



**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	School of Medicine
• Education program	Clinical Chemistry
• Learning unit	Physics
• Total hours of classroom, theory and practice	100
• Frequency in classroom per week	5 hours
• Total extra hours (Outside classroom)	20
• Modality	Face-to-face instruction
• Academic period	Second semester
• Type of learning unit	Core
• Curricular area	ACFB
• UANL Credits	4
• Date of elaboration	30/01/2017
• Date of actualization	16/01/2023
• Responsible (s) for the design and actualization	Design: Dr. C. Judith Rocha Gámez, Q.C.B. Olga Catalina Rodríguez Martínez. Amendment: Dr. en C. Omar Jassiel Portillo Castillo.

## 2.Purpose(s):

This learning unit (LU) aims to help students develop the skills necessary to use the fundamentals and physical techniques that will be applied during their academic and professional performance.

Regarding general skills, in this learning unit, the student uses information technologies to support the resolution of tasks and the completion and presentation of work and uses the software's advanced features to prepare electronic documents that comply with international standards for formatting, style, and citing bibliographical references. During the practices carried out in the laboratory, he takes care to protect the environment and the well-being of himself and his colleagues, thus practicing values of solidarity, and respect for life and nature, promoted by the UANL. During group work, students express their ideas clearly and calmly to convey their position during a conflict, respect those of their classmates and teachers, reach agreements that allow for appropriate decision-making, and act with integrity in the development of their academic activities. As for the specific competencies of the degree, most of the physical techniques studied at this LU will help the student solve problems related to the physicochemical properties of matter.

This LU is in the second semester of the degree, for its development it uses knowledge acquired in Higher Mathematics, such as the management of fundamental mathematical operations, scientific notation, logarithms, and algebraic equations, as well as the resolution of Physics exercises; from the LU General Chemistry it takes the concepts of electromagnetic radiation to relate them to its optical properties and applications, and in turn these topics reviewed in this LU of Physics contribute to the LU of Instrumental Analysis in the topics of electromagnetic radiation and spectrophotometry. Basic terms described in Physics, such as speed, energy, fluid properties, radiation, etc., are used in the Physical Chemistry LU to describe the thermodynamic, spectroscopic, and kinetic properties of matter. It also provides the theoretical basis for understanding the different homeostatic processes seen in the Physiology LU.

## 3. Competence of the graduate profile

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

### **Instrumental skills:**

3. To manage Digital Information, Communication, Knowledge and Learning Technologies (TICCAD), in academic, personal and professional environments with cutting-edge techniques that allow their constructive and collaborative participation in society.

### **Personal and social interaction skills:**

11. To practice the values promoted by the UANL: truth, equity, honesty, freedom, solidarity, respect for life and others, peace, respect for nature, integrity, ethical behavior and justice, in their personal and professional environment to contribute to building a sustainable society.

### **Integrative skills:**

14. To resolve personal and social conflicts, in accordance with specific techniques in the academic field and in their profession for appropriate decision-making.

- **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.

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

- Course integrative project/product

#### **5. Integrative learning Product:**

Problem-solving report on the application of Physics in explaining different laboratory and environmental phenomena.

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

Giancoli-Douglas, C. (1999). Física principios con aplicaciones, 2a edición. México: editorial Prentice Hall Hispanoamericana, S.A.

Blatt, F. J. (1991) Fundamentos de Física. México: editorial Prentice Hall Hispanoamericana.

Skoog, D. A. (2009) Análisis Instrumental. México: editorial Cengage Learning.

Strother G.K. (1988) Física aplicada a las Ciencias de la Salud. Colombia: editorial McGraw Hill.

Gómez González, Raúl 1984. La segunda ley de Newton. Ciencias 6, octubre-diciembre, 14-15.

Jou D., Llebot J. y Pérez C. (1994) Física para Ciencias de la Vida. México: editorial McGraw Hill.