

### Description and purpose

The course aims to give participants in-depth knowledge about the legislation that applies to machine safety:

- Understand - What are the Directives and the standards? Which ones have to be applied to a given machine?
- Know the Machinery Directive.
- Know about the most important safety standards to take into account for CE Marking.
- Perform the risk assessment of the machine.
- Know the principal standards regarding mechanical, pneumatic, hydraulic and electrical design.

### Intended for:

- Machine manufacturers who need a thorough knowledge of the most important safety regulations that affect machinery design.

The course is suitable for technical personnel involved in the machinery engineering process and/or who validate a layout or have to modify a machine.

### Examples

Some examples of the course contents are shown below:



Definitions of the Machinery Directive



Calculation of vertical ESPE safety distance



IFA SISTEMA software

### Contents / agenda

#### Day 1 (5 H):

- Directive, Royal Decrees and Regulations.
- Machinery Directive 2006/42/EC.
- Work equipment R.D. 1215/97.
- Other Directives, B.T., CEM, ATEX, summary.

#### Day 2 (5H):

- EN ISO 11161, Safety of machinery. Integrated manufacturing systems. Fundamental requirements.
- EN ISO 10218-2 Robots and robotic devices. Safety requirements for industrial robots. Part 2: Robot systems and integration.

#### Day 3 (5 H):

- General principles for design, risk assessment and risk reduction, EN ISO 12100.

#### Day 4 (5 H):

- EN ISO 13857, Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs.

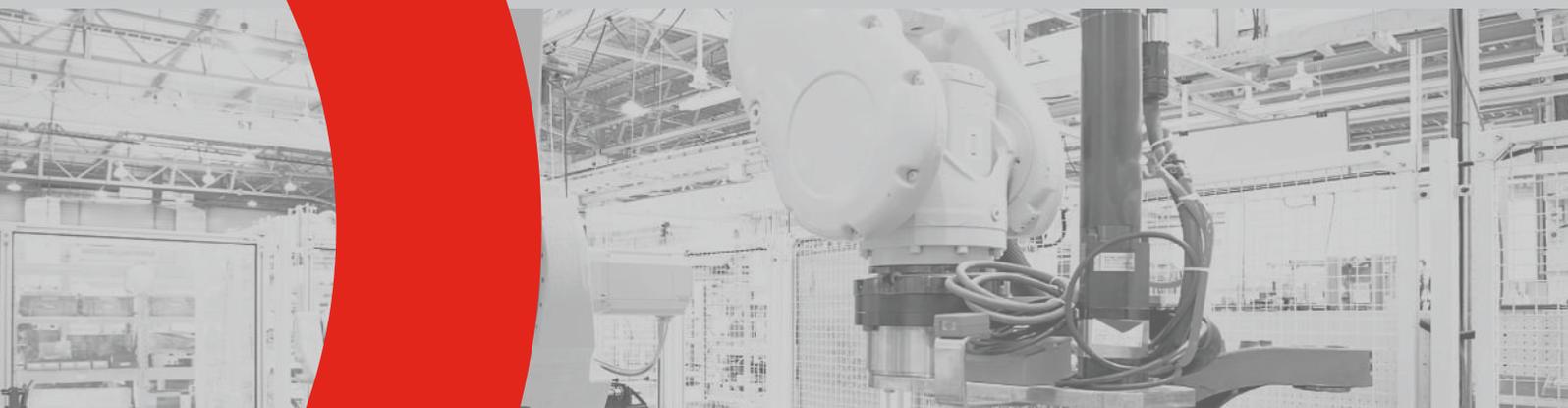
### Documentation

Each student will receive a paper dossier of the course contents, in A4 colour and in Spanish.

A certificate of attendance will be issued.

### Speakers

The speakers will be engineers specialising in machinery safety from the company i9s, S.A.



## **i9s, S.A.**

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