

Course Unit	Pharmaceutical Technology II	Field of study	Pharmacy
Bachelor in	Pharmacy	School	School of Health
Academic Year	2022/2023	Year of study	2
Type	Semestral	Semester	2
Level	1-2	ECTS credits	5.0
Code	9549-644-2206-00-22		
Workload (hours)	135	Contact hours	T - , TP 30 , PL 30 , TC - , S - , E - , OT 7,5 , O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Luis Migue Fernandes Nascimento, Maria Angela Goncalves Rocha de Aragao

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. To know the galenic preparations produced in pharmacy and the technologies for the production medicine to normalize procedures
2. To understand the processing of natural and synthetic products in medicines, for prophylaxis, treatment or diagnosis of several diseases
3. To understand how to prepare, to package, to preserv and to dispense medicines, dosing more precisely to facilitate its administration and ensure an therapeutical effectiveness
4. To understand the formulation to develop methods and techniques in galenic operations.
5. To plan and apply safety and quality norms leeding to good laboratory practice.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Not applicable

### Course contents

Study of galenic forms obtained by multiple or complex operations, galenic forms of topical application, galenic forms obtained by aseptic, galenic forms modified availability, Plaster, sutures and irrigation products, proper standards for manufacture of medicines. Preparation of various galenic forms in the laboratory.

### Course contents (extended version)

1. Theoretical-Practical learning:
2. Galenic forms prepared by Complex Operations
  - Forms for application in the skin (Creams, Lotions)
3. Galenic forms for topic application
  - Rectal application forms-suppositories
  - Nasal application forms
  - Auricular application forms
  - Oftalmic application forms
  - Uretral application forms
  - Vaginal application forms
4. Galenic Forms prepared by Aseptic Method
  - Parenteric Nutrition
  - Cytotoxics
5. Galenic forms of altered disponibility
6. Plaster, suture, draining and irrigation products
7. Norms of medicine production
8. Medicine Stability
9. Practical learning:
  - Laboratorial galenic forms preparation - creams, lotions, solutions.

### Recommended reading

1. Prista, L. N. , Alves, A. C. , & Morgado, R. (2011). Tecnologia Farmacêutica, (8ª Ed). Vol I, II e III. Lisboa, Fundação Calouste Gulbenkian.
2. Hardman, J. G. , & Limbird, L. E. (Eds. ). (2003). Goodman & Gilman's the Pharmacological Basis of Therapeutics(10ª Ed. ). Rio de Janeiro, McGraw-Hill.
3. Lachman, L. , Lieberman, H. A. , Kanig, J. L. , Pinto, J. F. , & Fernandes, A. I. H. D. (2001). Teoria e prática na indústria farmacêutica. Lisboa, Fundação Calouste Gulbenkian.
4. Gennaro, A. R. (2004). Remington: a ciência e a prática da farmácia (20ª Ed). Rio de janeiro, Guanabara Koogan SA,
5. Farmacopeia Portuguesa IX (2008). Lisboa, Instituto Nacional da Farmácia e do Medicamento - Ministério da Saúde

### Teaching and learning methods

Theoretical-Practical Learning: Expositive method; Practical Learning: Demonstration of practical activities.

### Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
  - Intermediate Written Test - 50% (Minimum grade of 8.5 values.
  - 2 intermediate written tests, individual weight of 25%.)
  - Reports and Guides - 20% (Minimum grade of 8.5 values (obtained during the semester) - Pedag. Reg.)
  - Laboratory Work - 30% (Minimum grade of 8. 5 (obtained at the end of the semester))
2. Alternative 3 - (Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 50% (Minimum grade of 8. 5 values (in the respective examination period), according to ESSa's Ped. Regul.)
  - Laboratory Work - 50% (Minimum grade of 8. 5 values (obtained at the end of the sem. or examination))

### Language of instruction

Portuguese, with additional English support for foreign students.

## Electronic validation

Luis Migue Fernandes Nascimento	Olivia Rodrigues Pereira	Josiana Adelaide Vaz	Adília Maria Pires da Silva Fernandes
27-04-2023	28-04-2023	06-05-2023	06-05-2023