# ECE 475 – OPTICAL COMMUNICATIONS

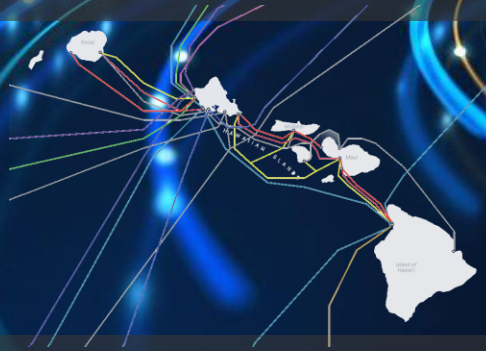
The Internet is the backbone of our modern information-dependent civilization. The foundation of this system is firmly rooted in optical communication technologies. In this **3-credit** course you will learn the physical principles of operation for key enabling technologies such as:

- Optical Fibers & Waveguides
- Optical Combiners
- Directional Control
- Polarization Control
- Fiber Bragg Gratings
- Lasers, Modulators, Amplifiers, Detectors
- Signal Combination: Wavelength division multiplexing and modulation techniques

This experience will provide you with a firm understanding of the building blocks of modern telecommunications systems and help position you to produce new and innovative electrooptical devices that will underpin computing and communications in the years ahead.

Spring Semester 2025
Tuesday and Thursday: 1200 to 1315 (ONLINE)

Prerequisites: ECE 372 or consent of the instructor



## Instructors

**Dr Branden Allen** (btallen@hawaii.edu) is an internationally-recognized expert in the design of detectors and detector arrays for high altitude balloons, low earth orbit observing, and planetary missions. He is based in Hilo and serves as Program Lead for the Space Science and Engineering Initiative (SSEI).

**Dr Chris Hamner** (chamner@hawaii.edu) has over a decade of industry experience designing, building and testing optical systems for commercial customers. He is also based in Hilo and part of the SSEI.