 Progressive Frame Rates, Interlace versus Progressive frames, Advantage of Progressive scan
4.2 High Dynamic range and Wide color gamut
4.3 Care for shooting HDR

5. DIT, Digital Workflow Design

5.1 DIT Cart
5.2 Workflow, Data, and Data management
5.3 Dailies, Data Back up
5.4 Color Management, Look Management

Practical and Exercises
1. Lighting Practice in Set
2. Shooting Practice for Dialogue Exercise

Exercise : a. Dialogue Exercise

Reference books -

1. Fundamentals of Digital Cinematography – A S Kanal
2. Digital Cinematography - David Stump
3. Cinematography Theory and Practice -Blain Brown