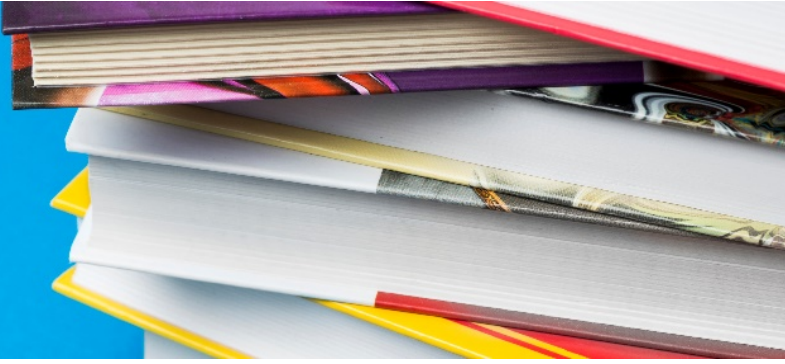
TEL AVIV UNIVERSITY אוניברסיטת תל אביב

Full Syllabus



Course Title

Effects and applications involving light and acoustic wave

Lecturer

Prof. Avishay Eyal

Semester

A

Course requirements

Classical optics - 0512-4660

Final grade components

80% final exam, 20% exercises

Course schedule

Class no. / Date	Subject and Requirements (assignments, reading materials, tasks, etc.)
1-2	Introduction: Optical and acoustical wave, notations and definitions, the deformation and strain tensors, index ellipsoid
3-4	The photoelastic tensor and the photoelastic effect
5	The acousto-optic effect
6	Applications of the acoustooptic effect - modulation
7-8	Brillouin scattering: in a bulk medium, in optical fibers
9	Forward Brillouin scattering
10	The photoacoustic effect
11	Applications of the photoacoustic effect
12-13	Distributed acoustic sensing

Required course reading

Optional course reading

1. 'Biomedical Optics: Principles and Imaging', Hsin-i Wu and Lihong V. Wang, Wiley, John & Sons, Incorporated (June 4, 2008)
2. 'Nonlinear Optics', Robert W. Boyd, Academic Press
3. 'Distributed Optical Fiber Sensors', Arthur H. Hartog , CRC Press (April 7, 2017)

Comments