



1. General information

Course: PHARMACEUTICAL CARE FOR ONCOHAEMATOLOGICAL PATIENTS**Type:** ELECTIVE**Degree:** 376 - UNDERGRADUATE DEGREE PROGRAMME IN PHARMACY**Center:** 14 - FACULTY OF PHARMACY**Year:** 5**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 14343**ECTS credits:** 4.5**Academic year:** 2023-24**Group(s):** 10**Duration:** First semester**Second language:** English**English Friendly:** Y**Bilingual:** N

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2. Pre-Requisites

There are no prerequisites, although previous knowledge of Pharmacology, Pharmacokinetics, Biostatistics and Bioinformatics is recommended.

3. Justification in the curriculum, relation to other subjects and to the profession

The number of oncological drugs in clinical research is increasing each year, making it one of the main lines of health research, a truly dynamic field in continuous progress.

Because of its severity, prevalence and complexity, without losing sight of its economic impact, cancer patients are a priority for health systems.

The objective of the course is to prepare students to offer comprehensive pharmaceutical care to the onco-hematological patient, introducing the student to the use of the basic concepts, as well as the procedures, symptoms, diagnosis, treatment and care that should be addressed in this type of patient.

It is therefore intended to familiarize the student with the pharmaceutical intervention, as an improvement in the healthcare process of pharmacological treatment, as well as to convey to students the importance of quality and safety in the preparation, administration and dispensing of risk drugs.

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4. Degree competences achieved in this course

Course competences

Code	Description
B01	Proficiency in a second foreign language at level B1 of the Common European Framework of Reference for Languages.
B02	Knowledge of Information and Communication Technologies (ICT).
B03	A correct oral and written communication
B04	Ethical commitment and professional deontology.
B05	Ability to develop those learning skills necessary to undertake further studies.
EF04	Identify and to evaluate the potential pharmacokinetic interactions between the active pharmaceutical ingredients and medicines
EM01	Using drugs safely, taking into account their physical properties and the kind of vehicles directly related with their use.
EM04	Study the effects of substances with pharmacological activity.
EM05	Know and understand the techniques used in the design and evaluation of pre-clinical and clinical trials.
EM06	Carry out clinical and social pharmacy activities, following the pharmaceutical care cycle.
EM07	Promote the rational use of medicines and health products.
EM08	Acquire the necessary skills to provide therapeutic advices in pharmacology and dietetics, as well as to give nutritional advice to the users of the establishment where they provide customer service
EM09	Understand the relationship between diet and health, and the importance of diet in the treatment and prevention of diseases.
EM10	Know and understand the management and characteristics of pharmaceutical assistance in Structures
EM12	Acquire a detailed knowledge about the drugs properties and their mechanism of action
EM13	Know and understand the structure and function of the human body, as well as the general mechanisms of disease, molecular,

	structural and functional alterations, syndromic expression and therapeutic tools to restore health.
EM17	Know the molecular, cellular and tissue components of the immune system.
EM18	Understand the recognition mechanisms and effector mechanisms involved in the innate and acquired immune response, as well as diseases associated with the Immune System and therapeutic tools aimed to the prevention and the recovery of health.
EM19	Understand the cellular and molecular bases and etiological mechanisms of immunological-based diseases
EM20	Know the analytical techniques related to immunological laboratory diagnosis: design, implement and comprehend the immunological techniques applied to research, health service or industry
EM22	Interaction of drugs with other drugs or substances. Prevention and treatment.
G02	Evaluate the therapeutic and toxic effects of substances with pharmacological activity.
G03	Know how to apply the scientific method and acquire skills in the handling of legislation, sources of information, bibliography, elaboration of protocols and other aspects considered necessary for the design and critical evaluation of preclinical and clinical trials.
G04	Design, prepare, supply and dispense medicines and other products of health interest.
G06	Promote the rational use of medicines and medical devices, as well as to acquire basic knowledge in clinical management, health economics and the efficient use of health resources.
G07	Identify, evaluate and assess problems related to drugs and medicines, as well as participate in pharmacovigilance activities.
G08	Conducting clinical and social pharmacy activities, following the pharmaceutical care cycle.
G09	Intervene in health promotion and disease prevention activities at the individual, family and community levels, with an integral and multi-professional vision of the health-disease process.
G13	Develop communication and information skills, both oral and written, to deal with patients and users of the centre where they carry out their professional activity. Promote the capacity to work and collaborate with multidisciplinary teams and those related to other health professionals.
G14	Know the ethical and deontological principles according to the legislative, regulatory and administrative provisions governing professional practice, understanding the ethical implications of health in a changing social context.
G15	Recognise own limitations and the need to maintain and update professional competence, with particular emphasis on self-learning of new knowledge based on scientific evidence.
T01	Critical thinking skills based on the application of the scientific method
T02	Ability to manage quality scientific information, bibliography, specialized databases and resources accessible through the Internet.
T03	Handling of basic and specific software for the treatment of information and experimental results.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

The student will know and learn to consult Clinical Practice Guidelines and protocols in the field of oncohematology (NCCN, MASC, EORT, ASCO, ASHP).
The student will be trained in the management of oncological drugs and will know the differential characteristics regarding other pharmacological therapies.
The student will know the importance of education and advice to patients and caregivers to approach optimally their pharmacotherapeutic treatment established in the achievement of the therapeutic objectives decided together with the medical responsible for the patient.
The student will acquire the knowledge and skills necessary to design a pharmacotherapeutic plan that helps to predict, prevent and solve problems related to the treatment or illness of oncohematological patients.
The student will develop the knowledge and skills necessary to know how to integrate all the needs related to pharmacotherapy of the oncohematological patient.
The student will know the relevance of predictive and prognostic factors and their involvement in the development of anticancer treatments and strategies.

Additional outcomes

They have not been established.

6. Units / Contents

Unit 1: Epidemiology, diagnosis and the basis of antineoplastic therapy.
Unit 2: Pharmacology of cancer treatment.
Unit 3: Pharmacotherapeutic safety in cancer patient.
Unit 4: Symptoms related to oncological disease and its treatment. Anemia, emesis, chronic pain, neutropenia and malnutrition.
Unit 5: Pharmaceutical care in breast cancer.
Unit 6: Pharmaceutical care in lung cancer.
Unit 7: Pharmaceutical care in colon cancer.
Unit 8: Pharmaceutical care in prostate and testicular cancer.
Unit 9: Pharmaceutical care in gastrointestinal cancer.
Unit 10: Pharmaceutical care in head and neck tumors.
Unit 11: Pharmaceutical care in tumors of the Central Nervous System and melanoma.
Unit 12: Pharmaceutical care in pancreas and bile ducts.
Unit 13: Pharmaceutical care in bladder and kidney cancer.
Unit 14: Pharmaceutical care in gynaecological cancer.
Unit 15: Pharmaceutical care in hematological cancer.
Unit 16: Pharmaceutical care in bone marrow transplantation.
Unit 17: Pharmaceutical care in pediatric cancer.
Unit 18: anagement of cytostatics in the hospital and patient's home. Waste and excreta management.

ADDITIONAL COMMENTS, REMARKS

Research and management of guidelines and protocols in the field of oncohaematology. Resolution of practical cases.

The material provided in class by the teacher is the teacher's intellectual material and may not be distributed by the student. Likewise, it is not permitted to record classes without the teacher's permission.

7. Activities, Units/Modules and Methodology							
Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Combination of methods	B01 B02 B03 B04 B05 EF04 EM01 EM04 EM05 EM06 EM07 EM08 EM09 EM10 EM12 EM13 EM17 EM18 EM19 EM20 EM22 G02 G03 G04 G06 G07 G08 G09 G13 G14 G15 T01 T02 T03	1.62	40.5	Y	N	Face-to-face teaching combining different teaching methodologies: lecture/lecture method with case studies carried out in workshops and seminars throughout the course. The active participation of the student will be valued, through individual and cooperative work both in the classroom and outside it, through problem solving and the completion of work and presentations developed in workshops and seminars throughout the course that will be taken into account in the final assessment of the subject. Classroom teaching in which students will be provided with the teaching material necessary to follow the course in the form of PowerPoint presentations, collections of notes and activities that will be accessible on the Virtual Campus. They will also be indicated the most appropriate bibliography in each case.
Study and Exam Preparation [OFF-SITE]	Self-study	B01 B02 B03 B04 B05 EM10 EM12 EM13 EM17 EM18 EM19 EM20 EM22 G02 G03 G04 G06 G07 G08 G09 G13 G14 G15 T01 T02 T03	2.72	68	Y	N	To facilitate autonomous work, students may request personal tutorials on the contents of the subject by arranging an interview with the teacher in advance.
Formative Assessment [ON-SITE]	Assessment tests	B01 B02 B03 B04 B05 EM10 EM12 EM13 EM17 EM18 EM19 EM20 EM22 G02 G03 G04 G06 G07 G08 G09 G13 G14 G15 T01 T02 T03	0.16	4	Y	Y	Specific dates have been set aside in the academic calendar specific dates have been set aside in the so that the assessment tests do not assessment tests do not coincide with other teaching activities.
Total:			4.5	112.5			
Total credits of in-class work: 1.78			Total class time hours: 44.5				
Total credits of out of class work: 2.72			Total hours of out of class work: 68				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	70.00%	70.00%	Both the theoretical knowledge and the application of the same to the resolution of problems and practical cases are evaluated.
Assessment of active participation	30.00%	30.00%	Where the realization of problems and activities proposed in class are valued, as well as the participation in the seminars and exhibition of works. The proposed activities will be available on the virtual campus.
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

In this mode, the subject will follow a continuous assessment, adapted to the regulatory standards of the Castilla-La Mancha University. The final grade will consider, proportionally, the average written tests (70%), participation in seminars and activities proposed in class (30%).

It will be assumed that all students opt for the continuous mode, unless otherwise informed (non-continuous mode) by e-mail to the lecturer responsible for the subject until 50% of all assessable activities have been completed or the class period has ended.

To pass the course, students must obtain a minimum mark of 4 in the THEORETICAL MODULE, if they obtain a final mark of 5 in the average evaluation between the written tests and the evaluation of class participation and performance.

EVALUATION THEORETICAL MODULE. 70% of the final grade. It will consist of ONE PARTIAL TEST (continuous evaluation) approximately when half of the syllabus has been taught, and ONE FINAL TEST IN ORDINARY CONVOCATORY (at the end of the semester), both tests may include theoretical concepts, case studies, problems, etc. Students will be able to take the FINAL TEST in the ORDINARY CONVOCATORY only with the subject matter pending evaluation as long as they have obtained a minimum grade of 4 in the PARTIAL TEST. Otherwise, they will have to take the test in the ORDINARY CONVOCATORY WITH THE COMPLETE Syllabus. The student would pass if the minimum grade obtained in the theoretical module is a 4 and the final average grade of evaluation of all the modules is a 5.

EVALUATION ACTIVITY MODULE. 30% of the final grade. Its evaluation will be in the classroom through the realization of activities proposed by the teacher. They have a NON-COMPULSORY character. Assessment and class participation activities will be presented on the virtual campus.

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In accordance with the provisions of article 9 of the Student Assessment Regulations, the test in which fraud has been detected will be considered invalid and will be graded with a failure (0), including any type of plagiarism detected as a fraudulent act.

Non-continuous evaluation:

The subject can be adapted to a non-continuous evaluation according to the regulatory standards of the Castilla-La Mancha University. The final grade will consider, proportionally, the average written tests (70%), participation in seminars and activities proposed by the teachers (30%). To pass the course, students must obtain a minimum mark of 4 in the THEORETICAL MODULE, if they obtain a final mark of 5 in the average evaluation between the written tests and the evaluation of participation by means of the activities proposed by the teachers.

EVALUATION OF THE THEORETICAL MODULE. 70% of the final grade. It will consist of FINAL EXAM IN ORDINARY SESSION (at the end of the semester), the exam may include theoretical concepts, practical cases, problems. If the minimum mark obtained is a 4 and the final average mark for the assessment of all the modules is 5.

Activity module Evaluation: 30% by participation in seminars and activities proposed by the teachers. They have a NON-COMPULSORY character. These activities will be presented on the virtual campus.

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Specifications for the resit/retake exam:

CONTINUOUS ASSESSMENT.

It will be assumed that all students opt for the continuous mode, unless otherwise informed (non-continuous mode) by e-mail to the lecturer responsible for the subject until 50% of all assessable activities have been completed or the class period has ended.

It is essential to obtain a 5 in the final grade to pass the course. To do so, students must obtain a minimum mark of 4 in the theory module if they obtain a final mark of 5 in the average evaluation between the written tests and the evaluation of participation and performance in class.

Theoretical module evaluation. 70% of the final qualification. It will consist in ONE EXTRAORDINARY EXAM that may include theoretical concepts, practical cases, problems, etc.

Activity module evaluation: 30% of the final qualification. Teachers may propose activities to the student to evaluate this module of the subject. These activities will be presented on the virtual campus. They are NOT COMPULSORY.

NON-CONTINUOUS EVALUACIÓN. Students must obtain a minimum mark of 4 in the theory module if they obtain a final mark of 5 in the average evaluation between the written tests and the practical activities proposed by the teachers.

THEORETICAL MODULE EVALUATION: 70% of the final qualification. It will consist in ONE EXTRAORDINARY EXAM that may include theoretical concepts, practical cases, problems, etc.

Activity module 30% of the final qualification. Teachers may propose activities to the student in the virtual campus to evaluate this module of the subject. They are NOT COMPULSORY.

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In accordance with the provisions of article 9 of the Student Assessment Regulations, the test in which fraud has been detected will be considered invalid and will be graded with a failure (0), including any type of plagiarism detected as a fraudulent act.

Specifications for the second resit / retake exam:

Only students who meet the requirements set out in the Student Assessment Regulations of the University of Castilla-La Mancha will be able to access this call, they will be evaluated according to the criteria applied in the extraordinary call.

In accordance with the provisions of article 9 of the Student Assessment Regulations, the test in which fraud has been detected will be considered invalid and will be graded with a failure (0), including any type of plagiarism detected as a fraudulent act.

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	40.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	68
Formative Assessment [PRESENCIAL][Assessment tests]	4
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Combination of methods]	40.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	68
Formative Assessment [PRESENCIAL][Assessment tests]	4
Total horas: 112.5	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
American College of Clinical Pharmacy	Oncology pharmacy preparatory review course	ASHP/ACCP			2022	
Diedra L	Drug information handbook for oncology	Lexicomp		9781591953036	2019	
Dipiro JT, Talbert RL et al.	Pharmacotherapy a Pathopsycologic Approach. 10th Ed.	McGraw-Hill		9781259587481	2017	
Lorenzo-Velázquez, B. (1901-1985)	Farmacología básica y clínica. 19 Ed.	Editorial Médica Panamericana		9786078546077	2018	
Stockley, IH	Interacciones farmacológicas. 3rd. Ed	Pharma Editores		9788495993304	2009	
Trissel LA	Handbook of injectable drugs. 18th Ed.	American of Health System Pharmacist		9781585284191	2014	