



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
SCHOOL OF MEDICINE
Ba CLINICAL CHEMISTRY



SYNTHETIC PROGRAM.

1. Identification data:	
• Institution	Universidad Autónoma de Nuevo León
• College	School of Medicine
• Education program	Clinical Chemistry
• Learning unit	Basic Microbiology
• 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	Second semester
• Type of learning unit	Core
• Curricular area	ACFB
• UANL Credits	3
• Date of elaboration	28/08/2017
• Date of actualization	19/01/2022
• Responsible (s) for the design and actualization	Dr. C Miguel Ángel Becerril García

2.Purpose(s):

The following module (LU) contributes to the graduate profile because it develops the necessary competences to select lab tests and provide the basis for such a choice that will let the student identify microorganisms through the analysis of the general concepts of their morphology, physiology, genetics and ecology, their impact on the environment, in human activity and their implication on the production of illnesses in the human being. All this, carried out under strict regulations of quality control that will let him make adequate and appropriate decisions to collaborate in the prevention, diagnosis, control and treatment of illnesses.

With regard to the general competences, the student will be able to apply autonomous learning strategies so that he can make adequate and appropriate decisions during sample analysis. This will also let him make a microbiological identification with accuracy and quality. Besides, he will show ethics, truth, honesty, and respect towards his classmates and professors in the classroom as well as in the laboratory.

He shows empathy when dealing with conflicts during team work in the classroom and in the laboratory, in such a way that he respects the ideas of his classmates and reaches agreements when facing different points of view during team work and in the practice laboratory.

In the LU of basic Microbiology, the student acquires competences that let him have the necessary basis for the collection and handling of samples for microbiological analysis.

Also, he handles chemical and biological materials according to national and international regulations in order to protect health and the environment.

The content of this module (learning unit) is interrelated with Cellular Biology because it describes the components and functions of cells both prokaryotes and eukaryotes; on the other hand, it provides the general aspects of the microorganisms that will be useful for their approach in depth in the modules (learning units) of Medical parasitology; Mycology and Virology; Immunology, Medical bacteriology, that contribute to the understanding of the infectious process and the behavior of microorganisms.

3. Competence of the graduate profile

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

Instrumental skills:

1. To apply autonomous learning strategies at different levels and fields of knowledge that allow them to make timely and relevant decisions in the personal, academic and professional spheres.

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

2. To execute physical, chemical and/or biological procedures in 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

- Course integrative project/product

5. Integrative learning Product:

Written report about a clinical case study assigned by the professor. In this report, he will provide an adequate methodological and conceptual strategy that will let him differentiate groups of microorganisms that are causing an illness.

6. Sources of support and consultation (bibliography, hemerography, electronic sources):

American society for microbiology: www.asm.org
 Eugene, N. W. (2007). *Microbiología humana*. CDMX: Manual Moderno.
 Revista: Enfermedades Infecciosas y Microbiología. ISSN: 0213-005X. España S. L.: Elsevier
 Ferrier, D. R. (2017). *Biochemistry*. Philadelphia: Wolters-Kulwer, Lippincott Williams-Wilkins.
 Jan Koolman, K.-H. R. (2012). *Bioquímica texto y atlas*. Madrid: Médica Panamericana.
 José Trinidad Sánchez Vega, J. T. (2017). *Fundamentos de Microbiología y Parasitología médica* (3 ed.). CDMX: Méndez editores.
 Karen C. Carroll, S. M. (2016). *Jawetz, Melnick, Adelberg Microbiología médica* (27 ed.). CDMX: McGraw Hill.
 Kenneth, R. J. (2017). *Sheris Microbiología Médica* (6 ed.). Madrid: McGraw Hill.
 Michael T. Madigan, J. M. (2009). *Brock Microbiología de los organismos*. Pearson.
 Murray, R. K. (2013). *Harper Bioquímica* (29 ed.). Madrid: McGraw Hill.
 Patrick Murray, K. R. (2015). *Microbiología médica* (8va ed.). Madrid: Elsevier.
 Revista: Enfermedades Infecciosas y Microbiología. ISSN: 0213-005X. España S. L.: Elsevier
 Richard Harvey, P. C. (2008). *Microbiología* (2 ed.). Philadelphia: Lippincott's Illustrated Reviews Series.
 Secretaría de Salud y Asistencia (SSA): <https://www.gob.mx/salud>
Secretaría de salud: www.uv.es/cect
US- Centers for Disease Control and prevention (CDC): www.cdc.gov
 Walker, S. T. (2000). *Microbiología* (2 ed.). Madrid: McGraw Hill.
 Willey. (2009). *Prescott, Harley y Klein Microbiología* (7 ed.). Madrid: McGraw Hill.
World Health Organization/ OMS: www.who.int