UNIVERSIDAD AUTONOMA DE NUEVO LEON
SCHOOL OF MEDICINE
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):	Selected topics in clinical laboratory
Total number of class hours-theory and practice:	280 hours
Class hours per week:	14 hours
Independent study:	20 hours
Course modality:	Face-to-face instruction
Module level:	eighth semester
Core/elective module:	elective
Curriculum area:	ACFP-I
UANL credit points:	10
Create date:	August 2nd, 2019
Date of last amendment made:	January 12th, 2022
Person(s) responsible for the design and amendment of the module:	Dr. E. Diana Guadalupe Robles Espino Clinical Chemist Maydé Sánchez Villarreal

2. Purpose:

To contribute to achieving the graduate's profile by developing the necessary competencies to carry out clinical laboratory processes through the validation, design, selection, and/or execution of various analysis methods. The student will interpret patient sample results under strict quality control, enabling them to make timely and relevant decisions. In relation to general competencies, the student will be able to manage specialized information and communication technologies applied to clinical laboratory automation. The student will also demonstrate human, academic and professional commitment to contribute to the patient's well-being in the clinical laboratory. They will act empathetically toward personal conflicts within the laboratory team.

In this module "Selected Topics in Clinical Laboratory" the student acquires specific competencies that allow them to obtain, handle, store and analyze samples for clinical diagnosis. They will guarantee the reliability of analytical results in the various clinical laboratory disciplines by applying the quality control guidelines established in the operation manuals.

This module integrates the competencies acquired in Clinical Pathology, which provide the foundation for biological sample collection, analysis through various methods and interpretation and validation of results. In later semesters, it provides the necessary competencies for students to perform in clinical analysis laboratories during their social service, professional practices and the General exit examination course.

3. Competences of the graduate profile

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

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:

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:

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:

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.

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:

Evaluation framework of the Learning Unit by Phases and Learning Evidence:

- Daily evidences
- Laboratory reports
- Parcial exams
- PIA

Evaluation criteria:
To combine the scores from Phase 1, Phase 2 and the Course integrative project (CIP) it is required to attend at least 80% of the laboratory practices. If this requirement is not met, the final grade will be the sum of Phase 1 and the CIP. In the case of an excused absence authorized by the Clinical Chemistry Subdirectorate, the missed practice must be made up during the designated period indicated in the schedule.

5. Course integrative project/product:
Written evaluation of case resolution in microbiology, hematology, blood bank, immunology and clinical biochemistry.

6. References:

Fernández - Espina, C. y Mazziota, D. (2005). *Gestión de la Calidad en el Laboratorio Clínico*. Argentina: Editorial Médica Panamericana.

Ferraro, M.J. (2014). *Performance Standards for antimicrobial susceptibility test; Approved Standard- Twenty-Fourth*. M100-S24. Clinical and Laboratory Standards Institute, vol. 34, núm.1, pp. 1-226. EUA. Recuperado 09 de abril de 2017 de http://www.gxccl.com/download/upload/CLSIM100-S24英文版.pdf

Forbes, B.A., Sahm, D. F. y Weissfeld, A.S. (2009). *Bailey & Scott Diagnóstico Microbiológico*. Argentina: Editorial Médica Panamericana.

Gómez, D. (2009). *Hematología: La sangre y sus enfermedades*: México: Editorial McGraw Hill.

González, A. (2019). *Principios de Bioquímica Clínica y Patología Molecular*. España: Editorial Elselvier.

Henry, J.B. (2007). *El Laboratorio en el Diagnóstico Clínico*. España: Editorial Marbán.

Hickman, P.E. (Ed). (2009). *Methods in clinical chemistry*. [CD-ROM]. EUA: Pesce Kaplan Publishers.

Koneman, E.W. (2008). *Diagnóstico Microbiológico*. México: Editorial Médica panamericana.

Martínez, J. (2012) A. *Asociación Mexicana de Medicina Transfusional 10 años*. México: AMMTAC.

Murray, P. R. (2013). *Microbiología Médica*. España: Editorial Elsevier-Masson.

Parslow, T.G., Stites, D.P., Terr, A.I. e Imboden, J.B. (2002). *Inmunología Básica y Clínica*. México: Editorial El Manual Moderno. Radillo-González, A. (2006). *Medicina Transfusional*. México: Editorial Prado.

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Rodríguez - Moyado, H. (2014) *El Banco de Sangre y la Medicina Transfusional*. México: Editorial Panamericana.
Romero – Rodríguez, T. (2010) *Manual de Técnicas y Procedimientos en Banco de Sangre*. México: Editorial Prado.
Ruiz, G.J. (2003). *Fundamentos de Hematología*. México: Editorial Médica Panamericana.
Salinas, M. C. (2017). *La Inmunología en la salud y la enfermedad*. México: Editorial Panamericana.
Strasinger, S. y Di Lorenzo, M. (2010). *Análisis de la orina y de los líquidos corporales*. Argentina: Editorial Médica panamericana.
Struthers, K. (2018). *Microbiología Clínica*: Estados Unidos: Editorial Manual Moderno

Open resources:

AMMTAC. Asociación Mexicana de Medicina Transfusional, A.C. http://www.ammtac.org
Bou, G., Chaves, F., Oliver, A. y Oteo, J. (2015). Procedimientos en Microbiología Clínica. Recomendaciones de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica. Documento 55 Métodos microbiológicos para la vigilancia del estado de portador de bacterias multirresistente. Recuperado el 27 de noviembre de 2020 de: https://www.seimc.org/contenidos/documentoscientificos/procedimientosmicrobiologia/seimc-procedimientomicrobiologia55.pdf
Camaró, M., Catalá, V., Gimeno, C., Martínez, R. y Olmos, P. (2019). Procedimientos en Microbiología Clínica. Recomendaciones de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica. Documento 48 Validación y verificación analítica de los métodos microbiológicos. Recuperado el 27 de noviembre de 2020 de: https://www.seimc.org/contenidos/documentoscientificos/procedimientosmicrobiologia/seimc-procedimientomicrobiologia48.pdf
CDC. US Centers for Diseases Control and Prevention. www.cdc.gov
EMA. Entidad mexicana de acreditación. www.ema.org.mx
Federación Mexicana de Patología Clínica, A.C. y Asociación Latinoamericana de Patología Clínica/Medicina de Laboratorio. Revista Latinoamericana de Patología Clínica y Medicina de Laboratorio. México: Medigraphic. http://new.medigraphic.com/cgibin/publicaciones.cgi?IDREVISTA=29&NOMBRE=Revista%20Mexicana%20de%20Patolog%EDa%_20Cl%EDnica
PACAL. Programa de aseguramiento de la calidad. www.pacal.org
SEIMC. Sociedad Española Enfermedades Infecciosas y Microbiología Clínica. www.seimc.org
WHO. World Health Organization. www.who.int/