

Short Course on

Introduction to Structural Design Optimization (OPT101)

Date and Location

October 20-22, 2010

Hotel Mercure Leuven Center,
Alfons Smetsplein 7, 3000 Leuven,
Belgium

Course Language

The course language is English.

Presenters

Ir. Eddy Dascotte, *DDS NV*
Dr. Tom Lauwagie, *DDS NV*

Course Fee

€ 950 euro per person.

This fee includes taxes (21 %),
course materials, lunches and
refreshments.

Registration

Advance registration is required. To
register, please complete the
attached form and return by fax or
use the online registration form at
<http://www.femtools.com/courses>.

Upon registration you will receive an
email confirmation of your reservation
with additional practical information
about the venue and course.

Cancellation Policy

A full refund will be made for all
cancellations received 7 days before
the start of the course. Afterwards
50% of the costs will be charged.

Substitute attendees will be accepted
at any time.

In the event that we have to cancel
the course, you will be refunded in full
but we disclaim any further liability.

Additional Information

<http://www.femtools.com/courses>
info@femtools.com
+32 16 40 23 00

Overview

Designing products today poses many challenges and often conflicting requirements need to be satisfied: products must be stronger, lighter, safer, and quieter.

This three-day course provides an overview of the theoretical concepts behind structural optimization methods, including general constrained nonlinear optimization and common structural optimization problems like size, shape, topology, topometry and material optimization. Methods are outlined with minimum mathematics and are illustrated by practical software implementations and applications.

The FEMtools Optimization software will be used for hands-on exercises during approximately half of the time. Participants are invited to bring a portable computer to use during the hands-on exercises.

Intended Audience

The course is suitable for anyone interested in learning the state-of-the-art in simulation-based optimization techniques. Participants typically have a background in structural analysis. The methods shown can be applied to a wide range of industrial applications.

Course Contents

- Formulation of a general nonlinear optimization problem (design variables, objectives, constraints)
- Multi-objective optimization
- Viewing and interpretation of optimization results
- Database management, interfacing with FE solvers and using internal and external finite element solvers for re-analysis (ABAQUS, NASTRAN, ANSYS, I-DEAS, and others)
- Sensitivity analysis
- Size optimization
- Shape optimization
- Topology optimization
- Optimization using manufacturing constraints
- Topometry optimization
- Topography optimization (beads)
- Composites materials optimization
- Design of Experiments (DOE) and Response Surface Method (RSM)
- Probabilistic design optimization using Monte Carlo simulation
- Using approximations for fast re-analysis in structural dynamics
- Using scripting for database management, analysis integration, process automation and reporting
- Multidisciplinary optimization
- Industrial examples

Course Registration Form

Participant(s):

Name(s)

Company

Address

E-mail

Telephone Fax

Date Signature

Invoice Address:

Company

Invoice Address

VAT Number:
(if applicable)

I want to register for the following courses:

- VVU101 – Verification, Validation and Updating of FE Models (May 5-7, 2010) – 950 euro
- OPT101 – Introduction to Structural Design Optimization (October 20-22, 2010) – 950 euro

Course Fee: Fees will be charged by invoice and include 21% taxes, course materials, lunches and refreshments.

Cancellation Conditions: A full refund will be made for all cancellations received 7 days before the start of the course. Afterwards 50% of the costs will be charged. Substitute attendees will be accepted at any time. In the event that we have to cancel the course, you will be refunded in full but we disclaim any further liability.

To register, complete and fax this form to +32 16 40 24 00

Dynamic Design Solutions N.V.
Interleuvenlaan 64, 3001 Leuven, Belgium
Tel. +32 (0)16 40 23 00, Fax +32 (0)16 40 24 00
info@femtools.com, <http://www.femtools.com>