



COURSE DETAILS

"GENERAL PHYSIOPATHOLOGY "

SSD MED/04

DEGREE PROGRAMME: MEDICINE AND SURGERY (P11)

COORDINATOR: PROF. MASSIMO SANTORO

ACADEMIC YEAR 2025-2026

GENERAL INFORMATION – TEACHER REFERENCES

TEACHER: PROF. MASSIMO SANTORO

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Faculty	Position	Scientific Fields:	Phone	Reception (day/time/building)	E-mail
Santoro Massimo	PO	General Pathology	3037	Tue. 14.30 (Bldg.19)	massimo.santoro@unina.it
Carlomagno Francesca	PO	General Pathology	2012	Tue. 14.30 (Bldg.19)	francesca.carlomagno@unina.it
Palazzo Luca	PA	General Pathology	3604	Tue. 14.30 (Bldg.19)	luca.palazzo@unina.it

GENERAL INFORMATION about the course

TEACHING LANGUAGE: ENGLISH

CHANNEL (IF APPLICABLE): 1

YEAR OF THE DEGREE PROGRAMME: III

SEMESTER: II

CFU: 5

REQUIRED PRELIMINARY COURSES

See section below

PREREQUISITES

General knowledge in Biology, Biochemistry, Genetics, Physiology, Microbiology, Immunology, General Pathology

LEARNING GOALS

General Physiopathology aims at studying the main alterations in the function of organs and systems. The course will address how genetic, inflammatory, degenerative, and proliferative alterations are translated into functional and morphological alterations. The student will learn the etiological factors and pathogenetic mechanisms, at the cellular and molecular level, underlying main diseases of the metabolism, and of the various organs and systems

EXPECTED LEARNING OUTCOMES

Knowledge and understanding

The student will learn the etiological factors and pathogenetic mechanisms, at the cellular and molecular level, underlying main diseases of the metabolism, and of the various organs and systems

Applying knowledge and understanding

The student will learn how to apply the pathophysiological mechanisms described during the lessons to the understanding of etiology, pathogenesis and clinical features of major human diseases

COURSE CONTENT/SYLLABUS

Pathophysiology of metabolism - Alterations in the metabolism of amino acids: hyper-phenylalaninemia, albinism - Alterations of the urea cycle - Alterations in purine and pyrimidine metabolism: hyperuricemia, Lesch-Nyhan syndrome - Hereditary alterations of glucose metabolism: galactosemia, fructosuria, lactose intolerance - Type I and Type II diabetes - Diseases of iron accumulation: hemochromatosis and hemosiderosis - Lysosomal storage diseases

Pathophysiology of the blood - Blood cells and hematopoiesis: Iron (absorption and transport), Folic acid and Vitamin B12 - Blood loss anemia - Hemolytic anemias: spherocytosis, G6PD deficiency, thalassemia, sickle cell anemia, paroxysmal nocturnal hemoglobinuria - Aplastic, megaloblastic, sideropenic anemia - Alterations of heme biosynthesis: Porphyria: intermittent acute porphyria, porphyria cutanea tarda - Pathophysiology of haemostasis: thrombosis, thrombocytopenia and platelet diseases, hemophilia, vWB factor deficiency, disseminated intravascular coagulation - Myeloproliferative syndromes: acute and chronic myelogenous leukemia; polycythemia vera - Lymphoid neoplasms: acute and chronic lymphatic leukemia; Hodgkin's and non-Hodgkin's lymphoma; Multiple myeloma

Pathophysiology of the endocrine system - Pathophysiology of the pituitary gland: Alterations of the GH axis; diabetes insipidus; inappropriate secretion of ADH (SIADH) - Physiopathology of the thyroid: primary hyperthyroidism (Basedow-Graves disease, toxic adenoma, toxic multinodular goiter); secondary hyperthyroidism (TSH-secreting adenoma; HCG-producing tumors); congenital and acquired hypothyroidism; thyroid neoplasms - Pathophysiology of parathyroids: primary hyperparathyroidism (hyperplasia, adenoma and parathyroid cancer); secondary hyperparathyroidism (chronic renal failure, vitamin D deficiency, paraneoplastic syndromes); congenital (di George syndrome) and autoimmune hypoparathyroidism; pseudohypoparathyroidism type 1; distribution and absorption of calcium and phosphorus - Multiple Endocrine Neoplasms - Physiopathology of the adrenal gland: Cushing's syndrome; Conn's disease; congenital adrenal hyperplasia (21-hydroxylase deficiency); Addison's disease; X-linked adrenoleukodystrophy (X-ALD); pheochromocytoma

Pathophysiology of the gonads and of the reproductive system - Carcinoma of the ovary and uterus - Carcinoma of the breast - Carcinoma of the prostate

Physiopathology of the kidney - Polycystic kidney and other genetic diseases of the kidney - Renal carcinoma

Physiopathology of the respiratory system - Obstructive respiratory diseases: alpha1-antitrypsin deficiency - Cystic fibrosis - Lung carcinoma

Physiopathology of the gastrointestinal system - Hepatocarcinoma and cirrhosis - Gastric carcinoma - Carcinoma of the colon - Carcinoma of the pancreas

TEACHING ACTIVITIES

Week	Day/Time	Lecture	Professor
1 March 9-13, 2026	Mon 9/3-15.00-16.00	Myeloproliferative and lymphoid neoplasia	M.Santoro
	Mon 9/3-16.00-17.00	Myeloproliferative and lymphoid neoplasia	M.Santoro
	Wed 11/3-13.00-14.00	Myeloproliferative and lymphoid neoplasia	M.Santoro
	Wed 11/3-14.00-15.00	Myeloproliferative and lymphoid neoplasia	M.Santoro
	Fri 13/3-13.00-14.00	Myeloproliferative and lymphoid neoplasia	M.Santoro
	Fri 13/3-14.00-15.00	Myeloproliferative and lymphoid neoplasia	M.Santoro
2 March 16-20, 2026	Mon 16/3-15.00-16.00	Blood cells and hematopoiesis	G.Federico
	Mon 16/3-16.00-17.00	Blood cells and hematopoiesis	G.Federico
	Wed 18/3-13.00-14.00	Anemia	G.Federico
	Wed 18/3-14.00-15.00	Anemia	G.Federico
	Fri 20/3-13.00-14.00	Anemia	G.Federico
	Fri 20/3-14.00-15.00	Anemia	G.Federico
3 March 23-27, 2026	Mon 23/3-15.00-16.00	Iron metab	G.Federico
	Mon. 23/3-16.00-17.00	Iron metab	G.Federico
	Wed 25/3-13.00-14.00	Hemostasis	F.Carlomagno
	Wed 25/3-14.00-15.00	Hemostasis	F.Carlomagno
	Fri 27/3-13.00-14.00	Heme	F.Carlomagno
	Fri 27/3-14.00-15.00	Nucleotide metab.	F.Carlomagno
4 March/April 30-3, 2026	Mon 30/3-15.00-16.00	Amino-acid metab.	F.Carlomagno
	Mon. 30/3-16.00-17.00	Amino-acid metab.	F.Carlomagno
	Wed 1/4-13.00-14.00	Diabetes	F.Carlomagno
	Wed 1/4-14.00-15.00	Diabetes	F.Carlomagno
5 April 6-10, 2026	Wed 8/4-13.00-14.00	Carbohydrate metab.	F.Carlomagno
	Wed 8/4-14.00-15.00	Carbohydrate metab.	F.Carlomagno
	Fri 10/4-13.00-14.00	Renal diseases	F.Carlomagno
	Fri 10/4-14.00-15.00	Renal diseases	F.Carlomagno
6 April 13-17, 2026	Mon 13/4-15.00-16.00	Thyroid gland	M.Santoro
	Mon. 13/4-16.00-17.00	Thyroid gland	M.Santoro
	Wed 15/4-13.00-14.00	Parathyroid gland	M.Santoro
	Wed 15/4-14.00-15.00	Parathyroid gland	M.Santoro
	Fri 17/4-13.00-14.00	Pheochromocytoma	M.Santoro
	Fri 17/4-14.00-15.00	Adrenal gland	M.Santoro
7 April 20-24, 2026	Mon 20/4-15.00-16.00	Pituitary gland	M.Santoro
	Mon. 20/4-16.00-17.00	Pituitary gland	M.Santoro
	Wed 22/4-13.00-14.00	Cystic fibrosis	M.Santoro
	Wed 22/4-14.00-15.00	Cystic fibrosis	M.Santoro
	Fri 24/4-13.00-14.00	Lung cancer	M.Santoro
	Fri 24/4-14.00-15.00	Lung cancer	M.Santoro
8 April/May 27-1, 2026	Mon 27/4-15.00-16.00	Lysosomal storage disorders	M.Santoro
	Mon. 27/4-16.00-17.00	Lysosomal storage disorders	M.Santoro
	Wed 29/4-13.00-14.00	Liver cancer	F.Carlomagno
	Wed 29/4-14.00-15.00	Liver cancer	F.Carlomagno

9 May 4-8, 2026	Mon 4/5-15.00-16.00	Gastric cancer	F.Carlomagno
	Mon 4/5-16.00-17.00	Gastric cancer	F.Carlomagno
	Wed 6/5-13.00-14.00	Renal carcinoma	F.Carlomagno
	Wed 6/5-14.00-15.00	Renal carcinoma	F.Carlomagno
	Fri 8/5-13.00-14.00	Pancreatic carcinoma	L. Palazzo
	Fri 8/5-14.00-15.00	Pancreatic carcinoma	L. Palazzo
10 May 11-15, 2026	Mon 11/5-15.00-16.00	Colon cancer	L. Palazzo
	Mon 11/5-16.00-17.00	Colon cancer	L. Palazzo
	Wed 13/5-13.00-14.00	Breast cancer	L. Palazzo
	Wed 13/5-14.00-15.00	Breast cancer	L. Palazzo
	Fri 15/5-13.00-14.00	Prostate cancer	L. Palazzo
	Fri 15/5-14.00-15.00	Prostate cancer	L. Palazzo
11 May 18-22, 2026	Mon 18/5-15.00-16.00	Thyroid cancer	L. Palazzo
	Mon 18/5-16.00-17.00	Thyroid cancer	L. Palazzo
	Wed 20/5-13.00-14.00	Final summary	All teachers
	Wed 20/5-14.00-15.00	Final summary	All teachers
	Fri 22/5-13.00-14.00	Final summary	All teachers
	Fri 22/5-14.00-15.00	Final summary	All teachers

READINGS/BIBLIOGRAPHY

KUMAR, ABBAS, ASTER: Robbins & Cotran Pathologic Basis of Disease, 10th ed. 2020, Elsevier

JAMESON, FAUCI, KASPER, HAUSER, LONGO, LOSCALZO: Harrison's Principles of Internal Medicine 20th ed. (Vol.1 & Vol.2) 2018, McGraw Hill

TEACHING METHODS

100% of the course will be based on classroom lectures

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

b) Evaluation pattern:

The oral exam will consist in questions tackling the various topics of the syllabus. The assessment will be based on breadth of knowledge of the topics, ability to summarize and clarify the information, and ability to make logical connections with other relevant topics.