

ACADEMIC YEAR 2026-2027



Code **33198**: Interaction Drug-Organism
 Code **33199**: Physiological Basis of Therapeutics
 Code **33200**: Pharmacology of Organs and Systems
 Code **33201**: Methodology in Clinical Trials
 Code **33202**: Communication and scientific documentation /Data analysis

SEPTEMBER (week 1)

	MONDAY-14	TUESDAY-15	WEDNESDAY 16	THURSDAY-17	FRIDAY-18
9-10h					
10-11h		Presentation <i>Prof. Fernando de la Cuesta</i> <i>Prof. Lus Gandía</i>	33199 Homeostasis. Transport through membrane. <i>Prof. Javier Blanco</i>	33199 Resting membrane potential <i>Prof. Javier Blanco</i>	33199 General organization of the nervous system <i>Prof. Álvaro Llorente</i>
11-12h		33201 Drug development: from preclinical to human studies <i>Prof. Francisco Abad</i>	33199 Intercellular communication <i>Prof. Javier Blanco</i>	33199 Action potential <i>Prof. Javier Blanco</i>	33199 Synaptic transmission <i>Prof. Javier Blanco</i>
12-13h		33198 Pharmacokinetics I <i>Prof. Almudena Albillos</i>	33198 Pharmacokinetics II <i>Prof. Almudena Albillos</i>	TFM-GUIDELINES <i>Prof. Fernando de la Cuesta</i> <i>Prof. Lus Gandía</i>	
13-14 h					

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SEPTEMBER (week 2)

	MONDAY-21	TUESDAY-22	WEDNESDAY 23	THURSDAY-24	FRIDAY-25
10-11h	33199 Skeletal and smooth muscle contraction <i>Prof. Javier Blanco</i>	33198 Targets II: Enzymes and transporters <i>Prof. Concha Peiró</i>	33199 Special senses II <i>Prof. Alvaro Llorente</i>	33198 Targets IV: Receptors with enzymatic activity and nuclear receptors <i>Prof. Concha Peiró</i>	33202 SEMINAR I Research resources (BRING COMPUTER) <i>Prof. Elena Tortosa</i>
11-12h	33199 Motor nervous system: reflexes and voluntary movement <i>Prof. Álvaro Llorente</i>	33199 Somatosensory system <i>Prof. Álvaro Llorente</i>	33199 Language, learning and memory <i>Prof. Álvaro Llorente</i>	33198 Drug side effects and pharmacological interactions <i>Prof. Antonio Carcas</i>	
12-13h	33198 Drug-receptor interaction <i>Prof. Carlos F. Sánchez Ferrer.</i>	33199 Special senses I <i>Prof. Álvaro Llorente</i>	33201 Clinical drug development: phases and types of studies <i>Prof. Antonio Carcas</i>	33201 Clinical trials: definitions, methodological basis, the development of a clinical trial <i>Prof. Alberto Borobia</i>	33201 Objectives definition. Selection of endpoints. Defining the study population <i>Prof. Alberto Borobia</i>
13-14 h	33198 Targets I: Ion channels <i>Prof. Concha Peiró</i>		33198 Targets III: ionotropic and metabotropic receptors <i>Prof. Concha Peiró.</i>		
14-15 h					

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SEPTEMBER-OCTOBER (week 3)

	MONDAY-28	TUESDAY-29	WEDNESDAY 30	THURSDAY-1	FRIDAY-2
9-10h					
10-11h	33199 SEMINAR Sleep Temperature Control <i>Prof. Álvaro Llorente</i>	33199 Introduction to cardiovascular system. Cardiac muscle <i>Prof. Silvia Arribas</i>	33199 Cardiac Function <i>Prof. Silvia Arribas</i>	33199 Hemodynamics. Microcirculation <i>Prof. Silvia Arribas</i>	33202 SEMINAR Designing a pharmacological research project I (2 hours) <i>Prof. Elena Tortosa</i> <i>Prof. M^a Dolores Sánchez</i> <i>Prof. Fernando de la Cuesta</i>
11-12h		33199 Cardiac Electric Activity. Cardiac mechanics <i>Prof. Silvia Arribas</i>	33199 Systemic circulation <i>Prof. Silvia Arribas</i>	33199 Cardiac output. Venous return <i>Prof. Silvia Arribas</i>	
12-13h	33200 Neurotransmitters in the autonomic nervous system <i>Prof. Adrián Girona</i>	33200 Adrenergic drugs <i>Prof. Carlos Sanchez Ferrer</i>	33198 Drugs for special populations <i>Prof. Irene García</i>	33198 SEMINAR- II Quantifying drug-receptor interaction <i>Prof. Jesús Hernández-Guijo</i>	33198 Polymorphisms of receptors, enzymes, metabolizers and transporters <i>Prof. Irene García</i>
13-14 h					

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OCTOBER (week 4)

	MONDAY-5	TUESDAY-6	WEDNESDAY -7	THURSDAY-8	FRIDAY-9
9-10h					
10-11h	33199 SEMINAR Blood pressure regulation (Bring computer)	33199 Blood Hematopoiesis <i>Prof. Ernesto Cortés</i>	33199 Erythrocytes <i>Prof. Ernesto Cortés</i>	33199 Haemostasia <i>Prof. Ernesto Cortés</i>	33199 Acquired immunity <i>Prof. Ernesto Cortés</i>
11-12h	 <i>Prof. Silvia Arribas</i>	33200 Hypnotic and sedative drugs <i>Prof. María F. Cano-Abad</i>	33201 Types of design: parallel, crossover, sequential, therapeutic equivalence <i>Prof. Alberto Borobia</i>	33199 Innate immunity <i>Prof. Ernesto Cortés</i>	33199 SEMINAR Blood groups
12-13h	33200 Neurotransmitters in the central nervous system <i>Prof. María F. Cano-Abad</i>	33200 Antidepressants <i>Prof. María F. Cano-Abad</i>	33200 Cholinergic drugs <i>Prof. Manuela García</i>	33201 Bias in clinical trials. Randomisation and blinding <i>Prof. Paula Valle</i>	33198 SEMINAR- III Pharmacogenetics <i>Prof. Irene García</i>
13-14h					

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OCTOBER (week 5)

	MONDAY-12	TUESDAY-13	WEDNESDAY -14	THURSDAY-15	FRIDAY-16
9-10h					
10-11h		33201 Safety evaluation in clinical trials. <i>Prof. Irene García</i>	33201 Analysis and interpretation of the results of a clinical trial <i>Prof. Francisco Abad</i>	33201 Methods of synthesis of scientific evidence: the meta-analysis <i>Prof. Alberto Borobia</i>	
11-12h		33200 Antipsychotic and antiparkinson drugs <i>Prof. María F. Cano</i>	33200 Drugs for the treatment of migraine <i>Prof. Manuela G^a López</i>	33200 Steroidal anti-inflammatory drugs (corticosteroids) <i>Prof. Concha Peiró</i>	
12-13h		33200 Antiepileptic drugs <i>Prof. María Cano</i>	33200 Non-steroidal and anti-inflammatory drugs <i>Prof. Concha Peiró</i>	33199 Mechanics of ventilation. Spirometry <i>Prof. Miriam Granada</i>	
13-14h		33201 Principles of pharmaco-economic analysis in the clinical trials <i>Prof. Antonio Carcas</i>	33199 Structure and functions of the respiratory system <i>Prof. Miriam Granada</i>	33200 Biological anti-inflammatory drugs <i>Prof. Concha Peiró</i>	

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OCTOBER (week 6)

	MONDAY-19	TUESDAY-20	WEDNESDAY -21	THURSDAY-22	FRIDAY-23
9-10h		33200 : SEMINAR -I Pharmacology of the ANS. <i>Prof. Adrián Gironda</i>			
10-11h	33201 The ethics of clinical research: the role of investigators, regulators and ethics committees. The patient informed consent. <i>Prof. Paula Valle</i>		33199 Renal function. Glomerular filtration and renal blood flow. <i>Prof. Carmen Iglesias-Cruz</i>	33199 Tubular processes <i>Prof. Carmen Iglesias-Cruz</i>	33202 Statistics and probability: from sample to population <i>Prof. Amparo Baillo</i> <i>Prof. Martín Sánchez</i>
11-12h	33200 Opioids <i>Prof. Carlos F. Sánchez Ferrer</i>	33200 Drugs for the treatment of anaemia and colony stimulating drugs <i>Prof. Luis Gandía</i>	3199 SEMINAR Breathing regulation <i>Prof. Miriam Granado</i>	33200 Drugs that affect blood coagulation <i>Prof. Luis Gandía</i>	33202 Confidence intervals <i>Prof. Amparo Baillo</i> <i>Prof. Martín Sánchez</i>
12-13h	33200 Immunomodulatory drugs <i>Prof. Carlos F. Sánchez Ferrer</i>	33199 Exchange and transport of gases <i>Prof. Miriam Granado</i>		33201 The regulation of clinical trial drug development. National and International clinical trials <i>Prof. Paula Valle</i>	33200 : SEMINAR- II Pharmacology of the CNS <i>Prof. María Cano</i>
13-14h	33199 Pulmonary ventilation and perfusion <i>Prof. Miriam Granado</i>				

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OCTOBER-NOVEMBER (week 7)

	MONDAY-26	TUESDAY-27	WEDNESDAY -28	THURSDAY-29	FRIDAY-30
9-10h					
10-11h	33201 SEMINAR Internal validity. Assessment of bias. Examples <i>Prof. Antonio Carcas</i> <i>Prof. Irene García</i>	33202 SEMINAR Designing a pharmacological research project II <i>Prof. Elena Tortosa</i> <i>Prof. M^a Dolores Sánchez</i> <i>Prof. Fernando de la Cuesta</i>	333202 Continuous variables (1) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>	33202 P-values and statistical significance (1) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>	33202 Statistical assumptions <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>
11-12h			33202 Continuous variables (2) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>	33202 P-values and statistical significance (2) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>	33202 Statistical tests (1) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>
12-13h	33200 Mechanism of action of antibiotics <i>Prof. Antopnio Carcas</i>		33200 Antiviral drugs <i>Prof. Antonio Carcas</i>	33199 Countercurrent mechanism. Plasma clearance. <i>Prof. Carmen Iglesias-Cruz</i>	33200 Antifungal and antiparasitic drugs <i>Prof. Antonio Carcas</i>
13-14h					33200 Clasification of antibiotics <i>Prof. Antonio Carcas</i>

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NOVEMBER (week 8)

	MONDAY-2	TUESDAY-3	WEDNESDAY -4	THURSDAY-5	FRIDAY-6
9-10 h					
10-11 h		33200 Vasodilators and calcium channel blockers <i>Prof. Ana Briones</i>	33199 SEMINAR Renal function <i>Prof. Carmen Iglesias-Cruz</i>	33199 Introduction to digestive function. Mastication, salivation and deglutition <i>Prof. Álvaro Llorente</i>	33199 Small and large intestine motility and secretion <i>Prof. Álvaro Llorente</i>
11-12 h		33199 Renal control of extracellular volume and osmolarity. <i>Prof. Carmen Iglesias-Cruz</i>	33201 SEMINAR End-points in clinical trials and its clinical relevance (composite, surrogate) <i>Prof. Antonio Carcas</i> <i>Prof. Irene García</i>	33199 Stomach motility and secretion. <i>Prof. Álvaro Llorente</i>	33201 SEMINAR External validity and generalization of results <i>Prof. Antonio Carcas</i> <i>Prof. Irene García</i>
12-13 h		33200 Pharmacology of the respiratory system <i>Prof. Manuela G^a López</i>		33200 Lipid lowering medication <i>Prof. Ana Briones</i>	
13-14 h		33199 pH regulation <i>Prof. Carmen Iglesias-Cruz</i>	33200 Ionotropics and drugs for heart failure treatment <i>Prof. Ana Briones</i>	33200 Diuretics <i>Prof. Ana Briones</i>	33200 Pharmacology of the digestive system <i>Prof. Manuela G^a López</i>
					<i>Prof. Manuela G^a López</i>

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NOVEMBER (week 9)

	MONDAY-9	TUESDAY-10	WEDNESDAY -11	THURSDAY-12	FRIDAY-13
9-10 h					
10-11 h		33199 Digestion and absorption of carbohydrates and proteins <i>Prof. Álvaro Llorente</i>	33202 Statistical tests (2) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>	33200 : SEMINAR III- Antiinflammatory- Immunomodulatory drugs <i>Prof. Concha Peiró</i>	33202 Fitting models (1) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>
11-12 h		33199 Digestion and absorption of lipids. Liver function <i>Prof. Álvaro Llorente</i>	33202 Statistical tests (3) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>		33202 Fitting models (2) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>
12-13 h			33199 SEMINAR Digestive function <i>Prof. Álvaro Llorente</i>	33200 Beta-blockers and renin angiotensin system inhibitors <i>Prof. Ana Briones</i>	33202 Fitting models (3) <i>Prof. Amparo Baíllo</i> <i>Prof. Martín Sánchez</i>
13-14 h					

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NOVEMBER (week 10)

	MONDAY-16	TUESDAY-17	WEDNESDAY -18	THURSDAY-19	FRIDAY-20
9-10 h					
10-11 h	33199 Hypothalamus-pituitary axis. <i>Prof. Carmen Iglesias-Cruz</i>	33199 Sex hormones <i>Prof. Carmen Iglesias-Cruz</i>	33199 Hormones that regulate calcium metabolism <i>Prof. Carmen Iglesias-Cruz</i>	33201 SEMINAR Interpretation of positive results <i>Prof. Francisco Abad</i>	
11-12 h	33199 Hormones of the suprarenal glands <i>Prof. Carmen Iglesias-Cruz</i>	33199 Thyroid hormones <i>Prof. Carmen Iglesias-Cruz</i>	33199 Endocrine pancreas <i>Prof. Carmen Iglesias-Cruz</i>		
12-13 h	33201 SEMINAR Publication bias and communication. Conflict of interest in the implementation and communication of results of clinical trials <i>Prof. Concha Payares</i>	33200: SEMINAR V: Pharmacology of respiratory and gastrointestinal system <i>Prof. Manuela García</i>	33200 Drugs that regulate bone metabolism <i>Prof. Manuela G. Lopez</i>	33200: Antineoplastic Drugs: cytostatics <i>Prof. Carlos F. Sánchez</i>	33200: SEMINAR -VI Pharmacology of the cardiovascular system <i>Prof. Ana Briones</i>
13-14 h				33200: Biological Therapy in câncer <i>Prof. Concha Peiro</i>	

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NOVEMBER-DECEMBER (week 11)

	MONDAY-23	TUESDAY-24	WEDNESDAY -25	THURSDAY-26	FRIDAY-27
9-10 h					
10-11 h	33199 SEMINAR Endocrine regulation of food intake and energy expenditure <i>Prof. Carmen Iglesias-Cruz</i>	33200 : Gene therapy: general concepts <i>Prof. Silvia Gómez Sebastián</i>	33201 SEMINAR Interpretation of negative results <i>Prof. Francisco Abad</i>	33200 Antidiabetic drugs <i>Prof. M^a Dolores Sánchez Niño</i>	*Exam: Interaction Drug-Receptor
11-12 h		33200 :- Application of herpes virus in gene therapy <i>Prof. Silvia Gómez Sebastián</i>		33200 : SEMINAR VI- Pharmacology of metabolism <i>Prof. M^a Dolores Sánchez</i>	
12-13 h	33200 Pharmacology of sex hormones <i>Prof. M. Cano-Abad</i>	33200 :- Cellular therapy for Chron's Disease <i>Prof. Damian G^a Olmo</i>	33200 :- Extracellular vesicle-based biological therapies <i>Prof. Fernando de la Cuesta</i>		
13-14 h					

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DECEMBER (week 12)

	MONDAY-30	TUESDAY-1	WEDNESDAY -2	THURSDAY-3	FRIDAY-5
		*EXAM Scientific communication and documentation /Data analysis			*Exam: Methodology in ClinicalTrials

DECEMBER (week 13)

	MONDAY-7	TUESDAY-8	WEDNESDAY -9	THURSDAY-10	FRIDAY-11
					*Exam: Physiological basis of therapeutics

DECEMBER (week 14)

	MONDAY-14	TUESDAY-15	WEDNESDAY -16	THURSDAY-17	FRIDAY-18
				*Exam: Pharmacology of Organs and Systems	

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Master in Pharmacological Research

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Professors

Department of Pharmacology

- Almudena Albillos Martínez
- Francisco Abad Santos
- Alberto Borobia Pérez
- Ana Briones Alonso
- María F Cano Abad
- Antonio Carcas Sasuán
- Fernando de la Cuesta Marina
- Jesús Hernández Guijo
- Luis Gandía Juan
- Irene García García
- Manuela García López
- Concepción Payarés
- Concha Peiró Vallejo
- Carlos Sánchez Ferrer
- M^a Dolores Sánchez Niño
- Elena Tortosa Binacua
- Paula Valle

Department of Physiology

- Silvia Arribas Rodríguez
- Javier Blanco Rivero
- Ernesto Cortés López
- Miriam Granado García

- M^a Carmen Iglesias de la Cruz
- Álvaro Llorente Berzal

Invited Professors

- Damián García Olmo (Hospital Fundación Jiménez Díaz)
- Silvia Gómez Sebastián (Departamento de Medicina Preventiva y Salud Pública y Microbiología)
- Carlos Oscar Sánchez Sorzano (Centro Nacional de Biotecnología-CNB)

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Subject coordinators

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33199: Physiological basis of therapeutics
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