



**UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN**  
**SCHOOL OF MEDICINE**  
**Ba CLINICAL CHEMISTRY**



**SYNTHETIC PROGRAM.**

<b>1. Identification data:</b>	
• Institution	Universidad Autónoma de Nuevo León
• College	Faculty of Medicine
• Education program	Clinical Chemistry
• Learning unit	Medical physiology
• Total hours of classroom, theory and practice	100 hours
• Frequency in classroom per week	5 hours
• Total extra hours Outside classroom)	20 hours
• Modality	Schooled
• Academic period	Third semester
• Type of learning unit	Compulsory
• Curricular area	ACFB
• UANL Credits	4 credits
• Date of elaboration	09/28/2017
• Date of actualization	06/30/2023
• Responsible (s) for the design and	Dr. C. Marlene Marisol Perales Quintana

actualization	
<b>2.Purpose(s):</b>	
<p>The purpose of this learning unit (UA) is to provide the scientific bases in the field of human health through the study of the mechanisms and dynamic processes that allow maintaining the proper functioning of the human body, with the purpose of understanding the bases of clinical laboratory tests.</p> <p>Regarding general skills, during this learning unit the student will be able to logically and critically analyze homeostatic processes, with perspectives to support the selection of the various analytes for the evaluation of various pathologies. Furthermore, through the knowledge acquired regarding physiological mechanisms, you will be able to critically analyze the basic theories that attempt to explain health-disease processes, which affect the generation of initiatives for health care according to reality. regional and global that allow sustainable development. During the UA the student also develops specific skills, because it will justify the use of identification and/or quantification of different biological molecules based on the physiological and homeostatic principles that regulate the processes of health-illness. Likewise, you will develop critical thinking for the verification and correlation of analysis results in clinical diagnosis based on the physiological context evaluated.</p> <p>Within the learning units of previous semesters, there is a relationship with Cellular Biology because the understanding of the smallest level of organization allows us to illustrate the concept of functional compartments in the human body; with Morphological Sciences by correlating the structures of organs for the integration of functional systems and Physics by providing the theoretical bases for the understanding of the different homeostatic processes. Furthermore, this learning unit provides fundamental bases for the understanding of Biochemistry because the knowledge acquired of the various physiological processes allows us to describe the metabolic routes of different basic molecular pathways. In Pathology you will apply the bases of the normal functioning mechanisms of the organism to infer adaptive responses to abnormal stimuli. Furthermore, in clinical pathology, the understanding of homeostatic processes allows the selection of appropriate laboratory tests for diagnosis.</p>	

### 3. Competence of the graduate profile

- **General skills contributing to this learning unit**

**Instrumental skills:**

5. To use logical, critical, creative and proactive thinking to analyze natural and social phenomena that allow them to make relevant decisions in their sphere of influence with social responsibility.

**Personal and social interaction skills:**

10. To intervene in the face of the challenges of contemporary society at the local and global level with a critical attitude and human, academic and professional commitment to contribute to consolidating general well-being and sustainable development.

**Integrative skills:**

12. To make innovative proposals based on a holistic understanding of reality to help overcome the challenges of the interdependent global environment.

- **Specific skills of the graduate profile that contributes to the learning unit**

- To solve problems by applying knowledge of the chemical composition of matter as well as its physicochemical properties to determine analytes in biological, environmental and food matrices.
- To interpret the results of analyses based on established criteria that allow timely and pertinent decision-making in clinical, toxicological, chemical, food, forensic, and environmental diagnosis.

#### **4. Factors to consider for evaluating the learning unit**

- Oral and written presentation of topics assigned by the professor
- In-class worksheets
- Written cases
- Laboratory reports.
- Partial exams.
- Course integrative project/product

#### **5. Course integrative project/product**

Writing on the resolution of cases on the physical, chemical and biological foundations of the functioning of the devices and systems of the human body, as well as their interrelationships.

#### **6. Sources of support and consultation (bibliography, hemerography, electronic sources):**

Silverthorn, D.U., & Johnson, B.R. (2019). Human physiology: an integrated approach: Editorial Médica Panamericana. Fox, S. I. (2014). Fisiología humana (13a. ed.): McGraw Hill Mexico.

Garza, N. E. F. (2008). Physiology laboratory manual: McGraw-Hill. Raff, H., & Levitzky, M. G. (2012). Medical Physiology - 1ed: McGraw Hill Brasil. The American

Physiological Society. (2017). Physiological Reviews. Recovered the 05 of March of 2017, of <http://physrev.physiology.org/> Cell biology videoconferences. Retrieved on September 5, 2017, from: [www.dnatube.com](http://www.dnatube.com)

PHASE 1.

• Crash Course (January 6, 2015) Introduction to Anatomy & Physiology: Crash Course A&P #1. [Video File]. Youtube. <https://www.youtube.com/watch?v=uBGI2BujkPQ&list=PL2vrmieg9tO1TE2BEft0UWG6IkMYCWXY>.

PHASE 2.

• Crash Course (2 de Marzo 2015) The Nervous System, Part 2 - Action! Potential!: Crash Course A&P #9. [Archivo de Vídeo].