

DIAGNOSTICA DEI BENI CULTURALI (LM61)

(Università degli Studi)

Insegnamento FISICA APPLICATA

GenCod A000308

Docente titolare Antonio SERRA

Insegnamento FISICA APPLICATA

Insegnamento in inglese Applied Physics

Settore disciplinare FIS/07

Corso di studi di riferimento

DIAGNOSTICA DEI BENI CULTURALI

Tipo corso di studi Laurea Magistrale

Crediti 9.0

Ripartizione oraria Ore Attività frontale: 63.0

Per immatricolati nel 2017/2018

Erogato nel 2018/2019

Anno di corso 2

Lingua ITALIANO

Percorso GENERALE

Sede

Periodo Secondo Semestre

Tipo esame Orale

Valutazione Voto Finale

Orario dell'insegnamento

<https://easyroom.unisalento.it/Orario>

BREVE DESCRIZIONE DEL CORSO

The applied physics course aims to provide to the student the cognitive and operational tools of the basic physical principles. These are essential for the realization and critical evaluation of the archaeometric measurement methodologies.

PREREQUISITI

Nozioni di base di fisica e calcolo infinitesimale di norma acquisiti in un istituto secondario di secondo grado.

OBIETTIVI FORMATIVI

The applied physics course aims to provide to the student the cognitive and operational tools of the basic physical principles. These are essential for the realization and critical evaluation of the archaeometric measurement methodologies. In particular, the student at the end of the course will be able

- To identify and describe, through synthetic models, even relatively complex physical phenomena, sources of deterioration and alteration of cultural heritage.
- ability to formulate independent judgments concerning the physical strategies suitable for the planning of a diagnostic intervention.
- ability to effectively communicate the results of its elaboration through the production of technical reports and seminar activities.
- ability to learn on an ongoing basis
- ability to work in a group, also as coordinator.

METODI DIDATTICI

classroom teaching 9 CFU

MODALITA' D'ESAME

The final test is an oral exam that will verify awareness of the student and his/her ability to use the acquired knowledge to solve basic problems about cultural heritage. Marks will be expressed in thirtieths (/30).

The student is evaluated on the basis of his/her knowledge and ability to use such knowledge applied to practical problems. The ability to use the microscope and recognize samples will also be evaluated.

PROGRAMMA ESTESO

Basics physics. Systems and units of measurement. Hints on the analysis of experimental data: measurement uncertainties. Photon-matter and ion-matter interaction. Photoelectric effect, Compton effect, generation of pairs. Interaction heavy charged particles with matter. X-ray fluorescence analysis techniques (XRF: X-Ray Fluorescence): basic principles, instrumentation and applications. Analysis techniques using ion beams (Ion Beam Analysis): basic principles, notes on particle accelerators. The PIXE technique (Particle Induced X-Ray Emission): basic principles, instrumentation, applications, case studies. The PIGE technique (Particle Induced Gamma-Ray Emission): basic principles, instrumentation, applications, case studies. The RBS (Rutherford Backscattering Spectrometry) technique: basic principles, instrumentation, applications, case studies, multitechnical integrated analysis.

TESTI DI RIFERIMENTO

PDF files will be on institutional page of teacher