

### Ideas for tutorial reports

- Calculation of image position, size and orientation using first order properties
- System design for correcting image rotation
- Calculation of image rotation for a scanning optical system
- Estimate of image quality degradation from optical surfaces
- Specifying scratch/dig tolerances
- Selecting tolerances for optical components
- Selecting tolerances for mechanical components
- Kinematic supports
- Instantaneous center of rotation
- Stress/strain relationship for solids
- Approximations for shear stiffness of non-circular beams
- Approximate stiffness calculations for rubber blocks
- Choice of isolators for vibration
- Estimations for shock loading
- Negative stiffness elements
- Estimate of thermal distortions from heat loading
- Choice of materials for infrared optics
- Specifying optics to be made by single point diamond turning
- Thermal stress from dynamic environments
- Window strength
- Choice of adhesives
- Choosing a rotation/translation/tilt stage
- Defining edges and bevels for lenses
- Protective surface coatings for aluminum
- Black coatings to reduce stray light
- Hertz contact stress
- Design of lens cells
- Potting lenses into cells
- Potting mirrors into cells
- Mount induced errors for lenses
- Mount induced errors for mirrors
- Mirror distortions due to self-weight
- Minimizing residual errors for multipoint supports
- Optomechanical system layout