

SYNTHETIC PROGRAM

1. Module identification code.	
Name of 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):	Comprehensive chemical analysis laboratory
Total number of class hours-theory and practice:	80
Class hours per week:	4 hours
Independent study:	10
Course modality:	Face-to-face instruction
Module level:	seventh, eighth and ninth semesters
Core/elective module:	Elective
Curriculum area:	ACFP-F
UANL credit points:	3
Create date:	05/09/2018

Date of last amendment made:	04/08/2022
Person(s) responsible for the design and amendment of the module:	Dr. C. Luis Alejandro Pérez López Dr. C. Verónica Mayela Rivas Galindo

2. Purpose:

The purpose of the Integral Laboratory of Organic Analysis learning unit is to develop in the student the ability to perform the analysis of organic molecules through the use of traditional techniques and spectroscopic methods, as well as to introduce him/her to scientific research, which makes him/her competent to skillfully apply methodologies that support the generation of knowledge and the resolution of problems in his/her professional field.

In this learning unit, general competences are developed, especially in the use of traditional and state-of-the-art research methods and techniques for the analysis of organic molecules, which will be fundamental in the practice of

3. Competences of the graduate profile

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

- *Instrumental skills:*

8. To use traditional and cutting-edge research methods and techniques for the development of their academic work, the exercise of their profession and the generation of knowledge.

- *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:*

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:

2. To execute physical, chemical and/or biological procedures in the collection, handling, storage and analysis of samples to contribute to a reliable clinical, toxicological, chemical, food, forensic and environmental diagnosis.
3. To handle chemical and biological materials following official Mexican and/or international standards that guarantee their correct use and disposal to preserve health and the environment..

4. Factors to consider for evaluating the learning unit

- Oral and written presentation of topics assigned by the profesor
- Reports of the problema compound assigned by the profesor
- Course integrative project/product

5. Course integrative project/product:

Oral presentation on the identification of a problem organic compound analyzed by functional organic analysis and spectroscopic analysis data provided.

6. Sources of support and References:

- Comprehensive chemical analysis laboratory Manual. Departamento. de Química Analítica, Fac. de Medicina UANL. Edición 2020
- Identificación sistemática de compuestos orgánicos. Ralph L. Shriner. Editorial Limusa SA de CV. 2013.
- Química Orgánica, L. G. Wade, Jr. Prentice Hall Hispanoamericana. 2012.
- Index Merck Manual. 2006.
- Digital resources
- Audiovisual material.
- Chem Draw software or other freely available online chemistry software.
- Amritacreate. (09/02/2017). Tests for the Functional Group Present in the Organic Compounds - MeitY OLABs. Youtube. Accessed July 21, 2020 from. https://www.youtube.com/watch?v=n4esSHxz_J8
- VeelaOFAvalon. (30/11/2010). Practice #4 - Identificación de grupos funcionales. Youtube. Accessed July 21, 2020 from <https://www.youtube.com/watch?v=3Ni-9T5D4Ho>
- amrita.olabs.edu.in,. (2013). Tests for the functional groups. Accessed July 21, 2020 from amrita.olabs.edu.in/?sub=73&brch=8&sim=141&cnt=1
- José María Adolfo Barba Chavez, Javier Isodoro López Cruz, Francisco Cruz Sosa. 2013. Manual de Prácticas de Laboratorio, Análisis Funcional Orgánico. Accessed July 23, 2020 from. <file:///C:/Users/Dell/Desktop/Programa%20ana%20litico%20distancia/reursos/analisis.pdf>
- Antonieta Alarcón Vargas. (04/06/2012). Análisis elemental cualitativo: Fusión con Sodio. Youtube. Accessed July 21, 2020 from <https://www.youtube.com/watch?v=LVNEp17h3mw>
- James Guevara Pulido. (06/05/2020). Análisis Orgánico Tradicional (Muestra Problema). Youtube. Accessed July 21, 2020 from https://www.youtube.com/watch?v=j5Xlw4PA_t0
- Artemio Chang C., Silvia Clinar B. Ica-2019. Introducción al análisis de compuestos orgánicos, Análisis cualitativo (elucidación de estructuras). Accessed July 24, 2020 from. <http://www.bibliotecafarmaceutica.com/Enlaces/Aco/Octavo/Documentos/Libro%20Aco-2019.pdf>
- Bases de datos espectroscópicos . Accessed July 21, 2020 from. https://personal.us.es/rcarvaj/bases_de_datos.htm

