



15th LS-DYNA International Conference & Users Meeting

Post-Conference Training (2 day) Wed & Thurs, June 12th & 13th, 2018, 9am-5pm *Edward Hotel & Convention Center, Dearborn, MI*

Fracture, Damage and Failure Using LS-DYNA

Instructor: Dr. Ala (Al) Tabiei

Objective

This course will allow LS-DYNA users to model Fracture, Damage, and Failure. The different methodology to model failure and fracture in LS-DYNA will be presented and discussed. All formulation in LS-DYNA including Lagrangian, Eulerian, SPH, XFEM, EFG, and the DEM methods etc. will be discussed. Various examples will be presented in 16 hours.

COURSE CONTENT

- Chapter-1 Introduction & Historical Review
 - Brittle Failure
 - Ductile Failure
- Chapter-2 Fundamental Theoretical Concepts
 - Failure Theories
 - Damage Models
 - Fracture Mechanics
- Chapter-3 Material Models with Failure & Damage
- Chapter-4 Fracture & Computational Methods
 - Lagrangian
 - Eulerian
 - SPH
 - SPG
 - XFEM
 - EFG
 - DEM
- Chapter-5 Element Erosion; Advantages & Short Comings
- Chapter-6 Current Capabilities to Model Failure & Damage
- Chapter-7 Current Capabilities to Model Fracture
- Chapter-8 Damage Verification Examples
- Chapter-9 Fracture Verification Examples
- Chapter-10 Other Capabilities to Model Fracture
- Chapter-11 Modeling Delamination and Debonding
- Cohesive Elements
- Tied Contact with Failure
- Chapter-12 Summary and Concluding Remarks

Workshop - There will be several examples, which are designed to understand and reinforce the lectures and the concepts presented in the course.

For further information regarding pre- and post-conference training, please consult the conference website www.ls-dynaconferences.com or send email to ConfTraining@lstc.com.