

ACADEMIC YEAR: **2018-2019**COURSE: **CHIMICA ANALITICA**TYPE OF EDUCATIONAL ACTIVITY: **Fundamental**TEACHER: Prof. Dr. **Antonio Guerrieri**e-mail: **antonio.guerrieri@unibas.it**

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mobile:

Language: **ITALIANO**

ETCS: <b>12</b> (8 lessons /4 practical lab activities)	n. of hours: <b>112</b> (64 for lessons and 48 for practical lab activities)	Campus: <b>Potenza</b> Dept/School: <b>Dipartimento di Scienze</b> CdS: <b>Laurea in Biotecnologie (L2)</b>	Semester: annual (tentatively from 1/10/2018 to 31/05/2019-20/06/2019)
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EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

- **The knowledge of fundamentals in analytical chemistry is the main goal of this unit. An introduction on the main instrumental techniques in analytical chemistry will be given as well.**

PRE-REQUIREMENTS

- ✓ **attendance of lectures: HIGHLY suggested**
- ✓ **attendance of lab activities: COMPULSORY**
- ✓ **preparatory exams : Istituzioni di Matematica, Fisica, Chimica generale e inorganica**

SYLLABUS

Analytical Chemistry: an introduction.  
Statistical data treatment and processing.  
Equilibria in aqueous solutions for acids, bases, salts and buffers.  
Titrations.  
Electrochemical reactions and equilibria.  
Potentiometry. pHmeters. Ion selective electrodes.  
Spectroscopy. Emission. Absorption. Fluorescence.  
Instrumentation in spectroscopy.

**Lab activities**

- The analytical approaches in lab
- Titration of HCl
- Titration of NaOH
- Determination of acetic acid in commercial vinegars by titration
- Determination of citric acid in lemon juices by titration
- The pH meter
- Potentiometric titrations
- Spectrophotometry with Lambert Beer applications to cytochrome c determination

TEACHING METHODS

- **Lectures and Practical Lab Activities**

EVALUATION METHODS

**oral examination with discussion about lab activities**

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**TEXTBOOKS AND ON LINE EDUCATIONAL MATERIALS**

- **lecture notes; lesson slides; lab activity notes**
- **Suggested Textbooks**

**Title:**Fondamenti di chimica analitica

**Authors:**Skoog Douglas A.,West Donald M.,Holler James F.

**Editor:**Edises

**Publication date:**1998

**ISBN:**887959138X

**ISBN-13:**9788879591386

- **Title:**Chimica analitica strumentale
- **Authors:**Skoog Douglas A.,West Donald M.
- **Editor:**Edises
- **Publication Date:**1995
- **ISBN:**8879590669
- **ISBN-13:**9788879590662

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**INTERACTION WITH STUDENT**

***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**

<b>DAY</b>	<b>FROM</b>	<b>TO</b>	<b>LOCATION</b>
MONDAY	17.30	20.30	Professor Office
TUESDAY	17.30	20.30	Professor Office
WEDSNEDAY	18.00	20.30	Professor Office
THURSDAY	15.00	18.00	Professor Office

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**CALLS FOR EXAMINATION** (exact dates to be defined)<sup>1</sup>

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Month	Year	Expected call
February	2019	13
March	2019	13
June	2019	12
July	2019	17
September	2019	25
October	2019	23
December	2019	18

**EXAMINATION PANEL:**President: **prof. dr. Antonio Guerrieri**Member: **prof.ssa Anna Maria Salvi**Member: **dr.ssa Rosanna Ciriello**Member: **dr.ssa Giuliana Bianco**Member: **dr. Fausto Langerame**

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**SEMINARS BY EXTERNAL EXPERTS** YES  NO 

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**ALTRE INFORMAZIONI**

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