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**ACADEMIC YEAR: 2016-2017**

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**COURSE: SURVEY, MAPPING AND GEOGRAPHIC INFORMATION SYSTEMS**

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**TYPE OF EDUCATIONAL ACTIVITY:** Basic course

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**TEACHER:** CARLO MANERA

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**e-mail:** carlo.manera@unibas.it

**Web:** <http://agraria.unibas.it/site/home/info/offerta-formativa.html>

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**Phone:** 0971 205405

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**Language:** Italian

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**ECTS:** (lessons /  
tutorials/practice): 6

**n. of hours:**  
36 hours of theory  
lessons  
18 hours of practice

**Campus:** Potenza  
**School:** SAFE  
**Program:** LT agricultural technology

**Semester:** II

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#### **EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES**

The course provides the students with the fundamental knowledge of land surveying techniques and its representation, from metric to thematic, by means of cartographic support, and with the fundamental contents of GIS and its related applications for a new agricultural and forest land governance.

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#### **PREREQUIREMENTS**

A solid background in mathematical analysis and geometry.

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#### **SYLLABUS**

##### **Lessons**

Geodetic and topographical field. Measuring tools: level, theodolite, total station, G.P.S. Checks and adjustments. Survey and representation of rural buildings. Planimetric surveys: triangulations, intersections, open and closed traverse, altimeter surveys, measurements of the areas. Cartographic representations. The accuracy of data on cartographic media. Italian official cartography thematic maps. Digital mapping. Components of a GIS: procedures, types, attribute tables; metadata; spatial analysis. Applications.

##### **Practices**

Use of surveying instruments (squares, levels, total station) and reading topographic maps.

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#### **TEACHING METHODS**

36 hours of theory lessons 18 hours of laboratory and field practices. During practices students will be asked execution of a planimetric survey detail and relative graphic restitution; survey and compensation of a closed traverse.

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#### **EVALUATION METHODS**

Oral examination at the end of the course.

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#### **TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL**

- Teaching material distributed in classroom
  - G. Bezoari, C. Monti, A. Selvini, Fondamenti di rilevamento generale – Topografia e Cartografia – vol. I, Hoepli, Milano 1989
  - Biasini, Galetto, Mussio, Rigamonti. La cartografia e i sistemi informativi per il governo del territorio. Franco Angeli Editore
  - Poletti. GIS metodi e strumenti per un nuovo governo della città e del territorio. Maggioli Editore
  
  - L. Biagi (2009): I Fondamenti del GPS, download gratuito dal sito <http://geomatica.como.polimi.it/fondamentaligps/>
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**SCUOLA DI SCIENZE  
AGRARIE, FORESTALI,  
ALIMENTARI  
ED AMBIENTALI**

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#### INTERACTIONS WITH STUDENTS

- office hours for consultation at the Professor office at planned days/hours
  - email, skype
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#### PLANNED EXAMINATION SESSIONS

Calendar online:

<https://unibas.esse3.cineca.it/Home.do>

Usually the third Wednesday of each month (except August)

#### EVALUATION BOARD

Carlo Manera  
Pietro Picuno  
Carlo Sivolella  
Donato Castronuovo

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SEMINARS BY EXTERNAL EXPERTS YES

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