

Faculty of Applied Sciences



AMCO2154 Hydraulics structures

[30h] 3 credits

This course is taught in the 2nd semester

Teacher(s): Didier Bousmar, Yves Zech
Language: French
Level: Second cycle

Aims

- Introduce to the specific issues of hydraulic structures
- In interaction with the hydraulic-structure project, learn to collect documentation and to design hydraulic structures

Main themes

- Storage hydraulic structures
- Fluvial structures
- Urban hydraulic structures

Content and teaching methods

The course content is determined in connection with the selected theme of the hydraulic project. This content is thus selected among the following topics :

- Specificity of hydraulic structures (3 hours)
 - * forces and efforts in hydraulic structures
 - * dispositions against scouring, uplift pressures, internal pressures ;
- Large dams (25 hours)
 - * gravity dams
 - * buttress dams
 - * arch dams
 - * auxiliaries : spillways, temporary diversion ;
- River structures (15 hours)
 - * navigation locks : types of locks and selection criteria, lock doors, filling and emptying ;
 - * river dams : general design, dam gate ;
- Urban hydraulic structures (10 hours)
 - * distribution networks : conception and design
 - * urban-drainage networks : sewers, storage basins, organisation of wastewater treatment.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

- Complementary topic for theme "Hydraulics" ;
- Prerequisites: AMCO 2151 "General and statistical hydrology", AMCO 2152 "Hydraulics" and AMCO 2153 "Fluvial hydraulics" ;
- Teaching method: the topics are selected every year according to the students' interest and to the selected project theme; a part of the content could be studied in the project as a project-based learning ;
- Evaluation : oral examination.

Other credits in programs

GC22 Deuxième année du programme conduisant au grade (3 credits)
 d'ingénieur civil des constructions