NEW LEON AUTONOMOUS UNIVERSITY
MEDICAL SCHOOL
Ba CLINICAL CHEMISTRY

SYNTHETIC PROGRAM

1. Module identification code.	
Name of the institution:	Universidad Autónoma de Nuevo León
Name of the school:	School of Medicine
Name of the degree program:	Clinical Chemistry
Name of the course (learning unit):	Chromatographic techniques
Total number of class hours-theory and practice:	72
Class hours per week:	4 horas
Independent study:	18
Course modality:	Face-to-face instruction
Module level:	Eighth semester
Core/elective module:	Elective
Curriculum area:	ACFP-F
UANL credit points:	3

Create date:	November 30th, 2020
Date of last amendment made:	
Person(s) responsible for the design:	Dra. Marsela Garza Tapia

2. Purpose

The Chromatographic Techniques Learning Unit aims to integrate the basic knowledge developed in the Chemistry-related Learning Units to establish the necessary criteria for the selection and application of techniques that allow for sample preparation and analysis using different separation principles, primarily focusing on both preparative and analytical chromatographic techniques.

This LU is offered as an elective in the eighth semester of the Bachelor's in Clinical Chemistry program and is built upon the competencies acquired in other LUs such as General Chemistry, Physical Chemistry, Fundamentals of Analytical Chemistry, Applied Analytical Chemistry, Instrumental Analysis, Mathematics, and Biostatistics. It contributes to the graduate profile of the program by providing students with the foundational knowledge required to select, optimize, apply, and evaluate preparative and analytical chromatographic techniques, which are commonly used in the fields of chemical and biomedical analysis where professionals of this degree operate.

3. Competences of the graduate profile

General competences to which this module (learning unit) contributes:

Instrumental skills:

2. To use logical, formal, mathematical, iconic, verbal and non-verbal languages according to their stage of life, to understand, interpret and express ideas, feelings, theories and currents of thought with an ecumenical approach.

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:

15. To achieve the adaptability required by the uncertain social and professional environments of our time to create better living conditions.

Specific competences of the graduate profile to which this module (learning unit) contributes:

1. 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.

5. To incorporate new analytical methodology that contributes to the functional, economic and/or environmental improvement of laboratory processes to respond to needs in health areas.

6. 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:

- Daily evidences
- Parcial exams

5. Course integrative project/product:

Propose the optimization of a separation technique for sample preparation and a chromatographic technique for sample analysis.

9. References:

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Cela Rafael (2002). Técnicas de Separación en Química Analítica. Editorial Síntesis.
Christian D. Gary (2009). *Química Analitica*, Editorial Mc. Graw Hill.
Harvey, D. (2000). Modern Analytical Chemistry. EUA: editorial McGraw-Hill
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Meyer Veronika R. (2010). *Practical High - Performance Liquid Chromatography*. John Wiley & Sons Inc.
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