

Course Unit	Laboratorial Techniques in Pharmacy		Field of study	Pharmacy	
Bachelor in	Pharmacy		School	School of Health	
Academic Year	2022/2023	Year of study	1	Level	1-1
Type	Semestral	Semester	1	ECTS credits	5.0
Code	9549-644-1106-00-22				
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) Maria Angela Goncalves Rocha de Aragao, Tania Cristina Sao Pedro Pires

#### Learning outcomes and competences

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

1. Basic knowledge of safety rules in the laboratory, cleaning and disinfection.
2. Identification of methods and laboratory techniques in pharmacy
3. Application of methods and laboratory techniques in pharmacy.

#### Prerequisites

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

#### Course contents

Theoretical-Practical learning: 1. Definition of concepts; 2. Safety, cleaning and disinfection rules in laboratory; 3. General Purpose Pharmaceutical Operations; 4. Pharmaceutical operations properly so called; 5. Sterilization Practical Learning: Will be practised in laboratory studied techniques.

#### Course contents (extended version)

1. Definition of concepts
2. Safety, cleaning and disinfection rules in laboratory
3. General Purpose Pharmaceutical Operations
  - Weighing
  - Liquid Volume Measurement
  - Drug Doses measurement
4. Pharmaceutical operations properly so called
  - Operations mechanical separation of solids.
  - Mechanical operations of separating solids from liquids or immiscible liquids.
  - Mechanical operations division.
  - Physical operations requiring the intervention of cold or heat
  - Physical operations requiring the intervention of a liquid
5. Sterilization

#### Recommended reading

1. Associação Nacional de Farmácias. (2009) Formulário Galénico Português. Vol. 1 e 2.
2. MORGADO, R. ; ALVES, C. ; (2011) ; PRISTA, L. – Tecnologia Farmacêutica. 5ª ed. Vol. II. Fundação Calouste Gulbenkian, Lisboa
3. Infarmed. (2008). Farmacopeia Portuguesa IX. Lisboa.
4. GENNARO AR. ; (2004) Remington's: A Ciência e a Prática da Farmácia. 20ª Ed. Editora Guanabara Koogan.
5. Diário da República, 1ª série – B, número 19, de 23 de Janeiro, 1992 – Guia para o bom fabrico de medicamentos.

#### Teaching and learning methods

Theoretical-Practical learning: Slide show and video projection Practical learning: Demonstration of the techniques in the laboratory.

#### Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 60% (Minimum grade of 8. 5 values (in the respective examination period) according to ESSA's Ped. Regul.)
  - Reports and Guides - 20% (Minimum grade of 8. 5 values in the Practical component (obtained during the semester) - Pedag. Reg.)
  - Laboratory Work - 20% (Minimum grade of 8. 5 values in the Practical component (obtained at the end of the semester))
2. Alternative 2 - (Regular) (Supplementary, Special)
  - Final Written Exam - 60% (Minimum grade of 8. 5 values (in the respective examination period), according to ESSA's Ped. Regul.)
  - Laboratory Work - 40% (Minimum grade of 8. 5 values in the Practical comp. (obtained at the end of the sem. or examination))
3. Alternative 3 - (Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 60% (Minimum grade of 8. 5 values (in the respective examination period), according to ESSA's Ped. Regul.)
  - Laboratory Work - 40% (Minimum grade of 8. 5 values in the Practical comp. (obtained at the end of the sem. or examination))
4. Alternative 4 - Large class - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 60% (Minimum grade of 8. 5 values (in the respective examination period) according to ESSA's Ped. Regul.)
  - Reports and Guides - 40% (Minimum grade of 8. 5 values in the Practical component (obtained during the semester) - Pedag. Reg.)

#### Language of instruction

1. Portuguese
2. Portuguese, with additional English support for foreign students.

#### Electronic validation

Maria Angela Goncalves Rocha de Aragao, Tania Cristina Sao Pedro Pires	Luis Migue Fernandes Nascimento	Juliana Almeida de Souza	Adília Maria Pires da Silva Fernandes
08-11-2022	11-11-2022	28-02-2023	04-03-2023