

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):	Diagnostic medical hepatology
Total number of class hours-theory and practice:	90
Class hours per week:	3 hours
Independent study:	30
Course modality:	Face-to-face instruction
Module level:	Sixth, seventh, eighth or ninth semester
Core/elective module:	Elective
Curriculum area:	ACFP-F
UANL credit points:	3
Create date:	August 06th 2018
Date of last amendment made:	January 15th 2024
Person(s) responsible for the design	Dr. Sc. Paula Cordero Pérez, Dr. Sc. Diana Patricia Moreno Peña, Dra. Sc. Liliana Torres González. Dr. Sc. Diana Raquel Rodríguez Rodríguez

2. Purpose:

The purpose of this LU is to develop the necessary skills to interpret laboratory tests for various liver diseases through biochemical, serological, and molecular analyses of biological samples.

Regarding general skills, during this LU, students will learn to solve problems by implementing both traditional and cutting-edge methods for interpreting alterations in laboratory tests considered diagnostic of liver disease. They will practice professional ethics by responsibly and honestly handling the confidentiality of the obtained results. Additionally, students will learn to resolve personal conflicts related to specific techniques by staying updated on developments in the field of Hepatology, which will help them make informed decisions regarding the methodologies used.

Throughout the LU, students will also develop specific skills both in the classroom and in the laboratory. They will interpret laboratory results relevant to the diagnosis of liver diseases, applying knowledge of alterations in liver function tests, as well as viral, metabolic, fibrosis, and molecular markers. Furthermore, they will adhere to the safety regulations of the Liver Unit

and comply with Mexican Official Standards, ensuring quality control in the tests conducted and guaranteeing the reliability of the results for accurate decision-making.

This LU connects with previous semesters' learning units, including Mycology and Virology, through the evaluation of laboratory tests that facilitate the identification of viruses in clinical samples; Applied Analytical Chemistry, by integrating the selection and validation of methodologies for the determination of analytes based on their properties; Instrumental Analysis, by applying the fundamentals of instrumental methods used in the analysis of biological samples; Biochemistry and Molecular Biology, by employing molecular techniques for the analysis of RNA and DNA; and Clinical Pathology, by reviewing pathophysiological concepts in laboratory tests and their application to the diagnosis of liver diseases. This LU provides essential foundations for the development of social service and professional practice in the clinical area.

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:*

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

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.

7. To guarantee the reliability of the analytical results obtained by applying quality control guidelines as established by laboratory policies for correct decision-making

4. Summative evaluation:

- Oral presentations
- Daily evidences
- Partial exams
- PIA

5. Course integrative project/product:

Proposed solution to the problems of liver function tests, viral, tumor, fibrosis and molecular markers in the area of hepatology.

6.References:

Calleja, J., Crespo, J., y Asociación Española para el Estudio del Hígado. (2015). Libro Blanco de la Hepatología en España. Disponible en: <http://ww2.aeeh.es/wp-content/uploads/2015/02/8f1dfd8ff94bb6ed4bd1b41c5f363301.pdf>

Compean, D. G., y Maldonado, H. J. (2009) GASTROENTEROLOGIA Y HEPATOLOGIA. Objetivos y su desarrollo. Disponible en: https://www.researchgate.net/publication/291345911_Gastroenterologia_y_hepatologia_Objetivos_y_su_desarrollo

Delgadillo, A. T., & Ávila, J. F. S. Temas selectos en hepatología: La visión de los expertos. Disponible en: https://www.researchgate.net/profile/Diego_CarrilloPerez/publication/331718827_Como_evaluo_la_insuficiencia_renal_aguda_en_el_cirrotico/links/5c898c08299bf14e7e7ad4c3/Como-evaluo-la-insuficiencia-renal-aguda-en-el-cirrotico.pdf

Argüelles, F., García, M. D., Pavón, P., Román, E., Silva, G., & Sojo, A. (2010). Tratado de Gastroenterología, Hepatología y Nutrición Pediátrica aplicada de la SEGHNP. Madrid: Ergón. Disponible en: <https://www.seghnp.org/sites/default/files/2017-06/Trat%20SEGHNP.pdf>

Scientific articles:

Nallagangula KS, Nagaraj SK, Venkataswamy L, Chandrappa M. Liver fibrosis: a compilation on the biomarkers status and their significance during disease progression. Future Sci OA. 2017; 4(1):FSO250. doi: 10.4155/fsoa-2017-0083.

Pietrangelo A. Hemochromatosis: an endocrine liver disease. Hepatology 2007; 46(4): 1291-301. doi:10.1002/hep.21886. PMID:17886335.

Halfon P, Munteanu M, Poynard T. FibroTest-ActiTest as a non-invasive marker of liver fibrosis. Gastroenterol Clin Biol 2008; 32(6 Suppl 1):22-39. doi: 10.1016/S0399-8320(08)73991-5. PMID:18973844

Bishop ML, Fody EP, Schoeff LE. (2018) *Clinical Chemistry. Principles, Techniques and Correlations*. EUA: editorial Wolters Kluwer

Guyton A C y Hall JE (2011). *Tratado de fisiología médica*. España: editorial Elsevier

Méndez -Sánchez N, Uribe M (2006). *Hepatología. Conceptos básicos y clínicos*. México: editorial MC Graw Hill,

Muñoz-Espinosa LE (2007). *Hepatología. Desde la Biología Molecular al diagnóstico, tratamiento y prevención*. México: MC Graw Hill Interamericana