

**AICTE QIP  
SHORT TERM TRAINING PROGRAMME**

*on*

**Advances in Optical Communication**

**27 Jan - 2 Feb 2022**

**Instructors : Deepa Venkitesh, Anil Prabhakar  
and other experts from Academia/Industry**

*Sponsored by*

**All India Council for Technical Education**

*Organized by*



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Indian Institute of Technology Madras, Chennai  
600036**

**Rationale:**

Optical communication is a dynamically evolving technology that requires continual update of knowledge base for both academia and industry; especially with the advent of coherent communication in the optical domain. This course addresses the fundamentals and practical implementation aspects of coherent optical communication with special discussion on quantum key distribution.

**Course Aims and Outcomes:**

**Aims**

This course is intended to cover the fundamental aspects of optical coherent communication with advanced modulation formats. The generation and detection of data in polarization multiplexed QPSK and QAM formats, basic digital signal processing tools to recover the data, and quantum key distribution would be discussed in this course.

**Specific Learning Outcomes:**

At the end of the course, the participant will be able to

1. Describe the basic building blocks of an optical coherent communication system
2. Identify the laser sources and detectors used for coherent communication systems
3. Explain the generation and detection of advanced modulation formats at the physical layer
4. Demonstrate basic digital signal processing to recover data encoded in advanced modulation formats
5. Describe the primary building blocks for quantum key distribution.

**Format and Procedures:**

The course comprises of 24 lectures of 1.5 hours each, and video demonstrations of coherent optical communication systems.

**Course duration & venue**

The course is of one-week (six days) duration from 27<sup>th</sup> January 2022 to 2<sup>nd</sup> February 2022

**Lectures and demonstrations will be done in online mode.**

**Eligibility**

The course is open to faculty and students from any disciplinary background with a particular interest in optical communication and quantum key distribution. The course is open to members from engineering colleges approved by AICTE and other colleges.

**Registration Fees:**

**Participants from academic institutions, both from AICTE approved and other colleges: ₹ 1,000.**

**For the first 30 college teachers from AICTE approved colleges the registration fee will be refunded after the course is completed.**

**Professionals from Industries/CSR/Government sectors, etc. can also participate in this course. The course fee for them is ₹ 10,000.**

**For queries:**

**Please contact the below email ids:**

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**IMPORTANT DATES**

Last date for receiving application

24-JAN-2022