

<b>General Information</b>	<b>BACELOR DEGREE IN BIOTECHONOLOGIES</b>
Title of the subject	Medicinal Chemistry
Degree Course (class)	Biotechnologie Industriali e Agro-Alimentari (L-2)
ECTS credits	8
Compulsory attendance	Yes
Language	Italian
Academic year	2020-21

<b>Subject Teacher</b>		
Name and Surname	Paolo Tortorella	
email address	paolo.tortorella@uniba.it	
Place and time of reception	Dipartimento di Farmacia-Scienze del Farmaco Lunedì ore 10.00-11.00	
<b>ECTS credits details</b>	Discipline sector (SSD)	Area
	CHIM08	---

<b>Study plan schedule</b>	Year of study plan		Semester	
	III		II	
<b>Time management</b>	Lessons	Laboratory	Exercises	Total
CFU	7		1	8
Total hours	175		25	200
In-class study hours	56		12	68
Out-of-class study hours	119		13	132

<b>Syllabus</b>	
Prerequisites / Requirements	
<b>Expected learning outcomes (according to Dublin descriptors)</b>	
Knowledge and understanding	Acquisition of basic skills on the chemical and pharmaceutical characterization of bioactive molecules.
Applying knowledge	Use of computational techniques for the design and development of bioactive molecules.
Making informed judgments and choices	Skills and communication tools aimed at exchanging ideas, information, data and methodologies with specialist and non-specialist interlocutors on issues relating to the medical and pharmaceutical sector.
Communicating knowledge	Skills to analyze, propose and critically discuss the data of their

	experimentation with interlocutors of similar and different professional backgrounds.
Capacities to continue learning	Develop learning skills by consulting bibliographic material
<b>Study Program</b>	
Content	<p><b>Part A Drugs and drug targets - an overview</b></p> <ol style="list-style-type: none"> <li>1. 1.Medicinal Chemistry: overview</li> <li>2. 2.Molecular properties</li> <li>3. 3.Molecular graphics</li> <li>4. 4.Pharmacokinetics</li> </ol> <p><b>Part B Drug targets</b></p> <ol style="list-style-type: none"> <li>1. 1.Enzymes as drug targets</li> <li>2. 2.Receptors as drug targets</li> <li>3. 3.Nucleic acids as drug targets</li> </ol> <p><b>Part C Drug discovery, design, and development</b></p> <ol style="list-style-type: none"> <li>1. 1.Drug discovery: finding a lead</li> <li>2. 2.Drug design: optimizing target interactions</li> <li>3. 3.Drug design: optimizing access to the target</li> <li>4. 4.Getting the drug to market</li> <li>5. 5.Conformational Analysis</li> <li>6. 6.Pharmacophore-Based Design</li> <li>7. 7.Receptor-Based Design</li> <li>8. 8.Docking.</li> <li>9. 9.SAR, QSAR and 3D-QSAR</li> </ol> <p><b>Part E Selected topics in medicinal chemistry</b></p> <ol style="list-style-type: none"> <li>1. 1.Antibacterial agents</li> <li>2. 2.Cholinergics, anticholinergics, and anticholinesterases</li> <li>3. 3.Drugs acting on the adrenergic nervous system</li> <li>4. 4.Nonsteroidal anti-inflammatory drugs (NSAIDs)</li> <li>5. 5.Opioid analgesics</li> <li>6. 6.Antihistamines</li> <li>7. 7.Antiulcer agents</li> </ol> <p><b>Part F Laboratory activities</b></p> <ol style="list-style-type: none"> <li>1. 1.Protein/ligand complex</li> <li>2. 2.Docking</li> </ol>
Bibliography and textbooks	<p>Graham L. Patrick; Introduzione alla Chimica farmaceutica (EdiSES)</p> <p>Gasco, Gualtieri, Melchiorre: Chimica Farmaceutica (Casa Editrice Ambrosiana)</p>
Notes to textbooks	
Teaching methods	<p>Frontal lessons with PPT support</p> <p>Single seat laboratory</p>
Assessment methods (oral, written, ongoing assessment)	Oral examination
Evaluation criteria (describe criteria for each of the above expected outcomes)	<p>Knowledge of basic skills for the chemical-pharmaceutical characterization of bioactive molecules. Ability to use computational techniques for the design and development of bioactive molecules. Skills and communication tools for a discussion on issues related to the chemical-pharmaceutical sector.</p>

Further information	
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