



# Welding Metallurgy of Aluminum Alloys

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## Fundamentals

**2 day course – lectures and some laboratory examination**

**Alloy and temper designation systems, wrought products, cast alloys, powder metallurgy alloys, heat-treating, extrusion, metallographic methods, corrosion aspects, weldable and non-weldable grades**

## Welding Processes and Metallurgy

**Commonly used welding processes such as GMAW, RW, SMAW, GTAW, EBW, PAW, FRW along with cleaning methods, weld and heat-affected zone microstructures, hardness values, shear strengths, porosity and cracking issues, fatigue properties, corrosion and stress-corrosion behavior**

## Newer Welding Processes For Improved Structural Integrity

**Focused Current Resistance Welding (FCRW), significantly higher HAZ hardness values and structural strengths, dissimilar material welding**

