
COURSE: Chemistry of natural organic compounds

ACADEMIC YEAR: 2018-2019

TYPE OF EDUCATIONAL ACTIVITY: Affine

TEACHER: Lucia CHIUMMIENTO

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mobile (optional):

Language: **italian**

ECTS: **6** (lessons e
tutorials/practice)n. of hours: **48** (lessons e
tutorials/practice)Campus: **Potenza**
Dept./School: **Dipartimento di
Scienze**
Program:Semester: I
(date)
**From 01 october 2018
to 20 december
2018/20 january 2019**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The aim is to give to students complete information about the main characteristic of the different metabolic pathways. At the end of the course students should know the ecological role of secondary metabolites and their use as drugs.

PRE-REQUIREMENTS

SYLLABUS**Primary and secondary metabolism:** main coenzymes and metabolic intermediates. Building blocks.**Acetate pathway.** Saturated and unsaturated fatty acids, polyacetates and polypropionates

Prostaglandins, leucotrienes and tromboxanes. Aromatic polyketides. Macrolides.

Shikimate pathway. Aromatic aminoacids. Cinnamyl acid and derivatives. Coumarins, flavonoids, stilbenes.**Mevalonic acid and methyl-erytritol phosphate pathways.** Terpenes (nomenclature) and steroids (stereochemistry): cholesterol, steroidal saponines, cardioactive glycosides, pythosterols, vitamin D, biliar acid, steroidal hormones.**Alkaloids. Alkaloids of hornitine, lysine, nicotine, tyrosine, triptophan, histidine..**

TEACHING METHODSTheoretical lessons, Classroom tutorials.

EVALUATION METHODSOral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

- P. M. Dewick: **Medicinal Natural Products, A Biosynthetic Approach**, (Wiley 2009)- "**Chimica, biosintesi e bioattività delle sostanze naturali**", Piccin, Padova, 2013
 - X.-T. Liang, W.-S. Fang: **Medicinal Chemistry of Bioactive Natural product**, Wiley 2006
 - J. Clayden, N. Greeves, S. Warren, P. Wothers: **Organic Chemistry**, Oxford press
 - Nicolaou, K. C.; Montagnon, T. "**Molecules that changed the world**", Wiley-VCH. 2007
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INTERACTION WITH STUDENTS*Teacher meets students for details about items of the course in own office each Monday: from 11:30 to 13:30.*

EXAMINATION SESSIONS (FORECAST)¹15/02/2019, 15/03/2019, 26/04/2019, 24/05/2019, 21/06/2019/, 19/07/2019, 13/09/2019, 25/10/2019, 20/12/2019

SEMINARS BY EXTERNAL EXPERTS YES NO

FURTHER INFORMATION

¹Subject to possible changes: check the web site of the Teacher or the Department/School for updates.

