

# Concrete Technology

## Learning Centre

### Concrete Technology & Construction - General Principles – Stage 2

#### Course Syllabus

Designed to provide participants with an in-depth understanding of the fundamentals of concrete.

Detailed information is provided in **35 units**, grouped into **4 modules**:

**1. Constituent Materials      2. Concrete Properties**

**3. Production and Use      4. Construction Practice**

#### **Module 1, Constituent materials**

- Unit 00. Introduction to the course
- Unit 01. Health and safety
- Unit 02. Sustainability
- Unit 03. Portland cements and additions
- Unit 04. Non-Portland cements
- Unit 05. Natural aggregates
- Unit 06. Light-weight and heavy-weight aggregates
- Unit 07. Admixtures
- Unit 08. Mixing water
- Unit 09. Steel for reinforcing and prestressing
- Unit 10. Fibre-reinforced concrete

#### **Module 2, Properties of concrete**

- Unit 11. Fresh concrete
- Unit 12. Hardened concrete - behaviour under load
- Unit 13. Hardened concrete - dimensional changes
- Unit 14. Hardened concrete - durability
- Unit 15. Testing fresh and hardened concrete
- Unit 16. Quality control – statistical methods
- Unit 17. Specification
- Unit 18. Mix design

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### **Module 3, Production and use**

- Unit 19. Storage, batching and mixing
- Unit 20. Concrete production and supply
- Unit 21. Operation and maintenance of plant
- Unit 22. Ready-mixed concrete
- Unit 23. Precast concrete
- Unit 24. Formwork and falsework
- Unit 25. Reinforced concrete
- Unit 26. Prestressed concrete
- Unit 27. Management

### **Module 4, Construction practice**

- Unit 28. Transporting and placing
- Unit 29. Compaction and finishing
- Unit 30. Curing
- Unit 31. Concreting in hot and cold weather
- Unit 32. Joints
- Unit 33. Concrete finishes
- Unit 34. External concrete slabs
- Unit 35. Internal concrete slabs