LS-DYNA® Training

By Predictive Engineering

Implicit and Explicit Nonlinear Transient Analysis for Structural Mechanics

LSTC
Livermore Software Technology Corp.

When: May 13 - 17, 2019 (five days)
Where: Portland, Oregon
Cost: $2,850.00/student

What's Included: Course manual, notes and workshop video files will be provided on a flash drive for post-class refresher training. One lunch and one social event are provided to encourage class interaction with fellow users. Course provides 40 hours of professional continuing education credits.

Registration: Early registration is encouraged since space is limited to 15 students and it is expected that the class will fill. Class hours are 8am-5pm Mon-Thurs with Friday 7am-2pm.
To register please send email to:

Training@PredictiveEngineering.com
Attn: George Laird, PhD, PE

Computer: All course materials will be available on USB stick. We recommend that students configure and bring their own laptops since a 10,000 element LS-DYNA license is provided to provide continuity of learning after the class. We do have limited availability of loaner laptops for students.

Training Venue:
Our training venue will most likely be the River's Edge Hotel, located along Portland's beautiful waterfront. Please contact us for block room discount code.

About Predictive Engineering
Based in Portland, Oregon, Predictive has 15+ years of experience with LS-DYNA consulting, services and training. References available at our website:
www.PredictiveEngineering.com

FINITE ELEMENT ANALYSIS
Predictive Engineering

Engineering Short Course

This week-long course is directed toward the engineering professional simulating highly nonlinear, transient dynamic problems involving large deformations and contact between multiple bodies. Our goal is to provide a realistic foundation toward the practical usage of LS-DYNA as we have used it on hundreds of simulation projects.

The course is fast paced and follows a theory, usage discussion and workshop format followed up by Q&A sessions. All workshops are provided in video format for later review by the students.

Course Outline

Day 1: Theoretical Foundation
I. Implicit versus Explicit
II. Explicit Time Step - CFL (Workshop)
III. Mass Scaling – CMS/SMS (Workshop)
IV. Meshing for Explicit Success (Workshop)
V. Explicit Element Technology (Workshop)

Day 2: LSPP & Material Modeling
I. LS-PrePost Philosophy (Workshop)
II. Material Modeling: Metals, Elastomers, Foams (Workshop)
III. Equation of State (EOS)
IV. Material Failure & Fracture (Workshop)
V. Rigid Bodies (Workshop)

Day 3: Contact & Load Initialization
I. Contact Theory & Application (Workshop)
II. Edge-to-Edge Contact & Other Pathologies (Workshop)
III. Tied-Contact: Mesh Transitions, Gluing, Welding (Workshop)
IV. Negative Sliding Interface Energy (Workshop)
V. Implicit-to-Explicit Switching: Load Initialization (Workshop)

Day 4: Drop Test, Damping & Bird Strike (SPH)
I. Dynamic Relaxation for Bolt Preload (Workshop)
II. Damping (Workshop)
III. Drop Test Simulation (Workshop)
IV. Smoothed Particle Hydrodynamics (Workshop)
V. Bird Strike / Ballistic Impact (Workshop)

Day 5: Implicit Analysis: Linear to Nonlinear to Vibration
I. Observations on Implicit versus Explicit Analysis
II. Implicit analysis: Linear, Static Stress Analysis (Workshop)
III. Nonlinear Implicit Analysis with Mortar Contact (Workshop)
IV. Troubleshooting Nonlinear Implicit Analyses (Workshop)
V. Normal Modes Analysis, Sine Sweep and PSD Analyses
VI. PSD Analysis with Fatigue Assessment (Workshop)
VII. Q&A