



OPTICAL INSTRUMENT DESIGN CERTIFICATE PROGRAM • ONLINE

An increasing amount of today's consumer, industrial and business products incorporate optomechanical systems. These are essential to virtually every industry including defense, medical, clean energy, nanotechnology, automotive, electronics, communications, entertainment, computers, and consumer products. The **Optical Instrument Design Certificate Program** builds on optical systems engineering skills gained in the Optical Engineering Program and address the growing demand for skilled professionals who can conceptualize, design, and manufacture these optical and optomechanical components, systems, and instruments.

WHO SHOULD ENROLL

The **Optical Instrument Design Program** provides advanced study options for experienced optical engineering professionals allowing them to address a wider range of optical and optomechanical design issues. The elective courses provide an opportunity for students to develop specialized skills related to their professional needs or personal interests.

PROGRAM BENEFITS

- Gain useful insights and practical skills for designing and engineering optomechanical components and instruments
- Explore the latest technologies in optical engineering including new optomechanical materials and the latest cost effective manufacturing techniques
- Develop skills with industry standard optical and mechanical software tools
- Learn through hands-on design courses which provide skills in manual design, computer simulation, and the art of creating optical instruments

CERTIFICATE ELIGIBILITY AND REQUIREMENTS

Candidates should complete EECS X496.55 Geometrical and Physical Optics or possess equivalent experience or education.

A certificate is awarded upon completion of 15 credit units (6 required and 9 elective units) with a grade of "C" or better in each course.

All requirements must be completed within 5 years after the student enrolls in his/her first course. Students not pursuing a certificate are welcome to take as many individual courses as they wish.

Register for a
membership with the
Optical Society of
Southern California to
receive 15% off
REQUIRED courses



Optical Society of Southern California

PROGRAM FEES

The total cost of the program varies depending on the elective and prerequisite courses chosen. Actual fees may differ from the estimate below. Fees are subject to change without prior notice.

Course Fees (3 prerequisite, 6 required and 9 elective units)	\$4,495
Candidacy fee	\$125
Textbooks and Materials	\$975
Total Estimated Cost	\$5,595

TO ENROLL

Visit ce.uci.edu/optics for full course descriptions, instructor biographies, and enrollment information.

FOR MORE INFORMATION:

Jennifer Mortensen
j.mortensen@uci.edu
(949) 824-9722

OPTICAL INSTRUMENT DESIGN CERTIFICATE PROGRAM

COURSE#	PREREQUISITE COURSES	UNITS
EECS X496.55	Geometrical and Physical Optics	3
COURSE#	REQUIRED COURSES	UNITS
EECS X498	Optical Instrument Design	3
EECS X499	Optomechanical Systems Engineering	3
COURSE#	ELECTIVE COURSES (Minimum 9 units)	UNITS
EECS X496.53	Optical Metrology and Interferometry [#] (Offered at IVC - Irvine Community College)	3
EECS X497	Optical Mechanical Component Design	3
EECS X493.55	Introduction to Lasers	3
EECS X493.56	Introduction to Fiber Optics	3
EECS X493.58	Vibration Control for Optomechanical Systems	3
EECS X496	Optical Systems Engineering	3
EECS X494.1	Introduction to Radiometry: The Propagation and Measurement of Optical Radiant Energy	3

[#]Course can be taken at Irvine Community College (IVC) <http://academics.ivc.edu/physci/lasertech/pages/course.aspx>. Submit final transcripts to UCI Division of Continuing Education department for transfer credit after course completion.

ADVISORY COMMITTEE

Ed Arriola, Chief Engineer, II-VI Optical Systems

Valentina Doushkina, M.Sc., Principal II Optical Systems Engineer, R&D, Vitreo/Retinal Surgical Instrumentation, ALCON

Derek Dunn-Rankin, Ph.D., Professor and Chair, Mechanical & Aerospace Engineering, University of California, Irvine

Mark Gallagher, Ph.D., J.D., Partner, Knobbe, Martens, Olson & Bear, LLP

Keith J. Kasunic, Ph.D., Technical Director, Optical Systems Group LLC

G.P. Li, Ph.D., Professor, School of Engineering; Director, California Institute for Telecommunications & Information Technology, University of California, Irvine

Brian Monacelli, Ph.D., Optical Engineer, Jet Propulsion Laboratory; Photonics Instructor, Irvine Valley College

Donn M. Silberman, M.S., Founding Director, Optics Institute of Southern California, Technical Services Manager, Starrett Kinematic Engineering; Board President, STEMBILITY

James D. Trolinger, Ph.D., Co-Founder, MetroLaser, Inc.

Bruce Tromberg, Ph.D., Professor, Biomedical Engineering; Director, Beckman Laser Institute, University of California, Irvine

Wytze van der Veer, Ph.D., Senior Director of Laser Engineering, Cutera Inc.