UNIVERSITÀ DI PAVIA

Anno Accademico 2014/2015

HYDRAULIC MEASUREMENT

Enrollment year	2013/2014
Academic year	2014/2015
Regulations	DM270
Academic discipline	ICAR/01 (HYDRAULICS)
Department	DEPARTMENT OF CIVIL ENGINEERING AND ARCHITECTURE
Course	CIVIL ENGINEERING
Curriculum	IDRAULICO
Year of study	2°
Period	2nd semester (02/03/2015 - 12/06/2015)
ECTS	3
Lesson hours	23 lesson hours
Language	ITALIAN
Activity type	WRITTEN AND ORAL TEST
Teacher	PETACCIA GABRIELLA (titolare) - 3 ECTS
Prerequisites	The Course of deals with theoretical and application matters chiefly referred to the Teaching Fields of : Hydraulic and Fluid Mechanics .It is useful for the students a preliminary frequency of the teaching Matters above mentioned, for an easier understanding of the object of the Course
Learning outcomes	Show the methodologies used to perform laboratory and field measurements of hydraulic variables like pressure, velocity, discharge, water level. Application of the methodologies learnt in the course to perform filed measurements.
Course contents	Introduction. Theory of measurements, errors definition. Statistical analysis of the results. Pressure measurements. Use of pressure transducers in dynamic measurements. Velocity measurements. Measures based on mechanical principles: Pitot tube. Measures based on optical principles: laser anemometer (LDA) and its application to

	turbulence measurements. Outline of PIV measurements. Ultrasonic techniques. Water level and velocity measurements in free surface flow. Velocity measurements based on mechanical principles: use of current meter and their calibration. Ultrasonic measurements. Measure of discharge in open channels. Hydraulic measurements: weirs, broad crested weirs. Discharge determination through velocity measurements. Discharge measurements using ultrasonic techniques. Discharge measurements in pipes. Recall of traditional techniques and their applications (e.g. Venturi Tube)
Teaching methods	Lectures (hours/year in lecture theatre): 23 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0
Reccomended or required readings	S. Longo, M. Petti. . Misure e controlli idraulici. . McGraw-Hill, 2006..
Assessment methods	Oral exam including the discussion of the report on the measurements performer during the course
Further information	Oral exam including the discussion of the report on the measurements performer during the course
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile