



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
SCHOOL OF MEDICINE
Ba CLINICAL CHEMISTRY



SYNTHETIC PROGRAM.

1. Identification data:	
• Institution	Universidad Autónoma de Nuevo León
• College	Faculty of Medicine
• Education program	Clinical Chemistry
• Learning unit	Hematology
• Total hours of classroom, theory and practice	80
• Frequency in classroom per week	4 hours
• Total extra hours Outside classroom)	10
• Modality	Face-to-face instruction
• Academic period	Fifth semester
• Type of learning unit	Core
• Curricular area	ACFP-F
• UANL Credits	3
• Date of elaboration	August 28 th , 2017
• Date of actualization	July 29 th , 2022
• Responsible (s) for the design and	Dr. E. Diana Guadalupe Robles Espino, Clinical Chemist Maydé Sánchez Villarreal

actualization	
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2.Purpose(s):

Develop the necessary skills to perform clinical analysis in the hematology laboratory on blood samples, from the informed selection of tests, collection, preparation, conservation and analysis of samples, to the interpretation and reporting of results to collaborate in the prevention, diagnosis, control and treatment of diseases. This learning unit contributes to achieving three general competencies of the UANL; it encourages students to master their mother tongue orally and in writing through the discussion of cases where they demonstrate their ability to use the appropriate medical terms for the identified findings, and also uses appropriate visual or audiovisual resources during their oral presentations; it promotes an attitude of respect and commitment by integrating into work teams in the classroom and laboratory to solve the activities proposed by their teachers, in an environment of peaceful coexistence; He/she shows his/her leadership during the resolution of cases as a team in the classroom and in the laboratory by contributing ideas for the solution of the same, motivating his/her colleagues to meet the objectives of the activities.

He/she collaborates to achieve three specific competencies of the graduate profile, executes the obtaining, handling, storage and

analysis of blood samples to contribute to a diagnosis of different hematological diseases, handles chemical substances and hazardous waste in his/her laboratory practice following current regulations, interprets clinical analysis results from the hematology laboratory based on established criteria that allow the making of timely and pertinent decisions in the clinical diagnosis.

Hematology is taught in the fifth semester of the degree and is related to Medical physiology that provides knowledge of the function of organs and systems of the human body, with Biochemistry that provides the bases of human metabolism, and with Pathology that provides the concepts of disease.

Within the learning units of more advanced semesters, there is a relationship with the Blood bank by providing the diagnostic criteria for hematological diseases that require follow-up by Transfusion Medicine, with Clinical Pathology, General exit examination course and Professional practice, providing them with the knowledge required for the interpretation of hematological tests.

3. Competence of the graduate profile

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

Instrumental skills:

4. To master their mother tongue orally and in writing with correctness, relevance, timeliness and ethics, adapting their message to the situation or context, for the transmission of ideas and scientific findings.

Personal and social interaction skills:

9. To maintain an attitude of commitment and respect towards the diversity of social and cultural practices that reaffirm the principle of integration in the local, national and international context in order to promote environments of peaceful coexistence.

Integrative skills:

13. To assume leadership roles committed to social and professional needs in order to promote relevant social change.

- **Specific skills of the graduate profile that contributes to the learning unit**

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.
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
<ul style="list-style-type: none"> • Original video • Laboratory practices reports • Trifold brochure • Practical case studies • Knowledge tests • Oral and written presentations • Tests • Course integrative project/product
5. Course integrative project/product:
<p>Oral presentation of a Complete Blood Count (CBC) case study using PowerPoint slides. The student should include a sample being processed in the laboratory and later on, it is interpreted and correlated to a clinical diagnosis, based on solid argumentation. This presentation will be given in front of the professors that are in charge of the course. See appendix.</p>
6. Sources of support and consultation (bibliography, hemerography, electronic sources):

Abbott Laboratories. (2009). *Manual de Operaciones del Sistema Cell-dyn Rubí*. España

Henry, J.B. (2007). *El laboratorio en el diagnóstico clínico*. España: editorial Marbán.

Robles, D. y Sánchez, M. (2022). *Manual de prácticas de hematología*. México: Facultad de Medicina, UANL.

Rodak, B. F. (2014). *Hematología fundamentos y aplicaciones clínicas*. México: editorial Médica Panamericana.

Ruiz, G.J. (2003). *Fundamentos de hematología*. México: editorial Médica Panamericana.

Web resources for free use

BD. Guía práctica para la extracción de sangre. Recuperado en: <http://www.enfermeriaaps.com/portal/download/LABORATORIO-TOMA%20DE%20MUESTRAS/Guia%20practica%20para%20la%20extraccion%20sanguinea%20BD%20Diagnosics%20-%20Diagnostic%20Systems.pdf> (20/07/2020).

Fink, N. (2005). *Automatización en Hematología*. *Hematología*, Vol. 9, pp.4-16. Recuperado en: <http://www.sah.org.ar/revista/numeros/vol9.n1.4.16.pdf> (20/07/2020)

Gómez, V. [Maestro Víctor] 2018, diciembre 29. *Extendido de sangre periférica*. Recuperado en: https://www.youtube.com/watch?v=wz1Kq0C_bnl (20/07/2020).

Moraleda, J.M. (2017). *Pregrado de Hematología*. Sociedad Española de Hematología y Hemoterapia. 4ª. Edición. España. Recuperado en: <https://www.sehh.es/publicaciones/libros-sehh> (20/07/2020).

NOM-087-ECOL-SSA1-2002. *Protección ambiental - Salud ambiental - Residuos peligrosos biológico-infecciosos - Clasificación y especificaciones de manejo*. Recuperado en: <http://www.salud.gob.mx/unidades/cdi/nom/087ecolssa.html> (20/07/2020).

Ochoa, A.A. (2008). *El control de calidad en el laboratorio de coagulación*. *Revista Médica del Instituto Mexicano del Seguro Social*, 339-348. Recuperado en: <https://www.medigraphic.com/pdfs/imss/im-2008/im083p.pdf> (20/07/2020)

World Health Organization (2010). *Guidelines on drawing blood: best practices in phlebotomy*. Recuperado en: https://www.who.int/infection-prevention/tools/injections/drawing_blood_best/en/ (20/07/2020)