

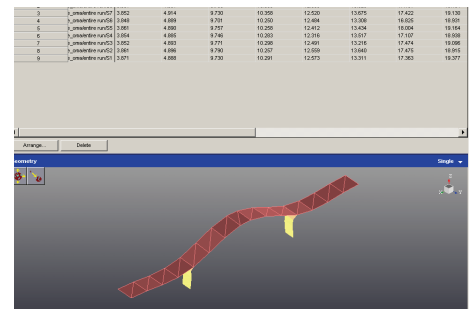
## Practical Experimental Modal Analysis 10th - 12th May 2011, University of Liverpool

This 3 day seminar combines theory with hands on practical sessions and is run in conjunction with a leading university for structural dynamics research.

The course is suitable for engineers who want to understand the theory and practise of experimental modal analysis, as well as managers and others that need to have an overview of the subject.

This seminar will introduce the theory and application of the latest techniques for experimental modal analysis. It answers questions like:

- Where are the optimal locations for transducers and shakers?
- What excitation signal should be used?
- What curve fitting technique should be used, and why?
- What is MIMO modal analysis?
- What can I do with the results – how can I be sure they're right?



### Agenda

#### Day 1 : 19.00am – 5.30 PM

- Introduction and overview of Modal Test
- Vibration Theory
  - Single degree of freedom systems
  - MDOF systems
  - Modal Model
- Signal Processing for Modal Testing
- Modal Testing
  - Impact test
  - Shaker Test

#### Day 2 : 9.00am – 5.30 PM

- Modal parameter estimation
  - Time Domain
  - Frequency Domain
  - MDOF
  - Scaling
- Modal Model Validation
  - Mode Complexity
  - MAC
  - FRF Synthesis
- Practical Sessions

#### Day 3 : 9.00am – 3.30 PM

- Operational Modal Analysis
- Operating deflection shapes
- Advanced Acquisition
- Practical Testing – the what's and the whys
- Q&A Session

#### During the practical sessions on day 1 and 2, the following topics will be covered:

- Use of single point and multi-point excitation including –
  - Use of impact hammer, electro-dynamics shakers
  - Random and stepped sine input
  - Techniques applied to different test structures (plate, wing section, car body in white, exhaust system)
- Test set-up
  - Calibration of the measurement chain
  - Check of measurement quality
- On-line and of-line visualisation of driving point autopower, FRF and coherence
- Comparison of H1, H2 and Hv estimators
- Computation of ordinary, partial and multiple coherence

### Venue

University of Liverpool

→ Registration on [www.lmsintl.com/modal-course-lms-uk-liverpool-university](http://www.lmsintl.com/modal-course-lms-uk-liverpool-university)