



# UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2019/2020		
MASTER'S DEGREE (MSC)	MOLECULAR AND HEALTH BIOLOGY		
SUBJECT	MOLECULAR MICROBIOLOGY		
TYPE OF EDUCATIONAL ACTIVITY	B		
AMBIT	50507-Discipline del settore biomolecolare		
CODE	20455		
SCIENTIFIC SECTOR(S)	BIO/19		
HEAD PROFESSOR(S)	ALDUINA ROSA	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	102		
COURSE ACTIVITY (Hrs)	48		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<b>ALDUINA ROSA</b> Monday 13:00 14:00 Studio 306, Dip. STEBICEF, viale delle Scienze, Ed. 16, piano -1 Disponibile su TEAMS previo appuntamento concordato via email Thursday 13:00 14:00 Studio 306, Dip. STEBICEF, viale delle Scienze, Ed. 16, piano -1 Disponibile su TEAMS previo appuntamento concordato via email Friday 12:00 13:00 Studio 306, Dip. STEBICEF, viale delle Scienze, Ed. 16, piano -1 Disponibile su TEAMS previo appuntamento concordato via email		

**DOCENTE:** Prof.ssa ROSA ALDUINA

<b>PREREQUISITES</b>	Good basic knowledge in Microbiology, Genetics, Molecular Biology and Biochemistry, acquired during the Bachelor program
<b>LEARNING OUTCOMES</b>	<p>Knowledge and understanding: Acquisition of advanced knowledge of the molecular mechanisms of regulation of gene expression in microorganisms and the methods applied to basic and applied research.</p> <p>Applying knowledge and understanding: The students of the course through the theoretical acquisition of basic and advanced concepts of molecular genetics of microorganisms can apply their knowledge to understand genetic and molecular mechanisms that control the biosynthetic, metabolic and physiological capabilities of the microorganisms studied.</p> <p>Communication: The students of the course, through continuous interactions with the teacher will gain critical skills and expertise in reporting and disseminating scientific knowledge with particular attention to the use of appropriate technical and scientific terminology. Good knowledge of the English language.</p> <p>Lifelong learning skills: Ability to consult databases, to critically analyze the scientific literature, to extrapolate findings and to correlate the issues dealt with issues addressed in other courses.</p>
<b>ASSESSMENT METHODS</b>	The learning is assessed through an interview. In this oral examination the student must answer to at least three questions on the topics of the course, and they have to show an adequate knowledge, acquisition of interpretative skills, capacity of connecting and processing the arguments, as well as a relevant presentation capacity. The final grade will be expressed in thirtieth and will be judged insufficient when the student will demonstrate: difficulty to focus on the proposed topics, a shallow knowledge of the arguments and extreme limited exposure ability. As the degree of details of the proven knowledge increases will proportionally increase the positivity of the grade. The maximum score is obtained in case of excellent mastery and critical-interpretative jurisdiction of the subject content of the course and a good exposition proved by the use of proper scientific terminology.
<b>EDUCATIONAL OBJECTIVES</b>	Aim of the course is to provide students with advanced knowledge on the molecular mechanisms of regulation of gene expression in eukaryotic and prokaryotic organisms. The course focuses on critical discussions of scientific articles.
<b>TEACHING METHODS</b>	Lectures
<b>SUGGESTED BIBLIOGRAPHY</b>	Articoli scientifici pubblicati su riviste internazionali e materiale informatico forniti durante il corso.

## SYLLABUS

Hrs	Frontal teaching
2	Aim of the discipline. Choice, together with the students, of the microorganisms to be treated and subdivision of the course.
4	Prokaryotic and eukaryotic microorganisms as model systems for the study of gene expression. Identification of pleiotropic mutant strains. Characterization and localization of the mutations of the genes by genetic recombination experiments.
10	Bacteria-host interactions. Human microbiome.
4	Bacteria-host interactions. Human virome and phageome.
10	Microbiome and gut dysbiosis. Role of the microbiome in human pathologies.
10	Role of regulatory proteins. Overexpression of proteins. Protein- protein, protein-DNA, protein - RNA interactions.
8	Small RNAs, small proteins. Analyses of the post-genomic era. Transcriptomics, Proteomics, Metabolomics.