



AUSTRALIAN STEEL INSTITUTE

KNOWLEDGE SERIES MODULE 2: STEEL AND STEELMAKING

ASI KNOWLEDGE SERIES

- KNOWLEDGE SERIES MODULE 1
Introduction to the Knowledge Series
- KNOWLEDGE SERIES MODULE 2
Steel and Steel Making
- KNOWLEDGE SERIES MODULE 3
The Metallurgy of Steel
- KNOWLEDGE SERIES MODULE 4
The Engineering Properties of Steel
- KNOWLEDGE SERIES MODULE 5
Structural Steel Types
- KNOWLEDGE SERIES MODULE 6
The Steel Supply Chain
- KNOWLEDGE SERIES MODULE 7
Steel Quality and Compliance
- KNOWLEDGE SERIES MODULE 8a
Steel Structures – An Introduction
- KNOWLEDGE SERIES MODULE 8b
Steel Structures – Beyond the Basics

COURSE OUTLINE

Lesson 1: What is steel

- Steel properties
- Performance attributes:
 - Strength
 - Stiffness
 - Ductility
 - Corrosion resistance
- Takeaways

Lesson 2: History of iron & steelmaking

- First simple furnaces
- Blast furnaces
- Puddling furnaces
- Bessemer process
- Open hearth process
- Electric arc process
- Modern steelmaking process

Lesson 3: The modern steelmaking process

- Context
- Overview
- Stage 1: Preparation of raw materials
- Stage 2: Reduction (iron making)
- Stage 3: Refinement (steel making) – BOS and EAF; ladle refinement
- Stage 4: Casting
- Stage 5: Shaping and coating – hot rolling, cold rolling, strip processing
- Influence of processing on steel properties
- Coating and corrosion protection

Lesson 4: Steel types

- Carbon steel
- Alloy steel
- Stainless steel
- Tool steel

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