COURSE DETAILS

"HUMAN PHYSIOLOGY II"

SSD BIO/09

DEGREE PROGRAMME: MEDICINE AND SURGERY (P11)

ACADEMIC YEAR 2025-2026

GENERAL INFORMATION – TEACHER REFERENCES

TEACHER: MONICA DENTICE

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Faculty	Position	Scientific Fields	Phone	Reception	E-mail
Monica Dentice	Associate Professor	Human Physiology	3636	Wed/11 am – 1 p.m./ Bldg. 19	monica.dentice@unina.it
Annunziata Gaetana Cicatiello	RTDA	Human Physiology	3494	Wed/11 am – 1 p.m./ Bldg. 19	annunziatagaetana.cicatiello2@unina.it

GENERAL INFORMATION ABOUT THE COURSE

TEACHING LANGUAGE: ENGLISH

YEAR OF THE DEGREE PROGRAMME: II

SEMESTER: II

CFU: 7

REQUIRED PRELIMINARY COURSES (IF MENTIONED IN THE COURSE STRUCTURE "REGOLAMENTO")

Human Physiology I.

PREREQUISITES (IF APPLICABLE)

The student must know the general principles of physics, biophysics, biology, chemistry and mathematics in order to be able to apply them to the functional study of the human body. The student must also know the mechanisms of transport through biological barriers, electrophysiology and muscular, cardiovascular, respiratory and renal physiology.

LEARNING GOALS

The course aims to provide students with the knowledge of gastrointestinal, endocrine and the nervous system physiology with special emphasis on the motor control, sensitivity and higher nervous integrated functions. The course will be aimed at transmitting the operational skills necessary to concretely apply the knowledge acquired in clinics.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student should know the physiology of gastrointestinal, endocrine and the nervous systems and should be able to understand the relationships between the various organs and systems in the integrated functions.

Applying knowledge and understanding

•Autonomy of judgment: The student must be able to independently analyze the main mechanisms underlying the functions of the human body with an integrated vision. The necessary tools and methods will be provided to enable students to develop these analytical and synthesis skills.

• Communication skills: The student must be able to present topics related to human nutrition, gastrointestinal, endocrine and nervous systems physiology to non-experts describing physiological functions and mechanisms, in oral and written form. The student will be stimulated to clearly elaborate concepts, using the correct scientific terminology and to transmit the principles of physiology and their applicative potential to non-experts.

• Learning skills: The student must be able to correlate the role of organs and systems in the integrated functions and to describe the main gender differences. Furthermore, the student will gradually acquire the ability to attend specialized seminars, conferences, masters, etc. in the fields of physiology.

COURSE CONTENT/SYLLABUS

1. Functional organization of the nervous system. General physiology of sensitivity. Sensory receptors: transduction and sensory coding.

2. Somato-visceral sensitivity: tactile, thermal and proprioceptive. Pain: peripheral and central mechanisms. The somato-sensitive pathways, organization of the thalamus. The somato-sensory cortex.

3. Special senses physiology: hearing (functions of the outer, middle and inner ear); the eye (retinal physiology, visual cortex and color vision); taste and smell.

4. Functional organization of the motor system. Spinal reflexes. Muscle length and tension control. The coordination and control of motor activity. The vestibular system in the regulation of balance. The motor cortex areas.

5. Sleep physiology and EEG.

6. The endocrine system. Higher integrative functions: the role of the hypothalamus in thermoregulation and in the regulation of food intake.

7. Gastrointestinal physiology. Salivary gland functions. Control mechanisms of gastric secretion and motility. Digestion and absorption of carbohydrates, proteins and lipids. Lipoproteins. Intestinal motility. Composition and function of pancreatic juice. The functions of the liver and bile. Hormones of the gastrointestinal system. Basis of Human Nutrition.

TEACHING ACTIVITIES			
Week	**Day / Hour**	**Lessons/Seminars**	**Teacher**
2°W 09-12 March 2026	**Monday 09/03 15.00-17.30**	Hypothalamus: integrative functions. The control of hunger and satiety.	Monica Dentice
	Tuesday 10/03 15.00-17.30	Hypothalamic integration mechanisms.	Monica Dentice
	Wednesday 11/03 15.00-17.30	The sleep.	Annunziata G. Cicatiello
	Thursday 12/03 15.00-17.30	Sensory receptors: coding and translation.	Annunziata G. Cicatiello
3°W 16-19 March 2026	**Tuesday 17/03 15.00-17.30**	The somato-sensitive pathways.	Monica Dentice
	Thursday 19/03 15.00-17.30	Somatic sensitivity: tactile, proprioceptive	Monica Dentice
4°W 23-26 March 2026	**Tuesday 24/03 15.00-17.30**	The hypothalamic-pituitary-gland axis target.	Annunziata G. Cicatiello
	Thursday 26/03 15.00-17.30	The thyroid and the adrenal gland.	Annunziata G. Cicatiello
5°W 30 march –2 apr. 2026	**Tuesday 31/03 15.00-17.30**	The neurohypophysis: vasopressin and oxytocin. The hypothalamic-pituitary-sex gland axis	Annunziata G. Cicatiello
	Thursday 02/04 15.00-17.30	Pain, peripheral and central mechanisms.	Monica Dentice
6°W 7–09 apr. 2026	**Tuesday 07/04 15.00-17.30**	Thermal sensitive pathway and temperature control.	Annunziata G. Cicatiello
	Thursday 09/04 15.00-17.30	The sense organs: sight	Annunziata G. Cicatiello
7°W 13–16 apr. 2026	**Tuesday 14/04 15.00-17.30**	The sense organs: hearing	Monica Dentice
	Thursday 16/04	Smell and taste.	Monica Dentice

	15.00-17.30		
8°W 20–23 apr. 2026	**Tuesday 21/04 15.00-17.30**	Functional organization of the motor system.	Monica Dentice
	Thursday 23/04 15.00-17.30	The Gastrointestinal System Physiology.	Annunziata G. Cicatiello
9°W 27 apr – 30 Apr. 2026	**Tuesday 28/04 15.00-17.30**	Nutrient digestions and absorption.	Annunziata G. Cicatiello
	Thursday 30/04 15.00-17.30	Enteric Nervous system. Endocrine regulation of the GI system.	Annunziata G. Cicatiello
10°W 04–07 May 2026	**Tuesday 05/05 15.00-17.30**	Liver and pancreatic secretion.	Annunziata G. Cicatiello
	Thursday 07/05 15.00-17.30	Basis of Human Nutrition and Nutritional Status Evaluation	Annunziata G. Cicatiello
11°W 11–14 May 2026	**Tuesday 12/05 15.00-17.30**	Spinal mechanisms of motor control: reflex actions, role of interneurons.	Annunziata G. Cicatiello
	Thursday 14/05 15.00-17.30	Posture and locomotion: postural system and vestibular reflexes	Annunziata G. Cicatiello
12°W 18–21 May 2026	**Tuesday 19/05 15.00-17.30**	The vestibule and the regulation of balance.	Annunziata G. Cicatiello
	Thursday 21/05 15.00-17.30	Organization of voluntary movement: cortical areas, cortico-spinal system.	Annunziata G. Cicatiello
13°W 25 -28 May 2026	**Tuesday 26/05 15.00-17.30**	Motor control systems: cerebellum, basal ganglia. Hypothalamus: integrative functions	Monica Dentice
	Thursday 28/05 15.00-17.30	Interactive learning activities	Monica Dentice
14°W 01 – 04 June 2026	**Monday 01/06 9:00-13:00**	Interactive learning activities	Annunziata G. Cicatiello
	Wednesday 03/06 9:00-13:00	Interactive learning activities	
	Thursday 04/06 9:00-13.30	Interactive learning activities	

READINGS/BIBLIOGRAPHY

Textbooxs

1)Berne & Levy Physiology, 6th Updated Edition by Bruce M. Koeppen, Bruce A. Stanton Elsevier

2)Medical Physiology, 3rd Edition by Walter F. Boron (Autore), Emile L. Boulpaep Elsevier

TEACHING METHODS

Teachers will use: a) lectures with powerpoint slide projections for approx. 70% of total hours (5 CFU); b) interactive learning activities for approx. 30% of total hours (2 CFU).

EXAMINATION/EVALUATION CRITERIA

a) Exam type:

Exam type	
written and oral	
only written	
only oral	X
project discussion	
other	

In case of a written exam, questions refer to: (*)	Multiple choice answers	
	Open answers	
	Numerical exercises	

(*) multiple options are possible