

Course CIVIL-411 "Dam Engineering", Fall 2024

Course: Tuesdays, 13h15-16h00, room AA C0 06

Exercices: Tuesdays, occasional

3 regular course periods, including exercises

Academic year: 2024-2025

Lecturers: Manso, Mouvet + assistants from SGC

Date:
28.08.2024

Date	Week	Contents	Enseignant	Etat /commentaire
10.09.2024	1	Purpose of dams and reservoirs. Dam types and selection criteria	P. Manso	
		Introduction to concrete gravity dams		
		Ex. 1 - Seismic behaviour assessment of a gravity dam [deadline le 07.10.2023]		Assistant E. Pinelli
17.09.2024	2	Gravity dams: stability and stresses	P. Manso	
		Gravity dams : seismic behaviour & dam heightening solutions		
		Ex.1		
24.09.2024	3	Geol/geotechnical investigations for foundations & material qualification	P. Manso	
		Properties of mass concrete & gravity dam concrete alternatives (RCC, RFC, HF, etc.)		
		Ex.1		
01.10.2024	4	Buttress dams	P. Manso	
		Ex.1		
08.10.2024	5	Arch dams: introduction	P. Manso	
		Ex. 3 - Arch dam - preliminary geometry definition [deadline 25.11.2024]		Assistant R. van Mol
15.10.2024	6	Technical visit to the Rossens & Schiffenen dams (in Canton Fribourg)	P. Manso	
		Ex. 2 - Innovation in Dam Engineering - short presentation		
22.10.2024		EPFL academic break / Vacances académiques EPFL		
29.10.2024	7	Arch dams: preliminary design	P. Manso	
		Ex. 3		
		(feedback from Exercice 1)		
05.11.2024	8	Dam Surveillance	L. Mouvet	
12.11.2024	9	Dam Surveillance & Emergency preparedness	L. Mouvet	
19.11.2024	10	Arch dams: preliminary design and methods	P. Manso	Hydro 2024
		Heightening of concrete dams		
26.11.2024	11	Embankment dams	P. Manso	
		Geol/geotechnical investigations for foundations & material qualification		Assist. Stefanie Tietz
		Ex. 4 - Embankment dams - stability and seepage analysis [deadline 23.12.2024]		
03.12.2024	12	Embankment dams - seismic behaviour assessment	P. Manso	
		Ex. 4		
10.12.2024	13	Concrete-face rockfill dams (CFRD) - specific design, construction & operation aspects	P. Manso	
		(feedback from Exercice 2)		
17.12.2024	14	Selection of the type of dam including Appurtenant Works	P. Manso	
		Bottom Outlet structures, equipment and operation		