

### TECHNOLOGY OF FLOOD PROTECTION

#### Information

*Entry level:* Vocational level

#### Learning targets

In the coming years, the water boards and the Department of Public Works, in cooperation with engineering firms and contractors, face a major task in the field of dike reinforcement. Prospective technical managers, project leaders, consultants, flood defence specialists and geotechnical engineers need in-depth, up-to-date and hands-on knowledge and expertise in dike construction, dike design and dike reinforcement to realize their dike reinforcement assignments.

The Dike Engineering course covers the technology, knowledge and insights needed to further develop technical craftsmanship. The course is made up of connecting modules around one theme.

#### Content

- **Module Dike Construction (16-day parts).**  
Structure, strength and loading of a dike. Type and classification of dikes and revetments along coasts and rivers, engineering structures and constructive (sheet pile) retaining walls, regional dikes, soil mechanics and the role of groundwater flow, soil properties and research, mechanisms of failure and limitation, performance of global (design) calculations and application of model instruments, innovative dike techniques.
- **Module Dike Design 2.0 (11-day parts)**  
Application of new safety philosophy and incorporation into the design instruments, LCC, techniques for realizing multiple functions and co-incidental opportunities, creation of a reference design, role of data and information, practical application of new dike techniques and utilization of knowledge from HWBP (Dutch flood protection program) project cross-sectional explorations.
- **Module Dike Reinforcement in Progress (9-day parts).**  
Relevant laws and regulations, technical quality assurance and contract forms, phasing of a dike reinforcement, control and review of the execution design, interpretation of research and substantive aspects of cooperation with market parties.
- **Module Integration & Craftsmanship (6-day parts).**  
This module consists of self-contained topics to put your role as a technical manager in a broader perspective: a field trip to a levee reinforcement, the IPM model, expert commissioning, modelling, safety, costs and key figures and a serious game about asset management of levees.