

# ADVANCED ENVIRONMENTAL SYSTEMS ANALYSIS (I.C.)

1<sup>st</sup> mod. Prof. G. Guariso

a.y. 2021-2022

**5 Credits: lectures 30 h, practice 20 h**

**Lectures & Practice:** Tuesday 10.15 – 13.15 Room 25.1.3  
Wednesday 14.15 – 17.15 Room 3.1.4  
Thursday 10.15 – 12.15 Room 9.0.3

*Click on the title, to watch the video registration of the corresponding activity.*

Lec 1(2)	T 14/9	<a href="#">Course content and organization. DPSIR scheme.</a>
Lec 2(5)	W 15/9	<a href="#">Biochemical river quality models.</a>
Lec 3(7)	Th 16/9	<a href="#">Ecological river quality models and localization problems.</a>
Lec 4(10)	T 21/9	<a href="#">Zannetti's seminar. Integrated models and case study.</a>
Pr 1 (3)	W 22/9	<a href="#">The Streeter-Phelps model</a>
Pr 2 (5)	Th 23/9	<a href="#">Optimization problems on river quality.</a>
Lec 5(13)	T 28/9	<a href="#">Lake models. Surrogate modelling in water quality planning</a>
Pr 3(8)	W 29/9	<a href="#">More complex water quality models.</a>
Lec 6(15)	Th 30/9	<a href="#">Summary examples on water quality.</a>
Lec 8(18)	T 5/10	<a href="#">Air quality models. The Gaussian plume. Climatological approach.*</a>
Pr 4 (10)	W 6/10	<a href="#">Examples of application of complex water quality models.</a>
Lec 9(21)	T 12/10	<a href="#">Model performance evaluation. Models for specific meteo conditions.</a> <a href="#">Air quality planning with linear models.</a>
Pr 5 (12)	W 13/10	<a href="#">Concentration distribution with the Gaussian model.</a>
Lec 10(23)	Th 14/10	<a href="#">Eulerian CTMs. Case study of ozone reduction.</a>
Lec 11(26)	T 19/10	<a href="#">Lagrangian CTMs. Health impact models.</a>
Pr 6 (15)	W 20/10	<a href="#">Planning abatement measures with the Gaussian model.</a>
Lec 12(28)	Th 21/10	<a href="#">Integrated models. Analysis of an actual detailed air quality plan.</a>
Pr 7 (18)	T 26/10	<a href="#">Integrated assessment modelling – SHERPA and RIAT+</a>
Lec 13 (30)	W 27/10	<a href="#">Carbon budget models. Forest management for GHG reduction.</a> Distribution of homework material.
Pr 8 (20)	Th 28/10	<a href="#">Case study with an integrated model.</a>
...	...	<i>2<sup>nd</sup> MOD: Lectures and practices</i>
	14/12	Paper presentations

\* The first part of the lecture has not been registered, unfortunately. You can watch [here](#) last year's registration for the same lecture.