

ESRD LIVE WEB-BASED TRAINING OPTIONS - 2017

STRESSCHECK BASIC TRAINING PLUS LINEAR ELASTICITY

The Web-based Basic Training plus Linear Elasticity class is a 5-day course designed to familiarize the student with the StressCheck graphical user interface and provide an introduction to the p-version finite element method (p-FEM). The student will obtain a basic knowledge of 2D and 3D model construction techniques, learn how to execute a linear solutions and perform a wide range of post-processing operations. Students will receive lectures and hands-on tutorials covering the fundamental concepts of the p-FEM that include meshing, applying boundary conditions and quality assurance procedures. **Basic training is a prerequisite to any advanced training workshops.**

NOTE: Training Manuals will be provided as PDF's. It is recommended that the manuals are printed for each student.

- Key Topics:
 - P-version FEA, convergence, errors of idealization and discretization
 - Basics of StressCheck, GUI layout, solver, pre- and post-processing
 - Parametric modeling guidelines, meshing and boundary conditions
 - Importing and modifying CAD files
 - Basics of multi-body contact setup and post-processing
 - CAE Handbook
- Daily Schedule:
 - Day 1 – Monday (TOTAL: ~5 hours)
 - 2 hours of Web-based Lectures/Discussions
 - ~1 hour of student/instructor working Exercises
 - ~1-2 hours of student working Exercises
 - Day 2 – Tuesday (TOTAL: ~5 hours)
 - 2 hours of Web-based Lectures/Discussions
 - ~1 hour of student/instructor working Exercises
 - ~1-2 hours of student working Exercises
 - Day 3 – Wednesday (TOTAL: ~4 hours)
 - 1 hour of Web-based Lectures
 - ~1 hour of student/instructor working Exercises
 - ~2-3 hours of student working Exercises
 - Day 4 – Thursday (TOTAL: ~4 hours)
 - 1 hour of Web-based Lectures
 - ~1 hour of student/instructor working Exercises
 - ~2-3 hours of student working Exercises
 - Day 5 – Friday (TOTAL: ~1 hour)
 - 1 hour of Web-based to review the week.

STRESSCHECK ADVANCED TRAINING IN FRACTURE MECHANICS

The 3-day Web-based Advanced Fracture Mechanics course has a lecture presenting an overview on capabilities and functionality in Fracture Mechanics. In this class the student will develop a comprehensive understanding of the Fracture Mechanics pre- and post-processing capabilities for performing detail analyses for cracked structures.

NOTE: Training Manuals will be provided as PDF's. It is recommended that the manuals are printed for each student.

- **Key Topics:**
 - Linear elastic fracture mechanics (LEFM), contour integral method, J-integral
 - Modeling and meshing cracks in StressCheck, best practices in 2D/3D
 - Boundary layer meshing
 - Extracting stress intensity factors (SIFs)
 - Advanced fracture mechanics analysis
- **Daily Schedule:**
 - Day 1 – Monday (TOTAL: ~3 hours)
 - 1 hour of Web-based Lectures
 - ~1 hour of student/instructor working Exercises
 - ~1-2 hours of student working Exercises
 - Day 2 – Tuesday (TOTAL: ~3 hours)
 - 1 hour of Web-based Lectures
 - ~1 hour of student/instructor working Exercises
 - ~1-2 hours of student working Exercises
 - Day 3 – Wednesday (TOTAL: ~4 hours)
 - 1 hour of Web-based Lectures
 - ~1 hour of student/instructor working Exercises
 - ~2-3 hours of student working Exercises