



OPTICAL ENGINEERING CERTIFICATE PROGRAM • ONLINE

An increasing amount of today's consumer, industrial and business products incorporate lenses and optical systems. These are essential to virtually every industry including defense, medical, clean energy, nanotechnology, automotive, electronics, communications, entertainment, computers, and consumer products. **The Optical Engineering Certificate Program** addresses the growing demand for skilled professionals who can conceptualize, design, and manufacture optical components and systems.

WHO SHOULD ENROLL

The **Optical Engineering Program** gives students the skills and experience needed to enter this growing field. The program will benefit entry and mid-level professionals who need to broaden their knowledge and improve their career options.

PROGRAM BENEFITS

- Explore the latest technologies in optical engineering including new optical materials and the latest cost effective manufacturing techniques
- Develop skills with industry standard optical software tools
- Discover innovative approaches for optical engineering and analysis
- Learn through hands-on design courses which provide skills in manual design, computer simulation, and the art of creating optical components and systems

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 (9 required and 6 elective credit 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 the certificate program 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



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, 9 required and 6 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 ENGINEERING CERTIFICATE PROGRAM

COURSE#	PREREQUISITE COURSES	UNITS
EECS X496.55	Geometrical and Physical Optics	3
COURSE#	REQUIRED COURSES	UNITS
EECS X493	Introduction to Lens Design	3
EECS X493.1	Advanced Lens Design	3
EECS X496	Optical Systems Engineering	3
COURSE#	PREREQUISITE COURSES (Minimum 6 units)	UNITS
EECS X496.53	Optical Metrology and Interferometry [#] (Offered at IVC - Irvine Community College)	3
EECS X497	Optical Mechanical Component Design	3
EECS X498	Optical Instrument Design	3
EECS X493.55	Introduction to Lasers	3
EECS X493.56	Introduction to Fiber Optics	3
EECS X499	Optomechanical Systems Engineering	3
EECS X493.58	Vibration Control for Optomechanical Systems	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

Arnie Banzensky, Field Sales Manager, Schott Glass Technologies

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

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

Joshua Jo, Ph.D., Principle Engineer, Samsung Electro-Mechanics

Gregory Klotz, Opto-Mechanical Design Engineer, nanoPrecision Products

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

Forrest Reynard, CEO, Reynard Corporation, Advanced Optical Solutions

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

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

Desiré Whitmore, Ph.D., Mentorship Chair and founding board member, CABE; Assistant Professor, Irvine Valley College, Photonics Technology Program