

ADVANCED ENVIRONMENTAL SYSTEMS ANALYSIS (I.C.)

1st mod. Prof. G. Guariso

a.y. 2023-2024

5 Credits: lectures 30 h, practice 20 h

Lectures & Practice: Monday 10.15 – 12.15 Room B.6.4
 Tuesday 10.15 – 13.15 Room 19.0.1
 Wednesday 10.15 – 13.15 Room 25.1.1

Lecture registrations are available at the corresponding link.

			2023-24	2022-23
Lec 1(3)	W 13/9	Course content and organization. DPSIR scheme.	Reg.0 - 1	Reg.1
Lec 2(5)	M 18/9	Biochemical river quality models.	Reg. 2	Reg.2
Lec 3(8)	W 20/9	Ecological river quality models and localization problems.	Reg. 3	Reg.4
Pr 1 (3)	T 19/9	The Streeter-Phelps model.	Reg. 4	Reg.3
Lec 4(10)	M 25/9	Integrated models and case study. Lake models.	Reg.5a-b	Reg.6
Pr 2 (6)	T 26/9	Optimization problems on river quality.	Reg. 6	Reg.5
	W 27/9	Degree exams		
Lec 5(12)	M 2/10	Surrogate modelling. Summary examples on water quality and measurement tools.	Reg. 7	Reg.8
Lec 6(15)	T 3/10	Air quality models. The Gaussian plume. Climatological approach.	Reg. 8	Reg.10
Pr 3(8)	W 4/10	More complex water quality models.	Reg. 9	Reg.7
Pr 4 (11)	M 9/10	Examples of application of complex water quality models.	Reg.10	Reg.9
Lec 8(18)	T 10/10	Model performance evaluation. Models for specific meteo conditions. Air quality planning with linear models.	Reg. 11a -11b	Reg.11
Pr 5 (14)	W 11/10	Concentration distribution with the Gaussian model.	Reg.12	Reg.12
Pr 6 (16)	M 16/10	Planning abatement measures with the Gaussian model.	Reg. 13	Reg.13
Lec 9(21)	T 17/10	Eulerian CTMs. Case study of ozone reduction.	Reg. 14	Reg.14
Lec 10(24)	W 18/10	Lagrangian CTMs. Health impact models.	Reg. 15	Reg.15
Lec 11(26)	M 23/10	Integrated models. Analysis of an actual air quality plan.	Reg. 16	Reg.16
Pr 7 (19)	T 24/10	Integrated assessment modelling – SHERPA and RIAT+	Reg. 17	Reg.17
Lec 12(29)	W 25/10	Carbon budget models. Forest management for GHG.reduction. Distribution of homework material.	Reg. 18a -18b	Reg.19
Pr 8 (21)	M 30/10	Case study with an integrated model.	Reg. 19	Reg.18
...	...	2 nd MOD: Lectures and practices		
(31)	W 13/12	Paper presentations		