

MODULE DESCRIPTION (SUMMARY PROGRAM)

1. Module Information Code:	
• Name of the Institution and School	Universidad Autónoma de Nuevo León, School of Medicine
• Name of the learning Unit	Microbiology
• Total classroom hours for theory and/or practice.	117 hrs.
• Total extra classroom hours	123 hrs.
• Course Modality	Schooled
• Type of academic period in which the module is offered	4° Semester
• Type of Learning Unit in the Curriculum	Compulsory
• Curriculum Area	ACFB. Curriculum Area of Basic Training
• UANL credit points	8
• Date of module creation:	29/09/14
• Date of last amendment:	27/07/20
• Person(s) responsible for the module design and amendments:	Dr. C. Gloria Ma. González González Dr. C. Mariana Elizondo Zertuche

2. Purpose(s)

The Microbiology learning unit covers an enormous heterogeneity of structural types, functional and taxonomic: from non cell particles such as viruses, up to organisms so distinct as bacterias, the protozoan helminths and fungi, capable of producing disease and to induce the immune reaction of the host. For all that, The Microbiology constitutes one of the fundamental bases of the Medical Surgeon and Obstetrician. This allows to achieve the profile of graduation in the correspondent dominium of the medial scientific base, because in developing the necessary competencies to make a etiological diagnosis through the analysis of the pathogenicity factors of the infectious agents, its relation with the clinical picture, its epidemiology and the interpretation of the microbiological studies, justifying the treatment and prevention measures. By means of the implementation of a methodology that privileges the self-directed learning, Seeking the collaboration and eminently centered in the problem solution; develops in the student the corresponding competences of the dominions: critical thinking and investigation; professional standards and ethics; organizational work; personal and professional and communication.

The learning unit is intertwined with the Microscopic Anatomy, Human Embryology and Biochemistry; contributes in a holistic manner, to the comprehension of the infectious process and microorganism behaviour. It also relates with the Physiology, Molecular Biology, Genetics and Immunology that molecular level metabolic knowledge contributes, until reaching the knowledge of the defense mechanisms of the human host. It relates as well with Public Health, Pharmacobiology, Toxicology, General Surgery, Pathology, Clinical Pathology, Environment and Sustainability, Legal Medicine, Imaging, Surgical learning units that along with Microbiology amalgamate with epidemiology, the treatment of inpatient illnesses, the histopathology diagnosis and asepsis.

3. Competences of the graduate profile

- a. General Competences that this learning unit contributes to

Instrumental Competences

- 1.- To apply self-directed learning strategies in the different level and fields of knowledge that allow the appropriate decision taking in the personal, academic and professional areas
- 3.- To handle the communication and Information technologies as an information access tool and transform it into knowledge, as well as the collaborative working and learning with avant-garde techniques that allow the constructive participation in society.
- 4.- Written and oral domain of the native language with correctness, relevance, opportunity and ethics adapting the message to the context or situation, for the conveying of ideas and scientific findings.
- 5.- The usage of logical , critical, creative proactive thinking to analyze natural and social phenomena that allow social responsible relevant decisions in the sphere of influence.
- 6.- The usage of a second language preferably English, with clarity and correctness to communicate in daily, academic, professional and scientific context.

Personal Competences and Social Interaction

- 9.- To maintain a respectful commitment attitude towards the diversity of social and cultural practices that reassure the integration principle in a local national and international context with the aim to promote a peaceful coexistence environment.
- 11.- To practice the standards promoted by the UANL; truthfulness, equity, honesty, liberty, solidarity, respect for life and others, respect to nature, integrity, professional ethics, justice and responsibility, at its personal and professional level to contribute in the building of sustainable society.

Integrative Competences

- 15.- To achieve the adaptability required by the uncertain social and professional environment of our time in order to create better life conditions.

Specific Graduation profile Competences that the learning unit contributes to

1.- To apply the scientific foundations of medicine considering the economical, psychological, social, cultural and environmental factors that contribute to the development and evolution of a disease for decision making and medical actions.

2 To Solve Clinical problems through deductive reasoning, the interpretation of findings and the definition of its nature in order to make decisions and determine the action principles of the medical practice to be followed in a responsible manner.

3.- To Evaluate the development and evolution of the illness through the related biomedic information analysis and physical, social and cultural factors.

7.- To apply the scientific method in medical problem solving with an innovative analytical and self-criticism attitude in the prevention, diagnosis and treatment of diseases.

8.- To incorporate the professional and ethical standards to the medical practice, without distinction of gender.race. sexual and political preferences, religious beliefs, activities performed, different capabilities or socioeconomic status, promoting the social inclusion and contributing to the populations wellbeing, the life quality, and human development.

5. Course Integrative Product.

Presentation of the seminar and resolution of a clinical case as evidence of student learning about etiology, pathogenicity, epidemiology, prevention and diagnosis of infectious illnesses.

4. Summative evaluation:

Comparison chart

Laboratory practice

Theoretical-practical examination

Course Integrative Product.

examination

6. References:

- Murray, P., Rosenthal, K. & Pfaller, M. (2016). *Microbiología Médica*. España: Elsevier.
- Hernández-Bello R. Compendio de Parasitología Médica. Departamento de Microbiología, 2016.
- González-González G. Compendio de Micología Médica. Departamento de Microbiología, 2016.

Complementary references:

- Baron, S. (1996). *Medical Microbiology*. Galveston, TX: University of Texas Medical Branch at Galveston. Recuperado el 20 de mayo de 2015 de <http://www.ncbi.nlm.nih.gov/books/NBK7627/>.

- Becerril, M. A. (2011). *Parasitología médica*. México, D.F.: McGraw-Hill/ Interamericana.
- Tay, J., Velazco, O., Lara, R. & Gutiérrez, M. (2003). *Parasitología Médica*. México: Méndez Editores.
- Bonifaz, A. (2000). *Micología médica básica*. México, D. F.: Méndez Editores.
- Brooks, G., Butel, J. & Morse, S. (2011). *Microbiología médica*. México, D.F.: McGraw-Hill/ Interamericana.
- Collier L. & Oxford, J. (2008). *Virología humana*. Seúl, Corea: McGraw-Hill/ Interamericana.
- Ryan, K. & Ray, C.G. (2011). *Sherris Microbiología Médica*. México: McGraw-Hill Educación.
- Willey. J. (2008). *Microbiología de Prescott, Harley y Klein*. España: McGraw-Hill/ Interamericana.
- Bennett J., Dolin R., Blaser M. (2017). *Compendio de Enfermedades infecciosas*. Barcelona, España.: Elsevier.

Electronic resources:

- www.microbiologia-medicinauanl.com.mx/
- [www.facebook.com/Departamento-de-Microbiología](https://www.facebook.com/Departamento-de-Microbiologia)
- US - Centers for Diseases Control and Prevention (CDC): <http://www.cdc.gov>
- World Health Organization - WHO/OMS: <http://www.who.int>
- American Society for Microbiology: <http://www.asm.org>
- Organización Panamericana de la Salud: <http://www.paho.org>
- Secretaría de Salud: <http://www.ssa.gob>
- Dirección General Adjunta de Epidemiología: <http://www.dgepi.salud.gob.mx>

