



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2022/2023		
MASTER'S DEGREE (MSC)	CHEMISTRY AND PHARMACEUTICAL TECHNOLOGIES		
SUBJECT	ADVANCED METHODOLOGIES IN PHARMACEUTICAL CHEMISTRY		
TYPE OF EDUCATIONAL ACTIVITY	D		
AMBIT	20518-A scelta dello studente		
CODE	05174		
SCIENTIFIC SECTOR(S)	CHIM/08		
HEAD PROFESSOR(S)	TUTONE MARCO	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	102		
COURSE ACTIVITY (Hrs)	48		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	4		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	TUTONE MARCO Tuesday 11:00 13:00 Wednesday 11:00 13:00		

DOCENTE: Prof. MARCO TUTONE

PREREQUISITES	Knowledge of the molecular structure of drugs. Knowledge of approaches to the synthesis and characterization of molecules.
LEARNING OUTCOMES	Knowledge and understanding - Knowledge of useful methods and instrumentations to synthesize compounds of pharmaceutical interest. Ability to understand problems and suggest solutions for the processes involved. Applying knowledge and understanding - Ability to find and utilize new technologies also with the aid of suitable databases. Making judgments - Ability to evaluate the obtained results and to plan new strategies on the basis of what has learned during the course. Communication - Ability to explain and discuss the results of a study devoted to the synthesis and purification of a new molecule of biological interest. Learning skills - Ability to utilize the acquired knowledge in the field of drug synthesis.
ASSESSMENT METHODS	The student must answer at least three/four questions covering all aspects of the program. The written and oral examination tends to evaluate whether the student has developed knowledge, understanding, and the ability to integrate the topics within the program. The threshold of sufficiency will be achieved if the student shows knowledge and understanding of the topics at least in general terms with sufficient communicative skills. Below this threshold, the exam will be unsatisfactory and students will not pass it. On the contrary, the more the student will interact with the examining board with better expositive skill and deeper knowledge, the more the evaluation will be positive. The assessment is carried out of thirty.
EDUCATIONAL OBJECTIVES	The students should acquire all the suitable knowledge to successfully carry on the synthesis of compounds of pharmaceutical interest.
TEACHING METHODS	lectures
SUGGESTED BIBLIOGRAPHY	J. Leonard, B. Lygo, G. Procter: "Advanced Practical Organic Chemistry" Blackie Academic & Professional.

SYLLABUS

Hrs	Frontal teaching
5	Safety in the organic synthesis laboratory. Glassware and instrumentation in the organic synthesis laboratory. Laboratory notebook.
12	How to dry and purify the solvents. Reactants: preparation, purification, handling.
5	Gas. Vacuum pump apparatus
10	How to search and utilize a Database . Work-up of the reactions
5	Large scale reactions. Small scale reactions
11	Special procedures. European Union's REACH regulation. Green Chemistry. How to solve problems encountered during a reaction. Products characterisation. Understanding and making a report of the obtained results.