Integrated Opto-Mechanical Analysis
2-day short course - June 26 and 27, 2006
Sponsored jointly by: Sigmadyne, Inc and Mechanical Engineering at the University of Rochester

Course Description
The purpose of this course is to present opto-mechanical modeling methods used to design and analyze high performance optical systems. Thermo-elastic and structural modeling methods are discussed using finite element analysis to predict the integrity and performance of optical elements and optical support structures. The integration of thermal and structural responses into optical design software packages to predict optical system performance is presented. The SigFit program will be used throughout the course as an example of a powerful integration tool.

Intended Audience
This course is intended for mechanical, structural, thermal, and system engineers interested in learning FEA methods specific to optical systems and techniques to integrate thermal and structural responses into optical design codes.

Learning Objectives
This course will enable you to develop skills in using or developing software to:
- integrate thermal and structural results into optical analysis programs
- perform optical surface evaluation using Zernike polynomials
- predict optical errors and line-of-sight jitter in vibration environments
- develop back-outs for test and assembly induced errors
- effectively model lightweight mirrors, solid optics, mounts, adhesive bonds
- predict the effects of dn/dT and stress birefringence
- model adaptive optics, predict system correctability and system performance
- use genetic optimization to select quantity and placement of actuators
- use opto-structural optimization techniques to improve designs

Instructors:
* Dr. Victor Genberg PE worked at Eastman Kodak Company for 28 years prior to becoming co-founder and president of Sigmadyne. With over 35 years of experience in the application of finite element methods to optical structures, Vic is a recognized expert in opto-mechanics. He has over 40 publications in this field.
* Dr. Keith B. Doyle has over 18 years experience in the field of opto-mechanics. Prior to becoming vice-president of Sigmadyne, he worked at Optical Research Associates and MIT/Lincoln Laboratory. He received his Ph.D. from the University of Arizona in Engineering Mechanics with a minor in the Optical Sciences.
* Gregory Michels PE has over 13 years experience in the field of opto-mechanical analysis. After receiving his MS from University of Rochester, he worked at Eastman Kodak Company for 5 years. Currently, he is co-founder and vice-president of Sigmadyne.

Time/Location/Cost:
June 26 and 27, 2006  8:00AM – 5:00 PM  at University of Rochester
Cost: $550. (additional students from the same company  $450.)
Textbook and class notes included.

To Register, Contact:
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For Additional Info, Contact:
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