



## Welcome Femap and NX Nastran Colleague,

This week-long course will take the new user from ground floor through FEA best practices to advanced subjects dealing with manifold and non-manifold surface modeling, detailed plate meshing and tet versus hex meshing. The final day will finish with a focus on customization and automation using Excel and Femap's own API interface. The course will be fast paced and follow a workshop format with theory, practice and Q&A sessions.

**When:** April 15-19, 2013

**Where:** Portland, OR

**Cost:** \$485/day. *Students may attend the Foundation and Advanced Sections (four days) or the complete week with the addition of the Customization/Automation training.*

**What's Included:** Course manual with DVD. One lunch and one social event are provided to encourage class interaction with fellow users.

**Registration:** *Early registration is encouraged since space is limited to 18 students and it is expected that the class will fill.*

To register please send email to:  
Training@PredictiveEngineering.com  
Attn: George Laird, Ph.D., P.E.

### About Predictive Engineering

Based in Portland, Oregon, Predictive has over 16 years experience with Femap and Nastran and has developed a solid reputation as the "go to company" for Femap training and services. References can be obtained at our website: [www.PredictiveEngineering.com](http://www.PredictiveEngineering.com).



## Course Outline

### Foundation of FEA Modeling with Femap + NX Nastran (Two Days)

- I. FEA theoretical background w.r.t beam, isoparametric and special elements
- II. Tour of Femap interface: Preferences, Panes, Toolboxes, Help and Tips & Tricks
- III. Femap modeling workflow for Beam, Plate and Solid (BPS) elements
- IV. Static stress analysis and results interpretation of BPS elements
- V. Introduction to plate and solid modeling with surface and solid geometry and Mesh Toolbox
- VI. Introduction to Assembly Modeling: Glued, Contact and Rigid Element Usage

### Advanced Femap + NX Nastran (Two Days)

- I. Surface modeling using manifold and non-manifold geometries
- II. Advanced surface preparation for high-accuracy plate modeling
- III. Meshing toolbox tips and tricks with Jacobian Optimization
- IV. Building efficient assemblies via efficient solid modeling (tet and hex elements) and linear contact
- V. Introduction to linear dynamics (modal analysis tips and tricks)
- VI. Non-linear analysis: geometric versus material non-linearity and best practices

### Customization & Automation of Femap (One Day)

- I. Automation of results processing via Excel
- II. Introduction to Femap's macro capability
- III. Introduction to Femap's API via Custom Tools
- IV. Programming Femap's API