



B. Sc. (Physics) SEMESTER-III
Paper-II (Physical optics and Electromagnetic waves)

Unit- I

Interference of light- Introduction,

<https://youtu.be/ZAI8obswodw?si=sji9fAQuf5NldNf0>

Phase change on reflection, refraction and transmitted system

<https://youtu.be/b3V35-5stTY?si=H7uih7SadUGDdpBb>

Newton's ring and its application to determine the wavelength and Refractive index

https://youtu.be/_YFUxf80cGc?si=nV3LWEG2fJEtX100

Michelson Interferometer and its application to wavelength determination and wavelength difference.

<https://youtu.be/9ycQolopz6g?si=R6BDDwYK8D4XbIIQ>

Unit- II

Diffraction of light- Introduction

https://youtu.be/mL63s4QqVPc?si=UjkGbaf_OlvGmvuH

Fresnel's diffraction- Half period zones, Zone plates

<https://youtu.be/IbyEydDGx5Y?si=Z-iUC4-i3DINWwEn>

Fraunhofer diffraction- Fraunhofer diffraction at a single slit

<https://youtu.be/vFz-AK3JjaI?si=MAgmkvXhvdKU7VRy>

Plane diffraction grating and its application, Resolving power of Grating

<https://youtu.be/FkHM8z7yChA?si=xRpuJush56U2kBwJ>

Unit- III

Polarization- Introduction, Brewster's law

<https://youtu.be/SuvESIXB8Yk?si=0MfhGz8Dw0y5Y4Km>

Uniaxial and biaxial crystal, positive and negative Crystal

https://youtu.be/zWhz6ktIBNs?si=TyqA_CIM3r4TimYy

Nicol prism, its application as an analyzer and polarizer

https://youtu.be/kOMP_zO8svE?si=1L_u33ZzYE4i263w

Double refraction in uniaxial crystal

<https://youtu.be/NDyt2Th4tjY?si=q-Lx3IUMWyy0f4DZ>



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Unit- IV

EM Waves- Introduction to EM spectrum related to wavelength

<https://youtu.be/M3GpS7buQAA?si=ytb7EfKnhAiC1wiB>

Physical significance of Maxwell's equations,

<https://youtu.be/sg4qri4GTSM?si=UlwK7z4c5QoA9EAT>

EM wave equations (in conducting medium)

<https://youtu.be/C1oLWocrxLA?si=X3nKKSydINYEZdd0>

Plane polarized EM wave

https://youtu.be/q3f8pq5M9JU?si=C_4yv7DxIQvb_ww3

Poynting vector, Poynting theorem

<https://youtu.be/mhtAESnyTA0?si=QwTtLCRa8PwcBAes>