**EE 403 OPTOELECTRONICS**

<table>
<thead>
<tr>
<th>Semester :</th>
<th>Fall 2020 (Online Course)</th>
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<tbody>
<tr>
<td>Level of Course:</td>
<td>3rd and 4th Year Engineering Students</td>
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<tr>
<td>Language of Instruction:</td>
<td>English</td>
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**Instructor :** Prof Dr M Naci Inci  
**Instructor’s office hours:** by appointment  
**Instructor’s office no:** --  
**Instructor’s phone no:** 0212 359 7602  
**Instructor’s e-mail address:** naci.inci@boun.edu.tr

**Class hours & Lecture halls:** TTTh 122 on Zoom or Recording  
**Prerequisite:** Consent of the Instructor  
**Course Description:** Maxwell Eqs and light propagation; group velocity, Poyinting Vector, Snell’s Law, Fresnel Eqs, evanescent wave; transmission and reflection in dielectric coatings; multiple interference; Goos-Hanchen shift; temporal and spatial coherence; diffraction and diffraction gratings; dielectric waveguides and optical fibers; polarization; interaction of light and matter; light propagation in crystals; optical activity; Electro-optic effects: Pockels and Kerr Effects, devices based on the electro-optic effects; acousto-optic effect; magneto-optic effect; Nonlinear optics: 2nd and 3rd harmonic generations; Stimulated emission: Gas lasers; Semiconductor fundamentals; semiconductor light sources and detectors; holography.

**Recommended Textbook:** Optoelectronics & Photonics by S O Kasap, 2nd Ed. or later.  
**Recommended Readings:** Fundamentals of Photonics, 2nd Ed. or later, by B E A Saleh & M C Teich

**Grading:** A series of exams on Moodle to be used for letter grading at the end of the semester.