Simulation Analysis Studies

Course Content:

Getting started

- Module overview
- Course overview
- Course resources

Static stress simulation

- Module overview
- Start a static stress simulation
- Use simplify
- Select study materials
- Create custom materials
- Define structural constraints
- Use a bolted connection
- Add a structural load
- Define multiple load conditions
- Solve contact sets
- Generate mesh and mesh control
- Solve a simulation
- Review simulation results
- Practice exercise
- Challenge exercise

Using shape optimization to drive a design

- Module overview
- Define common parameters for a shape optimization
- Define shape preservation regions
- Detail optimization criteria
- Review a shape optimization study
- Promote a mesh to create a new design
- Design creation to match a shape optimization mesh
- Validate through static stress simulation
- Review and refine a design
- Practice exercise
- Challenge exercise

Nonlinear response, buckling, and modal frequencies

- Module overview
- Define and solve a nonlinear static stress study
- Review nonlinear results
- Refine the model and rerun the study
- Define and solve a buckling study
- Review and refine a buckling study

- Review a final buckling study
- Define and solve a modal frequency study
- Review modal results
- Modify the model to reduce the mass participation
- Create a rigid body connector
- Explore point masses
- Apply additional force types
- Simulate pressure
- Practice exercise
- Challenge exercise

Thermal and thermal stress

- Module overview
- Prepare a model for thermal simulation
- Set up thermal study materials
- Understand and apply types of thermal loads
- Solve a thermal study and review the results
- Clone a simulation model
- Set up a thermal stress study
- Set up mesh and contacts
- Modify a thermal stress study
- Event simulation setup
- Event simulation results review
- Practice exercise
- Challenge exercise