COURSE OF STUDY Pharmaceutical Chemistry And Technology
ACADEMIC YEAR *2023-2024*
ACADEMIC SUBJECT Laboratory of pharmaceutical technology and quality control of pharmaceutical forms

General information	
Year of the course	IV
Academic calendar (starting and ending date)	First Semester 25-09-2023; 19-01-2024
Credits (CFU/ETCS):	06
SSD	CHIM09 Pharmaceutical Technological Application
Language	Italian
Mode of attendance	According to the didactic regulations of the Course in PCT

Professor/ Lecturer	
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Department and address	*Department Of Pharmacy Drug Sciences*
Virtual room	*83vhujf*
Office Hours (and modalities: e.g., by appointment, on line, etc.)	by appointment

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	*30*	*45*	75
CFU/ETCS			
6	*3*	*3*	

Learning Objectives	The course aims to provide the theoretical and practical bases for a valid and modern approach to the preparation, control and dispensing of galenic products. Particular attention will be paid to the preparation of pharmaceutical forms that can be made in pharmacies and the professional responsibility of the pharmacist in this area.
Course prerequisites	Basic knowledge concerning the following disciplines: General and Inorganic Chemistry, Mathematics, Physics, Physical Chemistry, Organic Chemistry I, Organic Chemistry II, Pharmaceutical and Toxicological Chemistry I, Pharmaceutical Technology and Legislation, drug analysis I and II.

Teaching strategie	
Expected learning outcomes in terms of	At the end of the course the student must: • know the fundamental principles for the formulation and preparation of the various conventional dosage forms; • having acquired awareness of the pharmacist's responsibilities within

	the galenic laboratory; • understand the correct procedures for completing the documentation accompanying the shipment of a galenic; • apply the current legislation for the correct pricing of magistral galenic, • recognize the mandatory formal aspects in the magistral prescription for the purposes of shipping, • know the most commonly used methods for the characterization of the final formulation; • evaluate the checks to be carried out on the magisterial and officinal formulations, • know how to set up the main conventional pharmaceutical forms and organize activities within the galenic laboratory in compliance with the NBP.
Knowledge and understanding on:	○ Knowledge of excipients, production methods, controls, technological properties of immediate release pharmaceutical forms.
Applying knowledge and understanding on:	○ Ability to independently apply the acquired knowledge to make a given dosage form.
Soft skills	• *Making informed judgments and choices* ○ Critical ability to face the professional responsibilities of the preparatory pharmacist. ○ Expressive skills with appropriate use of the specific language of the discipline. ○ Ability to use basic knowledge and information for practicing the profession of pharmaceutical technologist. Ability to update, with the consultation of scientific publications in the field of pharmaceutical-technological-application disciplines.
Syllabus	
Content knowledge	The course contents can be traced back to learning the practice for a correct and modern approach to the dispensation of galenics. Particular attention is paid to the preparation and control of pharmaceutical forms in pharmacies and the professional responsibility of the pharmacist in this area. Legislative rules concerning the preparation, packaging and pricing of galenic preparations. • Metrology • Preparation and assays according to I. Ph. of the following dosage forms: o Powders and granules for oral use o Powders for topical application o Tablets o Capsules o Liquid preparations for oral use o Liquid preparations for cutaneous application o Semi-solid preparations for skin application o Vaginal preparations o Rectal preparations Technological controls on powders, granules, tablets. Rheological measurements on Newtonian fluids, evaluation of the surface tension of aqueous solutions, density of hydroalcoholic solutions, degree of flocculation of suspensions.
Texts and readings	• P. Colombo e coll. "Principi di Tecnologie Farmaceutiche" - Casa Editrice Ambrosiana • Howard C. Ansel, Shelly J. Stockton "Principi di Calcolo farmaceutico", XV Ed Edra, 2017.

	• Brusa P., et al. "Manuale di Galenica" Casa editrice Ambrosiana 2019. • Franco Bettiol "Manuale delle preparazioni galeniche" IV ed. Tecniche nuove 2016. • Enrico Ragazzi "Galenica pratica" Edizioni Libreria Cortina Padova 2006. • Farmacopea Ufficiale Italiana in vigore. Autori vari "Tariffa Nazionale per la dispensazione dei medicinali" – Linee Guida SIFAP, Edra.
Notes, additional materials	
Repository	

Assessment	
Assessment methods	Lectures in the classroom with the aid of presentations in electronic format, projection of films and laboratory exercises both in single seats and in groups, with the introduction of active learning practices. In particular, he will have to take a practical test at the end of the cycle of exercises in a single place, consisting in the shipment of a magisterial galenic recipe, or in the preparation of a pharmaceutical form and in the compilation of the processing sheet. To pass the test and access the interview it is necessary to acquire a minimum score of 18 out of 30. The weight of this test will constitute 30% of the final grade. The oral exam will consist in the proposition of tw questions on laboratory topics of technology and quality control of the pharmaceutical forms in the program. The final grade will take into account various factors such as: appropriateness, correctness and congruence of the knowledge, skills and competences possessed and / or manifested.
Assessment criteria	• *Knowledge and understanding:* 20% • *Applying knowledge and understanding:* 20% • *Autonomy of judgment:* 10% • *Communicating knowledge and understanding:* 20% • *Communication skills:* 20% ○ *Capacities to continue learning:* 10%
Final exam and grading criteria	
Further information	
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