Laurea Magistrale
Atmospheric Science and Technology (LMAST)

SUBJECT TITLE	Hydrological modeling
TEACHER NAME(S)	Francesco Napolitano (3 CFU), Fabio Russo (3 CFU)
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Teacher phone	+39.06.44585058
Teacher meeting	Wednesday, h. 15-16
Teacher office address	Via Eudossiana 18, Rome (S. Peter in chain site)
DISCIPLINE (SSD)	ICAR/02 Hydraulics structures and hydrology
Semester (1-4)	2 (second) & Rome at Via Eudossiana
Credits (CFU/ECTS)	6
Lecture hours (h)	60 (45 lectures + 15 exercise/laboratory)
Prerequisite and learning activity	Physics, Algebra
Teaching language and method	English &lectures, exercise and homework
Assessment method	Test and Oral examination
SUBJECT WEBSITE	https://www.dicea.uniroma1.it/en/users/francesconapolitano

OBJECTIVES

Hydrological modeling course has the intention to give both conceptual models and practical operative procedures in order to understand the hydraulic risk management at basin scale. The role and influence of hydrosystems for flood prevention are also illustrated.

OUTCOMES (Dublin descriptors: knowledge, understanding, explain, skill, ability)

Students will be able to understand both physically and in an operative way hydrological process at river basin scale; they will be able to understand how hydrosystems work in the Environment and they will be able to design many components.

PROGRAM CONTENT

- Fundamentals of Hydrological cycle and Hydrological statistics.
- Notions of Hydrological measures and hydrological processes.
- River basins and geomorphology.
- Rainfall-runoff models.
- Flood propagation in rivers.
- Early warning hydrological models.
- Hydraulic risk analysis.
- Hydrosystems for flood prevention.

REFERENCES AND MATERIAL

Chow V.T., Maidment D.R., Mays L.W. : “Applied Hydrology”, Mc Graw Hill
Material supplied by the professor