



San José State
UNIVERSITY

Precision Mechanics

A One-Day Professional Development Short Course

Friday, March 24, 2000 8:00 a.m. – 5:00 p.m.

Engineering Building, Room 287

(Registration starts at 8:00 a.m.)

OBJECTIVES: To provide participants with practical techniques and approaches for the engineering design of instruments and precision devices.

WHO SHOULD ATTEND: Engineers, scientists, technicians, machinists, or anyone who needs to create instruments, mechanisms, mounts, fixtures, adjusting, or supporting devices with precision performance requirements.

COURSE OUTLINE: The course begins with the concept of kinematic design and then addresses how to create practical elements for kinematic mounts. It goes on to discuss flexures for small displacements and rotations, wire flexures for 5 DOF coupling, methods for precision adjustments, holding, clamping and locking methods, considerations in supporting structures, their stiffness, vibration, and damping, stick-slip, Hertzian stresses, stability over time and temperature, and many examples that show how these methods can be integrated to achieve a desired result. Model shop and experimental lab techniques are often referenced. Intuitive understanding of fundamental principles is emphasized. Measurement components and application to the sub-micron world are discussed.

PRESENTED BY: David Kittell, Founder and President of Sage Systems, has been a designer and builder of precision instruments and machines for more than 30 years. During his early career, he worked on high performance optical drum scanners for Time, Inc., contributing to many innovations to the field. He was the architect of the computer-controlled polisher used to polish the now infamous Hubble Space Telescope mirrors. He was recently a principal scientist with Hughes Danbury Optical Systems in Connecticut, doing work on deformable mirrors and adaptive optics. He holds an engineering degree from the University of Connecticut.

FEE: \$350, which includes continental breakfast, refreshments, lunch, and course book.

For more information, please see <http://www.engr.sjsu.edu/bjfurman/precisioncourses> or contact Prof. Buff Furman at (408) 924-3817 or bjfurman@email.sjsu.edu

REGISTRATION FORM (Please forward by March 10, 2000)

Precision Mechanics, March 24, 2000 - \$350

Make check payable to **PDP/Mechanical & Aerospace Engineering** and mail registration form to: PDP/PRECISSION MECHANICS SHORT COURSE, Dept. of Mechanical & Aerospace Engineering, San José State University, One Washington Square, San José, CA 95192-0087 Fax (408) 924-3995. Payment by credit card can be arranged by calling Prof. BJ Furman at (408) 924-3817.

NAME _____ COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

DAY PHONE _____ FAX NO. _____

EMAIL: _____