



---

**ECE 617: Silicon Photonics**  
*Prof. Hossam Shalaby, Email: shalaby@ieee.org*

---

## I Outline

- Introduction.
- Fundamentals of Light.
- Basics of Guided Waves.
- Silicon-on-Insulator (SOI) Photonics.
- Loss and Coupling in SOI Photonics.
- Waveguide Design.
- Directional Couplers.
- Directional Couplers Design.
- Periodic Waveguides.
- More Building Blocks.
- Optical Input/Output Design.
- Fabrication of Silicon Waveguide Devices.

## II Handouts and Assignments

- Handouts and assignments can be downloaded from  
☞ <http://eng.staff.alexu.edu.eg/~hshalaby/>

## III Teaching and Assessments

- Teaching hours per week:
  1. Sunday, 10:30–11:45 AM, venue B14-F8, every week.
  2. Tuesday, 10:30–11:45 AM, venue B14-F8, every week.
- Exams and their durations:
  1. Midterm exam: 1.5 hrs.
  2. Research paper presentation: 30 mins.
  3. Final exam: 3 hrs.
- Distribution of a total mark of 100:
  1. Midterm exam: 20 marks.
  2. Lab assessments: 40 marks.
    - a. Assignments and quizzes: 10 marks.

- b.* Term project: 15 marks.
  - c.* Research paper and presentation: 15 marks.
- 3. Final exam: 40 marks.