



SimTech Simulation et Technologie
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SimTech OFFER IN INDUSTRIAL TRAINING

SimTech Simulation et Technologie: general presentation

Founded in 1993, SimTech provides Research and Innovation to French and European customers (e.g. ALSTOM, EADS, FERRARI, FIAT, LIER, PSA, RENAULT, SNR, THALES). SimTech projects blend **mechanics** and **simulation** with **optimization** and **software development**, in fields as diverse as:

- crash and safety
- structural analysis and fatigue
- metal forming and assembly
- computational fluid dynamics

SimTech engineers hold PhD degrees from among the best engineering schools and have retained close connections with the academic world. Edmondo Di Pasquale, director of the company, is an Associate Professor at the University of Valenciennes. Based on their university teaching experience, SimTech can offer training programs to accompany its activity in engineering consulting and technology transfer. In the following, a list of proposed courses

Pedestrian Safety

(Four 3-hour modules)

- Module 1: Biomechanical foundation of the safety indices
- Module 2 :Regulation environment
- Module 3: Analysis and design methodology I
- Module 4: Analysis and design methodology II

Introduction to automotive crash and security

(Four 3-hour modules)

- Module 1: Basis of impact mechanics
- Module 2 :Regulation environment
- Module 3: Analysis and design methodology I
- Module 4: Analysis and design methodology II

Introduction to railway structure design

(Four 3-hour modules)

- Module 1: Requirements and regulation environment
- Module 2 :Materials and manufacturing processes
- Module 3: Assembly and control processes I
- Module 4: Analysis and design methodology II



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Structural Optimization

(Two 3-hour modules)

- Module 1: Size and Shape Optimization
- Module 2 :Topology Optimization

(OPTISTRUCT™ or GENESIS™ training sessions can be organized)

Mathematical optimization in engineering

(Four 3-hour modules)

- Module 1: Variability in engineering systems. Sensibility analysis, variance analysis, DOE
- Module 2: Mathematical optimization: gradient methods
- Module 3: Mathematical optimization: response surface methods, evolutionary algorithms
- Module 4: Multidisciplinary optimization and other special issues

(Hands-on training can be organized)

Sheet Metal Forming Mechanics and Simulation

(Three 3-hour modules)

- Module 1: Forming process and design
- Module 2 :Mechanics of metal forming
- Module 3: Special topics
- Module 4: Metal forming simulation

Road Restraining Systems

(Three 3-hour modules)

- Module 1: Biomechanical foundation of the safety indices
- Module 2 :Regulation environment
- Module 3: Analysis and design methodology

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