

# **Title of the course: Bioplastics**

**Teacher: dr. C.Valeria L. Giosafatto**

**Hours: 4-5**

## **Programme:**

-Plastic revolution and plastic pollution.

-Bio-based, biodegradable, compostable, edible and digestible materials.

-Different origin, possible ways of production, physico-chemical/biological characterization and industrial applications of the bioplastics.

*The disposal of petroleum-derived plastics is highly pollutant for ground, water as well as marine life. In addition, the plastics burning releases poisonous chemicals in the air. Bioplastics produced from biodegradable molecules seem an attractive eco-friendly alternative since they can be easily degraded by the enzymes present in different microorganisms occurring in the environment. The technical attitude, such as mechanical and barrier properties of the bioplastics are crucial for their industrial application. The methods for preparation of the bioplastics are different depending on their specific use since they can be applied in the agriculture and food as well in biomedical and pharmaceutical sectors. For an industrial application it is of a paramount importance to characterize the bioplastics according to their structure and biodegradability. The study of their morphological, barrier and mechanical properties is, thus, essential for making them promising environmentally friendly candidates able to replace the petroleum-derived plastics.*