Sabanci University
Faculty of Engineering and Natural Sciences

EE 403: Optoelectronics

Instructor: Kürşat Şendur Office: 1065 Tel: 9527
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Class Hours: Friday 09:40-12:30
In-Person Class Location: FENS L065

Zoom Link and ID for Online Attendance: https://sabanciuniv.zoom.us/j/97595641870?pwd=L01aMlNnWGxVMHlCK0tvMndnM28wQT09
Meeting ID: 975 9564 1870
Passcode: 403403

Teaching Assistants: Amin Balazadeh Koucheh: aminb@sabanciuniv.edu
Onur Demirel: onur.demirel@sabanciuniv.edu

Text Book:
Fundamentals of Photonics, B.E.A. Saleh & M.C. Teich (John Wiley Sons, New York)

Grading (Tentative):
Homeworks: 30%
Exam: 40%
Project: 30%

Tentative Syllabus:
Week 1: Introduction and Examples of Novel Optical Applications
Weeks 2-3: A review of Maxwell’s equations and EM basics
Week 4: Polarization
Week 5: Guided Waves
Weeks 6-7: Field propagators, paraxial approximation, Gaussian Beams, Laguerre-Gaussian Beams, Hermite-Gaussian Beams
Week 8: Midterm Exam
Week 9: Propagation and focusing of fields, Focusing near planar interfaces
Week 10: Tutorial for Numerical Tools (HFSS)
Week 11: Optical Properties of Metals, Drude Model, Lorentz Model
Week 12: Surface Plasmon Polaritons and their dispersion characteristics
Weeks 13-14: (Time Permitting) Thin Film Plasmons, Localized Plasmons, Resonator Optics, Photon Optics