

ACADEMIC YEAR: **2016-2017**COURSE:: **SENSORI E METODOLOGIE ANALITICHE AVANZATE
(Sensors and advanced analytical methodologies)**TYPE OF EDUCATIONAL ACTIVITY: **Characterizing**TEACHER : Prof. Dr. **Antonio Guerrieri**e-mail: **antonio.guerrieri@unibas.it**

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Mobile phone:

Language : **ITALIAN**

ETCS: 8 (6 lessons /2 practical lab activities)	n. of hours: 72 (48 for lessons and 24 for practical lab activities)	Campus: Potenza Dept: Dipartimento di Scienze CdS: Laurea Magistrale in Biotecnologie per la Diagnostica Medica, Farmaceutica e Veterinaria (LM9)	Semester: II (from March 2017 to June 2017, exact dates to be defined)
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EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

This unit is focused on the up to date analytical instrumentation. Main topics should include electrochemical biosensors, array sensors and QCM. Development and analytical characterization of novel devices for diagnostics and their application for real sample analysis.

PRE-REQUIREMENTS

- ✓ attendance of lectures: **HIGLY** suggested
- ✓ attendance of lab activities: **COMPULSORY**
- ✓ preparatory exams: **Biologia Molecolare Avanzata (BIO/11)**

SYLLABUS

Sensors. Electrochemical sensors. Biosensors. Microgravimetric sensors. Sensor arrays.

Biomolecules, microbes, cells and tissues as signal transducers in biosensors: principles of actions, kinetics of signal transduction.

Surface modifications in sensor and enzyme immobilization.

Immobilised enzyme biosensors. Immunosensors. Genosensors. Quartz crystal microbalance as novel sensors.

TEACHING METHODS

- **Lectures and Practical Lab. Activities**

EVALUATION METHODS

oral examination with discussion about lab activities

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

lecture notes; lesson slides; lab activity notes

INTERACTION WITH STUDENTS

Conventional approaches (e.g. student welcome) as well as internet ones (e.g. email) for discussions and deepening of lectures and lab activities.

TIMETABLE FOR STUDENT WELCOME

<i>DAY</i>	<i>FROM</i>	<i>TO</i>	<i>LOCATION</i>
MONDAY	17.30	20.30	Professor Office
TUESDAY	17.30	20.30	Professor Office
WEDSNEDAY	18.00	20.30	Professor Office
THURSDAY	16.00	18.00	Professor Office

CALLS FOR EXAMINATION (exact dates to be defined)

Month	Year	Expected Call
February	2017	13
March	2017	20
June	2017	20
July	2017	19
September	2017	17
October	2017	16

EXAMINATION PANEL:

President: **prof. dr. Antonio Guerrieri**

Member: **prof.ssa Anna Maria Salvi**

Member: **dr.ssa Rosanna Ciriello**

Member: **dr.ssa Giuliana Bianco**

SEMINARS BY EXTERNAL EXPERTS YES NO

FURTHER INFORMATION
