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COURSE: Industrial Wastes and Sustainable Development

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TEACHER: Prof. Gian Lorenzo Valenti

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e-mail: gianlorenzo.valenti@unibas.it

website:

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Language: Italian

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ECTS: 9

n. of hours: 81

Academic year: 2014-2015

Campus: Potenza

Semester: I

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#### TOPICS

Italian laws on special wastes. Special wastes derived from civil and industrial activities. Simplified procedures of using wastes as sources of raw materials and energy. Dangerous and non-dangerous wastes. Main features of the manufacturing cycles of chemical, metallurgical, mining and power generation industries. Utilization of industrial and wastes by-products in civil engineering works and building materials industry.

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#### TEACHING METHODS (please tick one or more options)

X Theoretical lessons

Tutorials in classroom

Tutorials in laboratory

Project works

Technical visits

Other activities (please specify) \_\_\_\_\_

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#### TEXTBOOKS

Lesson notes

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#### ON-LINE EDUCATIONAL MATERIAL

web address: \_\_\_\_\_

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#### LEARNING OUTCOMES

Understanding of the role played by the utilization of industrial wastes in the environmental safeguard for a sustainable development of the modern society.

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#### REQUIREMENTS

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#### EVALUATION METHODS (please tick one or more options)

Intermediate verifications

Written examination

Discussion of a project work

Practical test

X Oral examination

Other methods (please specify) \_\_\_\_\_

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#### DETAILED CONTENT

Italian Decree n. 152/2006 regarding special wastes and related operational decrees. Scrap iron, construction and demolition wastes, municipal solid waste incineration residues, sludges from pollutant abatement plants, residues from artificial reservoir rehabilitation. Coal combustion ashes from traditional power plants, fluidized bed coal combustion ashes, chemical gypsums from flue gas desulfurization, neutralization of sulfuric acid containing waters, industrial manufacture of mineral acids and titanium dioxide, marble-tuff-granite-basalt dust, muddy and solid from oil extraction, blast furnace and steel slags, anodization mud, alumina powders from the aluminium secondary manufacture, condensed silica fumes. Manufacturing process and technical properties of cement, concrete, bricks and building preformed components.

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SEMINARS BY EXTERNAL EXPERTS YES X NO

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#### FURTHER INFORMATION

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