

# Optics Syllabus

## A. Geometric Optics

- 1-Elementary geometrical optics in the paraxial approximation.
- 2-Refractive index; reflection and refraction at a plan boundary from Huygens principle and Fermats principle;
- 3-Snells Law;
- 4- Total internal reflection.
- 5-Image formation by reflection at a spherical boundary
- 6- Prism
- 7- mirror
  - 7.1 plane mirror
  - 7.2 concave and convex mirrors.
- 8- lenses
  - 8.1 thin lens
  - 8.1 thick lens
- 9- Real and virtual images.
- 10-Magnification.
- 11-Image formation by refraction at a spherical boundary and by converging and diverging thin lenses.
- 12-Derivation of the expression for the focal length of a thin lens.
- 13-Image formation by mirrors

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