

MATERIALS ENGINEERING AND NANOTECHNOLOGY (LM56)

(Lecce - Università degli Studi)

Teaching CHEMISTRY 2

GenCod A003109

Owner professor Giuseppe CICCARELLA

Teaching in italian CHEMISTRY 2

Teaching CHEMISTRY 2

SSD code CHIM/07

Reference course MATERIALS ENGINEERING AND

Course type Laurea Magistrale

Credits 9.0

Teaching hours Ore-Attività-frontale: 81.0

For enrolled in 2019/2020

Taught in 2019/2020

Course year 1

Language INGLESE

Curriculum PERCORSO COMUNE

Location Lecce

Semester Primo-Semestre

Exam type Orale

Assessment Voto-Finale

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

BRIEF COURSE DESCRIPTION

The purpose of this course is to introduce students to the molecular-level understanding of the physicochemical properties of organic substances aimed at characteristics of materials.

REQUIREMENTS

General Chemistry

COURSE AIMS

Ability to manage organic chemistry issues.
Ability to perform basic organic spectral analysis

TEACHING METHODOLOGY

Lecture-style instruction / Exercises and Practice Test Questions

ASSESSMENT TYPE

The exam consists of two parts:
Part 1 - the student is asked to provide a full structural interpretation of FT-IR, MS, ¹H- and ¹³C-NMR spectra and to elucidate the structures of an unknown compound (2 hours);
Part 2 - the student is asked to illustrate two theoretical topics; it is aimed to verify to what extent the student has gained knowledge and understanding of the selected topics of the course and is able to communicate about his understanding.

OTHER USEFUL INFORMATION

Office Hours By appointment; contact the professor by email or at the end of class meetings.
Useful tools A Free Comprehensive Chemical Drawing Package can be downloaded at the following URL: <https://www.acdlabs.com/resources/freeware/chemsketch/>

FULL SYLLABUS

Covalent bonds and shape of molecules (2 hours). Acids and bases (2 hours). Alkanes and Cycloalkanes (2 hours). Alkenes (2 hours). Alkenes: Reactivity (3 hours). Chirality (3 hours). Alkynes (2 hours). Alkyl halides (3 hours). Alcohols, ethers and thiols (1 hour). Benzene and its derivatives (3 hours). Amines (1 hour). Aldehydes and ketones (2 hours). Carboxylic acids (3 hours). Functional derivatives of carboxylic acids (3 hours). Infrared spectroscopy (6 hours). Mass Spectrometry (6 hours). NMR Spectroscopy (10 hours). Tutorials (27 hours)

REFERENCE TEXT BOOKS

William H. Brown, Thomas Poon, Introduction to Organic Chemistry, 6th Edition, Wiley