

Simulation of sheet metal forming processes using LS-DYNA

This course is intended for those who are working or are going to work with forming simulations. The course is also of interest for those that consider using forming simulations as a part of their product/process development. LS-DYNA is a leading finite element program in large deformation mechanics, crashworthiness design and metal forming simulations.

Prior knowledge: Attendees are expected to have basic understanding of the finite element method and LS-DYNA.

Course outline:

- Introduction
- The metal forming process
 - Various forming processes
 - Defects
 - Multi step forming
- Material characteristics and material testing
 - Tensile testing
 - FLD testing
- FEM Theory
 - Governing Equations
 - Plasticity
 - Matrix equations
- LS-PREPOST
 - Generate the model and examine the results
- Material models
 - Material models important for sheet metal forming will be discussed
- LS-DYNA guide:
 - Set up and simulate a complete forming process from initial trimming to final springback
 - One-step solvers and their use
 - Using forming simulations as an efficient tool for product and process development
 - o Benefits
 - o What is needed to get high quality results in a minimum of time
 - o When to use one-step and incremental solvers
- Troubleshooting
- Case studies
- Exercises

The course is given by the staff of Engineering Research Nordic AB. The number of accepted course attendee is limited to 12.

Place: ERAB's office, Garnisonen, Linköping.

A roadmap is available on <http://www.erab.se>.

Date: See <http://www.erab.se/courses>

Schedule: The course starts at 09⁰⁰ the first day and 08³⁰ the following days. The course ends at approximately 17⁰⁰. On the last day of the course, the course ends at 16⁰⁰.

Course fee: The course fee includes course notes, lunches, refreshments and one evening meal, excluding VAT. See <http://www.erab.se/courses> for actual course fee. Hotel accommodation is not included in the course fee

Registration: Online registration at <http://www.erab.se/courses>

Confirmation: A confirmation will be sent out by e-mail upon registration.

Cancellation: Classes can be cancelled up to 10 days before course start if the number of attendees is too small. Any fees paid to ERAB will be returned if the class is cancelled. For cancellations by attendees received later than two weeks before course start the attendee will be invoiced 50% of the course fee.

Questions: E-mail course@erab.se