

# Optical Design Course EOP 601

University of Dayton

Electro-Optics Program

Instructor: Dr. Cong Deng

Learn optical design using ZEMAX during a 12 week intensive summer course. The course begins with basic optical concepts for students with limited knowledge of optics and then they deepen their knowledge of ray tracing and learn about aberrations. Students will have the opportunity to practice with ZEMAX optical design software and work through an engineering oriented book by Joseph M. Geary ("Introduction to Lens Design: with Practical ZEMAX Examples"). It is most popular book adopted by several well-known optical centers in US. The course will introduce and discuss the fundamental principles of merit functions, tolerance analysis and Opto-mechanical design with emphasis on the manufacturing requirements by US companies. Non-sequential optical simulation will also be introduced as well. The goal is to help students to learn critical skills for designing and testing practical optical systems, and be ready for a challenging optical engineering career.

Textbook: Introduction to Lens Design: with Practical ZEMAX Examples, Joseph M. Geary, Pub: Willmann-Bell (August 2002), Ed: August 2002, ISBN: 0-943396-75-1

Prerequisite: EOP-501: Geometrical Optics, basic background in Optics, or familiar with textbooks:

- ✓ Hecht, E. and Zajac, A., Optics (First edition). Boston: Addison-Wesley, 1974
- ✓ W.J. Smith, Modern Optical Engineering, 3rd Ed. McGraw-Hill, 2000. ISBN 0-07-135360-2
- ✓ Goodman, J. Introduction to Fourier Optics. New York: McGraw-Hill

Registration online through the University of Dayton website

Start: May 12, 2014

