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CONSTRUCTION MANAGEMENT | CM-044

Bridge Construction and Maintenance Management

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Course content

Why Attend

Bridges are critical links in transport networks, and their construction and long-term care demand careful engineering, planning and management. New bridges must be built safely over rivers, roads and railways, often under traffic and with tight possession windows, while ageing bridges require inspection, assessment and maintenance to stay safe and in service.

This Bridge Construction and Maintenance Management training course covers the full life cycle of bridge assets. Participants learn about bridge types and structural behaviour, construction methods including precast, incremental launch and cantilever construction, temporary works and lifting operations, quality control, inspection regimes, condition assessment, deterioration mechanisms, repair and strengthening techniques and asset management planning.

Course Methodology

• The course combines technical presentations with project case studies, inspection photographs and planning exercises. Participants plan a construction sequence, assess defects from inspection records, prioritise maintenance using condition data and develop outline asset management plans.

Course Objectives

• Explain the main bridge types and how they carry loads

• Compare bridge construction methods and their applications

• Plan bridge construction including temporary works and lifting

• Manage quality control for bridge materials and workmanship

• Plan and conduct bridge inspections

• Identify common deterioration mechanisms and defects

Target Audience

• Bridge engineers and structural engineers

• Construction and project managers

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- Highway and railway asset managers
- Bridge inspectors

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Course outline

Detailed course outline

Day-by-day outline for Bridge Construction and Maintenance Management.

Day 1 - Bridge Types and Behaviour

- 09:00-09:30 | Beam, arch, truss, cable-stayed and suspension bridges
- 09:30-10:00 | Load paths and structural behaviour of bridges
- 10:00-10:30 | Materials: concrete, steel, composite and masonry
- 10:30-11:00 | Bearings, joints and drainage components
- 11:00-11:30 | Coffee break
- 11:30-12:30 | Design codes and loading standards in overview
- 12:30-13:00 | Lessons from bridge failures and collapses
- 13:00-14:00 | Exercise: identifying components on bridge drawings

Day 2 - Bridge Construction Methods

- 09:00-09:34 | Foundations, piers and abutments construction
- 09:34-10:08 | Precast beams and deck construction
- 10:08-10:42 | Incremental launching and balanced cantilever methods
- 10:42-11:00 | Steel girder erection and composite decks
- 11:00-11:30 | Coffee break
- 11:30-11:46 | Steel girder erection and composite decks (continued)
- 11:46-12:20 | Construction over live roads, rail and water
- 12:20-12:53 | Heavy lifting and crane operations for bridges
- 12:53-14:00 | Workshop: planning a bridge construction sequence

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Day 3 - Quality, Safety and Temporary Works

- 09:00-09:34 | Quality control of concrete, reinforcement and prestressing
- 09:34-10:08 | Welding and coating quality for steel bridges
- 10:08-10:42 | Temporary works for bridge construction
- 10:42-11:00 | Working at height and over water safely
- 11:00-11:30 | Coffee break
- 11:30-11:46 | Working at height and over water safely (continued)
- 11:46-12:20 | Traffic management and possessions planning
- 12:20-12:53 | Commissioning, load testing and handover
- 12:53-14:00 | Case study: managing a bridge project under traffic

Day 4 - Inspection and Condition Assessment

- 09:00-09:34 | Types and frequencies of bridge inspections
- 09:34-10:08 | Inspection access methods and safety
- 10:08-10:42 | Concrete deterioration: corrosion, cracking and spalling
- 10:42-11:00 | Steel corrosion, fatigue and coating failure
- 11:00-11:30 | Coffee break
- 11:30-11:46 | Steel corrosion, fatigue and coating failure (continued)
- 11:46-12:20 | Scour and hydraulic risks to bridge foundations
- 12:20-12:53 | Condition rating systems and inspection reports
- 12:53-14:00 | Exercise: assessing defects from inspection records

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Day 5 - Maintenance, Repair and Asset Management

- 09:00-09:39 | Routine and preventive maintenance activities
- 09:39-10:18 | Concrete repair and cathodic protection
- 10:18-10:57 | Strengthening with fibre-reinforced polymers and steel plates
- 10:57-11:00 | Bearing and expansion joint replacement
- 11:00-11:30 | Coffee break
- 11:30-12:06 | Bearing and expansion joint replacement (continued)
- 12:06-12:44 | Prioritising maintenance with condition and risk data
- 12:44-13:22 | Whole-life costing and bridge asset management plans
- 13:22-14:00 | Personal action plan for bridge management

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Seminar dates

Available seminar dates

Live dates and pricing for Bridge Construction and Maintenance Management generated from the course details page.

Date	Location	Format	Fee
21 - 25 December 2026	London	Classroom	**€2,915**
7 - 11 December 2026	Barcelona	Classroom	**€2,275**
14 - 18 December 2026	Frankfurt	Classroom	**€2,175**
11 - 15 January 2027	London	Classroom	**€2,915**
18 - 22 January 2027	Barcelona	Classroom	**€2,275**
25 - 29 January 2027	Frankfurt	Classroom	**€2,175**
4 - 8 January 2027	Munich	Classroom	**€2,425**
15 - 19 February 2027	London	Classroom	**€2,915**
22 - 26 February 2027	Barcelona	Classroom	**€2,275**
1 - 5 February 2027	Frankfurt	Classroom	**€2,175**

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Seminar dates

Available seminar dates

Live dates and pricing for Bridge Construction and Maintenance Management generated from the course details page.

Date	Location	Format	Fee
8 - 12 February 2027	Paris	Classroom	**€2,810**
22 - 26 March 2027	London	Classroom	**€2,915**
1 - 5 March 2027	Barcelona	Classroom	**€2,275**
8 - 12 March 2027	Frankfurt	Classroom	**€2,175**
15 - 19 March 2027	Rome	Classroom	**€2,830**
5 - 9 April 2027	London	Classroom	**€2,915**
12 - 16 April 2027	Barcelona	Classroom	**€2,275**
19 - 23 April 2027	Frankfurt	Classroom	**€2,175**
26 - 30 April 2027	Vienna	Classroom	**€3,425**
10 - 14 May 2027	London	Classroom	**€2,915**

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Seminar dates

Available seminar dates

Live dates and pricing for Bridge Construction and Maintenance Management generated from the course details page.

Date	Location	Format	Fee
17 - 21 May 2027	Barcelona	Classroom	**€2,275**
24 - 28 May 2027	Frankfurt	Classroom	**€2,175**
3 - 7 May 2027	Amsterdam	Classroom	**€3,215**
21 - 25 June 2027	London	Classroom	**€2,915**
7 - 11 June 2027	Barcelona	Classroom	**€2,275**
14 - 18 June 2027	Frankfurt	Classroom	**€2,175**
26 - 30 July 2027	London	Classroom	**€2,915**
5 - 9 July 2027	Barcelona	Classroom	**€2,275**
12 - 16 July 2027	Frankfurt	Classroom	**€2,175**
19 - 23 July 2027	Dubai	Classroom	**€2,845**

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Seminar dates

Available seminar dates

Live dates and pricing for Bridge Construction and Maintenance Management generated from the course details page.

Date	Location	Format	Fee
2 - 6 August 2027	London	Classroom	**€2,915**
9 - 13 August 2027	Barcelona	Classroom	**€2,275**
16 - 20 August 2027	Frankfurt	Classroom	**€2,175**
23 - 27 August 2027	Geneva	Classroom	**€3,315**
20 - 24 September 2027	London	Classroom	**€2,915**
6 - 10 September 2027	Barcelona	Classroom	**€2,275**
13 - 17 September 2027	Frankfurt	Classroom	**€2,175**
18 - 22 October 2027	London	Classroom	**€2,915**
25 - 29 October 2027	Barcelona	Classroom	**€2,275**
4 - 8 October 2027	Frankfurt	Classroom	**€2,175**

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Seminar dates

Available seminar dates

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Date	Location	Format	Fee
11 - 15 October 2027	Kuala lumpur	Classroom	**€2,425**
22 - 26 November 2027	London	Classroom	**€2,915**
1 - 5 November 2027	Barcelona	Classroom	**€2,275**
8 - 12 November 2027	Frankfurt	Classroom	**€2,175**
15 - 19 November 2027	Madrid	Classroom	**€3,400**
6 - 10 December 2027	London	Classroom	**€2,915**
13 - 17 December 2027	Barcelona	Classroom	**€2,275**
20 - 24 December 2027	Frankfurt	Classroom	**€2,175**
27 - 31 December 2027	Munich	Classroom	**€2,425**
21 - 25 December 2026	Online / Live	Online / Live	**€1,625**

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Live dates and pricing for Bridge Construction and Maintenance Management generated from the course details page.

Date	Location	Format	Fee
7 - 11 December 2026	Online / Live	Online / Live	**€1,625**
14 - 18 December 2026	Online / Live	Online / Live	**€1,625**
11 - 15 January 2027	Online / Live	Online / Live	**€1,625**
18 - 22 January 2027	Online / Live	Online / Live	**€1,625**
25 - 29 January 2027	Online / Live	Online / Live	**€1,625**
4 - 8 January 2027	Online / Live	Online / Live	**€1,625**
15 - 19 February 2027	Online / Live	Online / Live	**€1,625**
22 - 26 February 2027	Online / Live	Online / Live	**€1,625**
1 - 5 February 2027	Online / Live	Online / Live	**€1,625**
8 - 12 February 2027	Online / Live	Online / Live	**€1,625**

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Date	Location	Format	Fee
22 - 26 March 2027	Online / Live	Online / Live	**€1,625**
1 - 5 March 2027	Online / Live	Online / Live	**€1,625**
8 - 12 March 2027	Online / Live	Online / Live	**€1,625**
15 - 19 March 2027	Online / Live	Online / Live	**€1,625**
5 - 9 April 2027	Online / Live	Online / Live	**€1,625**
12 - 16 April 2027	Online / Live	Online / Live	**€1,625**
19 - 23 April 2027	Online / Live	Online / Live	**€1,625**
26 - 30 April 2027	Online / Live	Online / Live	**€1,625**
10 - 14 May 2027	Online / Live	Online / Live	**€1,625**
17 - 21 May 2027	Online / Live	Online / Live	**€1,625**

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Date	Location	Format	Fee
24 - 28 May 2027	Online / Live	Online / Live	**€1,625**
3 - 7 May 2027	Online / Live	Online / Live	**€1,625**
21 - 25 June 2027	Online / Live	Online / Live	**€1,625**
7 - 11 June 2027	Online / Live	Online / Live	**€1,625**
14 - 18 June 2027	Online / Live	Online / Live	**€1,625**
26 - 30 July 2027	Online / Live	Online / Live	**€1,625**
5 - 9 July 2027	Online / Live	Online / Live	**€1,625**
12 - 16 July 2027	Online / Live	Online / Live	**€1,625**
19 - 23 July 2027	Online / Live	Online / Live	**€1,625**
2 - 6 August 2027	Online / Live	Online / Live	**€1,625**

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Date	Location	Format	Fee
9 - 13 August 2027	Online / Live	Online / Live	**€1,625**
16 - 20 August 2027	Online / Live	Online / Live	**€1,625**
23 - 27 August 2027	Online / Live	Online / Live	**€1,625**
20 - 24 September 2027	Online / Live	Online / Live	**€1,625**
6 - 10 September 2027	Online / Live	Online / Live	**€1,625**
13 - 17 September 2027	Online / Live	Online / Live	**€1,625**
18 - 22 October 2027	Online / Live	Online / Live	**€1,625**
25 - 29 October 2027	Online / Live	Online / Live	**€1,625**
4 - 8 October 2027	Online / Live	Online / Live	**€1,625**
11 - 15 October 2027	Online / Live	Online / Live	**€1,625**

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Date	Location	Format	Fee
22 - 26 November 2027	Online / Live	Online / Live	**€1,625**
1 - 5 November 2027	Online / Live	Online / Live	**€1,625**
8 - 12 November 2027	Online / Live	Online / Live	**€1,625**
15 - 19 November 2027	Online / Live	Online / Live	**€1,625**
6 - 10 December 2027	Online / Live	Online / Live	**€1,625**
13 - 17 December 2027	Online / Live	Online / Live	**€1,625**
20 - 24 December 2027	Online / Live	Online / Live	**€1,625**
27 - 31 December 2027	Online / Live	Online / Live	**€1,625**