

Geometric Optics  
Leon Strauss

Brief outline

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Introduction and preview of topics

1

Waves, wavefronts, rays, deflection of rays where the speed of light changes  
Bundles, pencils, beams. images

2

Images created by optical systems and pinholes  
Refraction, reflection  
Parallel plate, prism, lens

3

Snell's law, Fermat's principle, dispersion, critical angle

4

Vergence, Gaussian optics  
Vergence equation, cardinal rays

5

Real and virtual objects and images  
Vergence computations, ray diagrams  
Magnification

6

Image and object movement  
Thick lenses, multiple lenses  
Nodal points, principle planes  
Lens with water on one side, air on the other  
Meniscus lenses  
Power of a surface, reduced vergence

7

Mirrors, prisms

8

Telescopes

9

Astigmatism, aberrations, refraction lane