



# *Dipartimento di Scienze e Tecnologie*

ACADEMIC YEAR 2017/2018

STUDY COURSE IN BIOLOGY  
TEACHING IN APPLIED MICROBIOLOGY AND VIROLOGY

Prof. Pagliarulo Caterina

## **APPLIED MICROBIOLOGY**

Pathogenicity and virulence. Virulence factors. Endotoxins. Structure and action mechanism of main bacterial exotoxins. Superantigens. Pathogenicity Islands. Microbial biofilms. Quorum sensing. Diagnostic methods used in microbiology for microorganisms isolation and identification. Microbiological assays for antimicrobial sensitivity profile.

The human microbiota. Impact and consequences of diets on human microbiota. Probiotic bacteria. Functional foods and Probiotic supplements. Effects of Probiotics and Prebiotics on humans. Hygiene and food safety. Microorganisms indicators of food quality and food safety. Food-borne diseases. Zoonoses and zoonotic agents: epidemiology and surveillance. Main pathogenic bacteria and toxins transmitted with food. *Salmonella*. *Campylobacter*. *Escherichia coli*. *Bacillus*. *Listeria*.

## **VIROLOGY**

Animal viruses: structure, classification and replication. The main zoonotic viral infections: epidemiology and surveillance. Hepatitis viruses. Orthomyxovirus. Emerging viral diseases.