

Dr. B. B. HEGDE FIRST GRADE COLLEGE, KUNDAPURA

Department of Physics

Lesson Plan: 2018-19 (I Term)

Subject & Code	Teacher	Class & Sem	Date
Optical Physics (BSCPHC203)	Ms. Chaithra	II B.Sc III Sem	23-06-2018

Chapter	Objectives	Methodology	Student learning point
Unit - I : Interference	<ul style="list-style-type: none"> <li>To know the concept of coherent source</li> <li>To study about the concept of Newtons rings</li> <li>To understand the concept of thin film</li> <li>To learn the application of Michelsons interferometer experiment</li> </ul>	Lecturing Chalk and talk Discussion of possible questions Seminar PPT	<ul style="list-style-type: none"> <li>Study the methods for determination of <math>\lambda</math> and <math>d\lambda</math></li> <li>Make the students to understand the experiment of air wedge and Newtons ring</li> <li>To provide the idea about working and experimental of thin film</li> </ul>
Unit - II : Polarization and Diffraction	<ul style="list-style-type: none"> <li>To understand the concept of plane polarized light</li> <li>To know the concept of quarter wave plate and half wave plate</li> <li>To learn the concepts of optical activity</li> </ul>	Lecturing Chalk and talk Discussion of possible questions Seminar, Problem solving	<ul style="list-style-type: none"> <li>Make the students to understand the concept of Hygens explanation of double refraction</li> <li>Make the students to learn the concept of Fraunhofer diffraction</li> <li>To give the ideas about the oblique incidence dispersive power</li> <li>To study the concept of Rayleigh's criterion</li> </ul>
Unit - III : Electromagnetism	<ul style="list-style-type: none"> <li>To know the concept of gradient of a scalar function</li> <li>To understand the concept of line integral, surface integral</li> <li>To learn about Maxwells field equation</li> </ul>	Lecturing Chalk and talk Discussion of possible questions Seminar Problem solving	<ul style="list-style-type: none"> <li>Make the student to learn the concept of Divergence and curl of a vector</li> <li>To learn the concepts of Gauss and Stokes theorem</li> <li>To give the ideas about normal and anomalous dispersion</li> </ul>

	<ul style="list-style-type: none"> <li>To know the application of poyenting vector</li> </ul>		
<b>Unit - IV : Radiations and Lasers</b>	<ul style="list-style-type: none"> <li>To know the concepts of plancks law, weins displacement law</li> <li>To understand some definition like radiation pressure solar constant and optical pumping</li> <li>To learn the application of He-Ne lasers solid state lasers</li> </ul>	Lecturing Chalk and talk Discussion of possible questions Seminar, Problem solving	<ul style="list-style-type: none"> <li>Make the students understand the concept of population inversion</li> <li>To learn the concept of pulsed and tunable lasers</li> <li>To study the applications of lasers and elements of holography</li> </ul>

**Requirements:**  
Black board

**Books for Reference:**  
Fundamentals of optics- Jenkins and White  
Optics- Khanna and Gulati  
A text book of optics- B K Mathur  
Laser fundamentals- Silfast WT

**E-Resources:**

<https://youtu.be/CAe3lkYNKt8>  
<https://youtu.be/Djndx28l4xa>  
<https://youtu.be/oiA83yylikA>  
<https://youtu.be/f6LFK975wJw>

**Note:**

Optical element that gathers light from the object being observed and focuses the light rays to produce a real image. It deals with the different kinds of intense beam of radiation. Light exhibits wave characteristics in various media as well as in a vacuum

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