



Course code Course title
METRO 007 Metallurgy of Welding Processes

Course summary

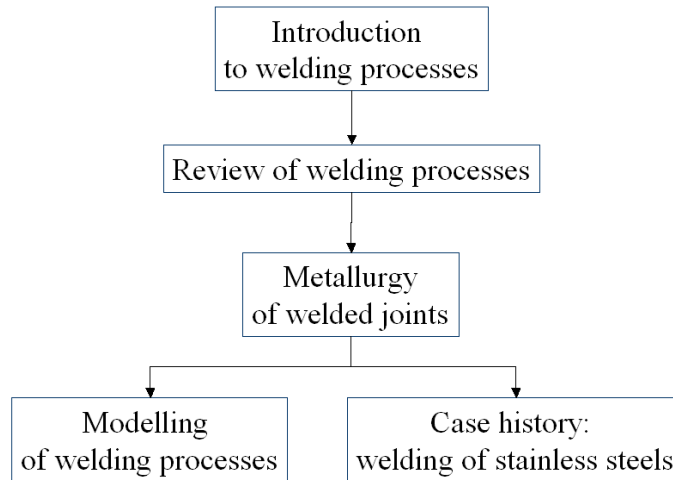
The course gives an introduction to welding processes and to the related metallurgical aspects. After a short review of the main welding technologies available, the key-features of welding (molten zone, heat affected zone, thermal fields) are presented. The basics of analytical and numerical modelling of welding are described, with respect to various metals and alloys. Case histories are finally introduced, to display the peculiarities of welding applied to specific engineering alloys.

Lectures list

n.	Title	Summary	Lecturer	Duration
1	Introduction to welding	The key-concepts of welding are presented and critically reviewed	Vedani, Maurizio	33'
2.	Review of Welding Processes	The main welding processes (arc welding, plasma welding, laser and electron beam welding) are presented	Bonollo, Franco	52'
3.	Metallurgy of welded joints	The main metallurgical regions in welding are presented: molten zone, heat affected zone, parent metal	Vedani, Maurizio	37'
4.	Modelling of welding processes	The structure and the potential of analytical and numerical modelling of welding are described	Bonollo, Franco	46'
5.	Case history: Welding of Stainless Steels	Some microstructural, mechanical and corrosion features related to welding of duplex and superduplex stainless steels are reviewed	Bonollo, Franco	41'
				3h 29'

Lectures prerequisites chart

Metallurgy of Welding Processes



Each arrow means a prerequisite.