

Course Unit Descriptor

<b>Study Programme:</b> Bachelor Academic Studies in Biochemistry
<b>Course Unit Title:</b> Biochemistry of hormones
<b>Course Unit Code:</b> IB-402
<b>Name of Lecturer(s):</b> Professor Suzana Jovanović-Šanta
<b>Type and Level of Studies:</b> Bachelor of Science Degree
<b>Course Status (compulsory/elective):</b> elective
<b>Semester (winter/summer):</b> winter
<b>Language of instruction:</b> English
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face
<b>Number of ECTS Allocated:</b> 6
<b>Prerequisites:</b> -
<p><b>Course Aims:</b></p> <p>Provide students with broad and balanced knowledge of the key concepts of endocrine system functioning. Develop practical skills necessary for understanding and independent solving problems in the field of biochemistry of hormones using a standard methodology.</p>
<p><b>Learning Outcomes:</b></p> <p>After successful completion of this course the student is able to 1) explain the concepts related to intercellular communication and the maintenance of homeostasis, 2) define the metabolic role of individual tissues and hormones in physiological and / or pathological processes in the body, 3) describe the structure of certain hormones and processes by which they synthesize and secrete, 4) explain the mechanism of action of certain hormones, 5) analyze the connection between catabolic and anabolic processes, 6) explain the regulation of metabolic pathways, 7) applies the standard experimental methods used in the study of metabolism.</p>
<p><b>Syllabus:</b></p> <p><i>Theory</i></p> <p>Organization of neuro-endocrine system, intercellular communication, regulation of synthesis and secretion of hormones. Division of hormones by the origin, chemical structure, location and mechanism of action. Hormone receptors: receptors in the cell membrane and in the cell. Target tissues. Secondary and tertiary messengers. Hormones of hypothalamus, pituitary, pineal, thyroid, adrenal and parathyroid glands, hormones that regulate the metabolism of calcium and phosphate, sex hormones, pancreas, kidney, gastro-intestinal tract hormones (structure, types, mechanism of action, target tissues, the physiological effects).</p> <p><i>Practice</i></p> <p>Structure determination of selected hormones; Determination of steroid hormone content by ELISA or RIA tests; Determination of thyroid or pituitary hormone content; Testing the effectiveness of reproductive tissues.</p>
<p><b>Required Reading:</b></p> <ol style="list-style-type: none"> <li>1. Goodman H M: Basic Medical Endocrinology, Oxford University Press, 2003.</li> <li>2. Krauss G: Biochemistry of Signal Transduction and Regulation, WILEY-VCH, 2005.</li> <li>3. Rushton L: Endocrine System, Chelsea House Publishers, 2004.</li> <li>4. Jameson J L, Braunwald E, Fauci A S, Hauser S L, Longo D L: Endocrinology and Metabolism, McGraw-Hill Companies, 2006.</li> </ol>

5. <http://themedicalbiochemistrypage.org>

6. Review and original scientific articles from selected research areas

**Weekly Contact Hours: 5**

**Lectures: 3**

**Practical work: 2**

**Teaching Methods:**

Lectures, laboratory work, seminar

**Knowledge Assessment (maximum of 100 points): 100**

<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	10	written exam	40
Practical work	30	oral exam	20
Preliminary exam(s)		.....	
Seminar(s)			

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.