

Subject card

Subject name and code	Endocrinology, PG_00207254						
Field of study	Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Ziemowit Ciepielewski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		2.0		43.0	75
Subject objectives	Learning about hormones and how they work at the cellular and organ levels. Understanding the integrative role of the endocrine system in homeostatic/allostatic processes, and learning about interactions with the nervous and immune systems. Learning about the role of the endocrine system in systemic regulation of the body. Understanding the changes that occur in the endocrine system at different stages of life (foetal period, childhood, adolescence, adulthood/biological maturity, menopause (menopause and andropause), old age). Learning about the most common disorders of the endocrine system and ways of preventing and treating these disorders.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLMU2_W04] has in-depth knowledge of the chosen specialization in the biological sciences	graduates have extensive knowledge of endocrinology and related sciences	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[BIOLMU2_W01] has a deep knowledge and understanding of natural phenomena and processes at various levels of complexity	The graduate knows and understands the mechanisms underlying the functioning of the endocrine system.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[BIOLMU2_U07] is able to critically compare biological information from various sources and draw justified conclusions on this basis	the graduate formulates conclusions based on available sources	[SU4] test/exam - oral or written
	[BIOLMU2_U03] is able to critically analyze and select biological information, especially from electronic sources	graduates are able to verify biological data obtained from electronic sources	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[BIOLMU2_K07] is ready to systematically update biological knowledge and information on its practical applications	the graduate applies the acquired knowledge in practice	[SK4] test/exam - oral or written
	[BIOLMU2_K01] shows initiative and is ready to act independently and feels the need for lifelong learning	graduates work independently and continue to deepen their knowledge throughout their lives	[SK4] test/exam - oral or written
Subject contents	The internal environment of the body and its role in regulating the reactivity of cells and organs. The concept of homeostasis. Circadian rhythms and their regulation. Neurohormonal coupling as the basic system of systemic integration. Receptor mechanisms of hormone action. The hypothalamic-pituitary system. Vasopressin and oxytocin. Hormones and neurohormones; control of the endocrine system. Hypothalamic neurohormones (liberins and statins) controlling the function of the anterior pituitary gland. Hormones of the anterior pituitary gland. Function of the adrenal medulla, physiological action of catecholamines. Function of the adrenal cortex and action of its steroid hormones. Role of adrenal medulla and cortex hormones in adaptive responses (stress axes). Endocrine function of the thyroid, parathyroid and pineal glands. Pineal gland - melatonin - biological clock. Hormones related to the metabolism of carbohydrates, proteins and fats. Hormones of systemic activation and intracellular accumulation. Growth hormone and regulation of its secretion. IGF-1 - action and role in the somatotrophic axis. Secretory function of adipose tissue. Hormones of the gastrointestinal tract. The brain-gut axis. Hormones related to mineral metabolism. Hormones related to social behaviour. Prolactin an example of a pleiotropic hormone. Gonadal axes and their hormones, regulation of the menstrual cycle. Pregnancy, labour and lactation hormones. Hormonal changes associated with age (childhood, puberty, adulthood, menopause and ageing).		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	100.0%
Recommended reading	Basic literature	A. Literature required for final course completion (passing the exam): 1. Human Physiology. Konturek, 3rd edition, ed. T. Brzozowski, 2019, Urban&Partners 2. Murray R. K. et al., 2015. Harper's Biochemistry. PZWL Medical Publishing House, Warsaw 3. Solomon E. P., Berg L. R., Martin D. W., Villee C. A., 2012 (reprint). Biology. Oficyna Wydawnicza Multico, Warsaw	
	Supplementary literature	B. Supplementary literature 1. Melmed S., Polonsky K. S., Larsen P. R., Kronenberg H. M., 2016. Williams Textbook of Endocrinology. Elsevier - Health Sciences Division 2. Nussey S. S., Whitehead S. A., 2013. Endocrinology. CRC Press 3. Pfaff D.W., Rubin R.T., Schneider J.S., Head G.A., 2018. Principles of Hormone/Behaviour Relations. Academic Press 4. Murphy D., Gainer H., 2016. Molecular Endocrinology, From Genome to Physiology. Wiley Blackwell Learning outcomes Knowledge	
	eResources addresses		
Example issues/ example questions/ tasks being completed	The action of water-soluble and fat-soluble hormones		
	Growth hormone: structure and functions, somatotrophic axis		
	Hypothalamic-pituitary-adrenal axis		
	Insulin resistance		
Work placement	Not applicable		

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