



## POLYMERS FOR BIOTECHNOLOGY

<b>Enrollment year</b>	2020/2021
<b>Academic year</b>	2021/2022
<b>Regulations</b>	DM270
<b>Academic discipline</b>	CHIM/06 (ORGANIC CHEMISTRY)
<b>Department</b>	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
<b>Course</b>	ADVANCED BIOTECHNOLOGY
<b>Curriculum</b>	PERCORSO COMUNE
<b>Year of study</b>	2°
<b>Period</b>	1st semester (01/10/2021 - 14/01/2022)
<b>ECTS</b>	6
<b>Lesson hours</b>	48 lesson hours
<b>Language</b>	Italian
<b>Activity type</b>	ORAL TEST
<b>Teacher</b>	PASINI DARIO (titolare) - 6 ECTS
<b>Prerequisites</b>	None at the MSc level
<b>Learning outcomes</b>	The course aims at introducing the students to the chemistry of macromolecules, and to deal with advanced aspects, regarding both synthesis and applications, of natural and artificial macromolecules, particularly as nanostructured materials for biotechnologies.
<b>Course contents</b>	The course will initially focus on the classification and presentation of the different classes of macromolecules, and on the differences between the main polymerization methods (polycondensation and polyaddition). The main methods of analysis and characterization of polymers will be discussed. The main techniques for controlled polymerization will be also presented, with focus on controlled free radical polymerization. Modern bioconjugation strategies for the formation of polymer/protein hybrids for biotechnological applications

will be presented. The chemical derivatization of microbial polymers for biomedical applications will be discussed.

**Teaching methods**

Lectures

**Reccomended or required readings**

Slides and other didactic material presented at letctures

**Assessment methods**

ORal exam

**Further information**

**Sustainable development goals - Agenda 2030**

The program deals with topics related to two of the goals of the 2030 agenda on sustainability:

GOAL 7: AFFORDABLE AND CLEAN ENERGY

GOAL 12: RESPONSIBLE CONSUMPTION AND PRODUCTION

[The goals](#)