UANL
UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN

FACULTAD DE MEDICINA

MODULE DESCRIPTION (ANALYTICAL 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. Introduction

The Unit of Microbiology learning is integrated by 5 phases, Phase 1 includes the microbiology basic concepts revision through the familiarity with the microbial diversity with the purpose to relate its role in health-sickness ; In phase 2 that includes Bacteriology the factors of virulence pathogenicity of bacteria, relating it with the clinical picture,epidemiology and laboratory testing epidemiología in order to establish the differential diagnosis of each one of the pathologies that these microorganisms produce. Subsequently, on phase 3 of Virology the factors of pathogenicity of the virus related with the clinical picture are analyzed, epidemiology and laboratory testing,with the purpose to establish the differential diagnosis of the each one of the pathology that these infectious agents produce. On phase 4 the program that includes Mycology, the virulence and pathology of the filamentous and yeast fungus factors are analyzed relating them with clinical picture, epidemiology and laboratory testing with the purpose to

establish the differential diagnosis of each one of the pathologies produced by this microorganisms. Phase 4 denominated Parasitology, analyzes the virulence and pathogenesis of the protozoan and helminths, relating them with the clinical picture, epidemiology and laboratory testing, in order to establish the differential diagnostic of each one of the pathology that these microorganisms produce. Finally, the learning process culminates with the achievement of the CIP (Course Integrative Product) , the Seminar Presentation and a Clinical Case resolution.

3. 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.

4. 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.

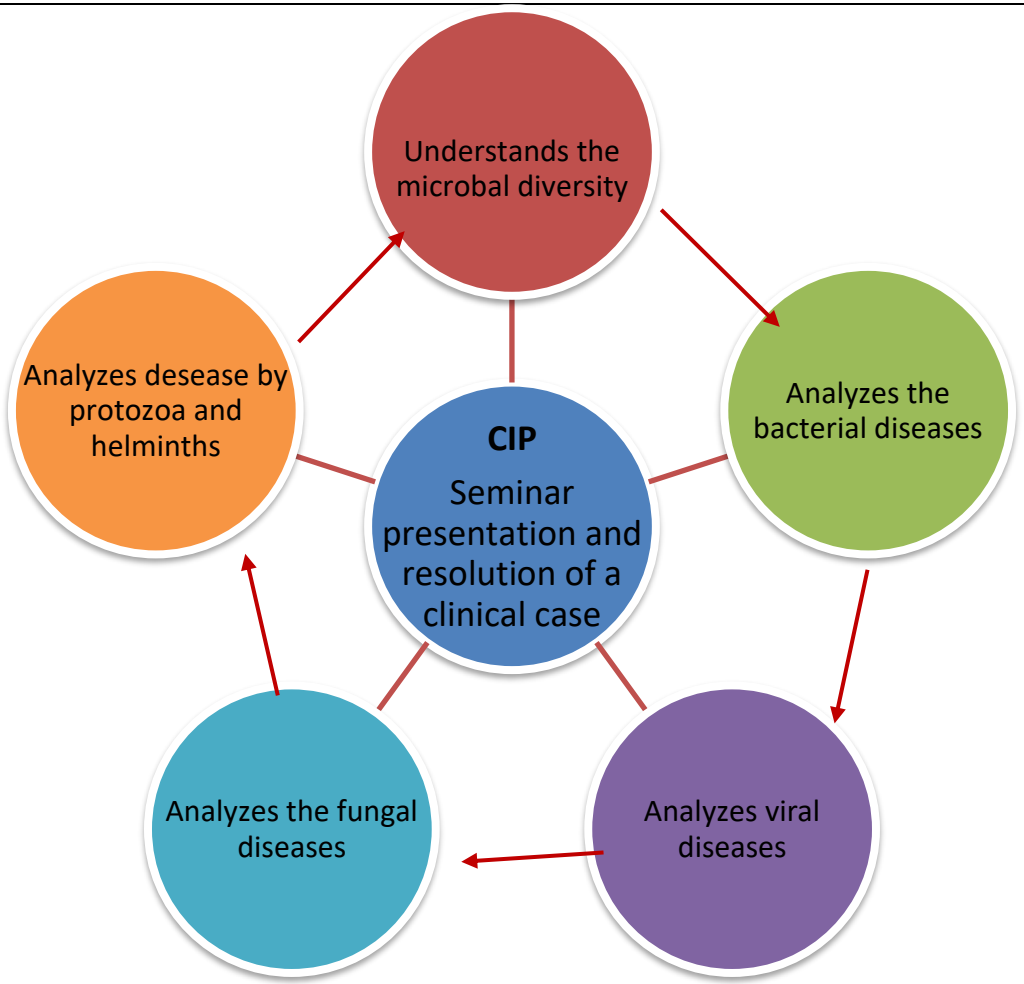
2 To Solve Clinical problems through deductive reasoning, the interpretation of findings and the definition of its nature in order to make decisions and determine the action principles of the medical practice to be followed in a responsible manner.

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 roadmap:



6.- Structuring into stages or phases.

Phase 1: Basic Concepts of Microbiology

Component(s) of the competence:
Understand the basic concepts of microbiology through the familiarity with the microbial diversity with the purpose to associate its role in health-disease.

Evidence of student learning	Performance Criteria	Learning activities	Contents	Resources
Comparison chart of the microbial diversity.	- Identifies correctly the microbiological terminology. - Recognizes and interprets the microbial structures in images and through the microscope. - Correctly synthesizes the microbial structures of the infectious agents. - Associates the role of the microbial structure with the pathogenesis development of the disease. - Applies correctly the acquired knowledge. **Formative Criteria**	- Identifies correctly the microbiological terminology - Recognizes and interprets the microbial structures in images and through the microscope. - Correctly synthesizes the microbial structures of the infectious agents. - Associates the role of the microbial structure with the pathogenesis development of the disease. - Applies correctly the acquired knowledge. -	**Conceptual Content** - Definition of Clinical Microbiology - Importance of microbiology in relation to the main causes of morbidity and mortality. Relationship of microbiology with other subjects of the curriculum and with clinical practice. - Microbial diversity. Viruses, prions and bacteria Taxonomy and nomenclature. - Microbial diversity. Fungus, protozoa and Helminths - Survival of the microorganisms in the natural environment Growth, exponential proliferation, growth curve (proliferation curve)	- Class room - Laboratory - Computer - Proyector - blackboard - Projection Screen - Microscope - Diverse Materials

	- Completes de comparative chart of the microbial diversity placing (+/-) presence/absence of the structure corresponding to each one of the microorganisms or infectious agent. - Presents this activity in the last session of introduction topics to be answered in a 5 min time frame.		- Antimicrobials: Antiseptics, disinfectants and antibiotics. - Needs for growth and sources of metabolic energy. Nutrition and environmental factors affecting growth. Cultivation methods. - Microbial genetics. Organization of genes. Genome of prokaryotic and eukaryotic cells Replication. DNA transfer: conjugation, transduction and transformation **Attitudinal Content** - Punctual assistance. - Comply with the proper clothing. - Responsible handling of the laboratory equipment. - Good hygiene practices. - Attentively laboring following directions. - Proper use of language.	- Department Page - Social networks - Textbooks - Consultative books

Phase 2: Bacteriology

Component(s) of the competence:
Analyze the pathogenesis and virulence of bacterias associating it with clinical picture, with the epidemiology and laboratory test in order to establish a differential diagnosis of each one of the pathologies produced by these organisms.

Learning Evidence	Performance Criteria	Learning Concepts	Contents	Resources
-Laboratory practices over bacterial diseases	Identify correctly each one of the bacteria based on their morphological and physiological characteristics. Associates the bacterial virulence factors with the clinical picture. Links the epidemiological data with the clinical picture. Identifies the biological laboratory sample and its interpretation in order to establish an accurate diagnosis. 5. Identifies the prevention and control measures on each one of the bacterial diseases. 6. Correctly applies the acquired knowledge	- Class exposition by professors and/or students. - Clinical cases discussions by professors and/or students. - Content Analysis through digital images. - Prior verification reading. - Analysis and Interpretation of the different testing used for the diagnosis of bacterial disease - Executes an internship report about bacterial disease.	**Conceptual Content** - Structure of prokaryotic microorganisms. - Pathogenesis of bacterial infections Identification of bacteria that cause disease. Bacterial virulence factors. Normal microbiota of the human body. - *Staphylococcus aureus*: impetigo, carbuncle, stye, pneumonia, meningitis, septicemia, toxic shock and food poisoning, etc. - *Streptococcus pyogenes*: Erysipelas, scarlet fever, pharyngitis, rheumatic fever, glomerulonephritis, etc. - *Streptococcus pneumoniae*: pneumonia, otitis, sinusitis and meningitis - *Enterococcus faecalis:* bacteremia, abscesses, urinary tract infection, etc.	- Classroom - Laboratory - Computer - Proyector - blackboard - Projection Screen - Microscope - Diverse Materials - Department Page

	7. Timely and orderly delivery.		- *Neisseria gonorrhoeae*: gonorrhea, pelvic inflammatory disease and ophthalmia neonatorum - *Neisseria meningitidis*: meningitis and meningococcemia - - Generalities of enteric Gram negative Bacillus: *Escherichia coli.* - *Klebsiella pneumoniae*, *Proteus* spp., *Enterobacter* spp.: opportunistic infections. - *Shigella* spp*:* bacillary dysentery. - *Salmonella enterica:* typhoid fever and gastroenteritis - *Vibrio cholerae:* cholera. - *Campylobacter jejuni*: gastroenteritis. - *Helicobacter pylori*: gastritis and duodenal cancer. - *Brucella* spp: brucellosis or malt fever. - *Haemophilus influenzae*: meningitis, CRUP, pneumonia, etc.	- Social networks - Textbooks - Consultative books

			- *Haemophilus ducreyi*: soft chancre. - *Corynebacterium diphtheriae*: diphtheria. - *Bordetellapertussis*: whooping cough. - *Pseudomonas aeruginosa* and *Acinetobacter baumannii*: Intrahospital infections.. - *Legionella pneumophila: legionelosis and Pontiac disease.* - *Bacillus anthracis:* anthrax. - *Bacillus cereus*: food intoxication. - *Clostridium tetani*: tetanus. - *Clostridium botulinum*: botulism. - *Clostridium perfringens*: enteritis, myonecrosis, etc. - *Clostridium difficile:* pseudomembranous colitis. - *Bacteroides fragilis, Prevotella melaninogenicus, Fusobacterium necrophorum*: bronchopulmonary, intra-	

2.- First written theoretical examination.			abdominal and pelvic infections - *Actinomyces israelii:* actinomycosis. - *Nocardia brasiliensis:* mycetoma. - *Nocardia asteroides:* bronchopulmonary disease. - *Mycobacterium tuberculosis, Mycobacterium bovis,Mycobacterium aviumintracellulare:* tuberculosis. - *Mycobacterium leprae*: leprosy. - *Treponema pallidum*: syphilis. - *Borrelia recurrentis*: recurrent fever. - *Borrelia burgdorferi:* Lyme disease. - *Leptospira interrogans*: Weil disease. - *Mycoplasma pneumoniae:* primary atypical pneumonia. - *Mycoplasma hominis:* pyelonephritis and pelvic inflammatory disease	

			- *Ureaplasma urealyticum:* urethritis - *Chlamydia trachomatis*: trachoma, non-gonococcal urethritis, lymphogranuloma venereum - *Rickettsia prowazeckii*: epidemic typhoid and Brill disease - *Rickettsia typhi*: endemic typhoid (murine). - *Rickettsia rickettsii*: Rocky Mountain Spotted Fever **Procedural Content** - Clinical case analysis. - Result interpretation of the different laboratory testing in order to sustain the bacterial infections diagnosis. **Attitudinal Content** - Punctual assistance. - Appropriate clothing - Attentively laboring following directions. - Proper use of language.	

Fase 3: Virology

Component(s) of the competence:
Analyze the pathogenicity factors of viruses linking it to the clinical picture, epidemiology y pruebas and laboratory testing in order to establish a differential diagnosis on each one of the pathologies that infectious agents produce.

Evidence of Student Learning	Performance Criteria	Learning activities	Contents	Resources
Laboratory practices about viral diseases.	1. . Correctly identifies each one of the infectious agents based on their cellular tropism. 2. Relates the viral pathogenicity with the clinical picture. 3. Links the epidemiology data with the clinical picture. 4. Identifies the biological laboratory sample and its interpretation in order to establish an accurate diagnosis. 5. Identifies the prevention and control measures on each one of the viral diseases. 6. Correctly applies the acquired knowledge	- Class exposition by professors and/or students. - Clinical cases discussions by professors and/or students. - Content Analysis through digital images. - Prior verification reading. - Analysis and Interpretation of the different testing used for the diagnosis of viral diseases. - Executes an internship report about viral diseases.	**Conceptual Content** - General properties of viruses. Qualification, structure, and composition of viruses Reaction to physical and chemical agents. Replication of viruses Pathogenesis and control of viral diseases - Rhinovirus. - ECHO virus. Coxsackie virus. - Poliomyelitis virus Rabies virus. - Ebola virus. - Influenza virus. - Avian Influenza virus. - Parainfluenza Virus: CRUP. - Respiratory Syncytial Virus: bronchiolitis. - Mumps Virus: mumps. - Measles Virus.	- Classroom - Laboratory - Computer - Proyector - blackboard - Projection Screen - Microscope - Diverse Materials - Department Page

	7. Timely and orderly delivery.		- Rubella Virus. - Parvovirus: fifth disease. - Rotavirus: gastroenteritis. - Norwalk agent: gastroenteritis. - Adenovirus: gastroenteritis, conjunctivitis, respiratory tract infection. - Hepatitis A virus. - Hepatitis E virus. - Hepatitis B virus. - Hepatitis D virus. - Hepatitis C Virus - Herpesvirus type 1: herpes labialis. - Herpesvirus type 2: genital herpes. - Herpesvirus type 3: varicella zoster. - Herpesvirus 6: roseola. - Herpesvirus type 4 (Epstein-Barr virus): infectious mononucleosis.	- Social networks - Textbooks - Consultative books

2.- Second written theoretical examination.			- Herpesvirus type 5 (Cytomegalovirus): cytomegalic disease. - Dengue virus. - Chikungunya Virus. - Yellow fever virus. - Encephalitis Virus: Eastern equine encephalitis, Western equine encephalitis, Venezuelan equine encephalitis, St. Louis encephalitis, West Nile fever. - Papillomavirus: warts, condyloma and cancer. - Retrovirus: HIV: acquired immunodeficiency syndrome (AIDS). **Procedural Content:** - Clinical case analysis. - Result interpretation of the different laboratory testing in order to sustain the viral infections diagnosis. **Attitudinal Content** - Punctual assistance. - Appropriate clothing - Attentively laboring following directions. - Proper use of langua	

Phase 4: Mycology

Component(s) of the competence:
Analyze the virulence and pathogenesis of the yeast and filamentous fungus relating it with the clinical picture, with the epidemiology and laboratory testing in order to establish a differential diagnosis of each one of the pathologies produced by these organisms.

Evidence of Student Learning	Performance Criteria	Learning activities	Contents	Resources
Laboratory practices of fungal disease.	1. Correctly identifies each one of the yeast and filamentous fungus based on their morphological and physiological characteristics. 2. Associates the fungi virulence factors with de clinical pictures. 3. Links the epidemiology data with the clinical picture. 4. Identifies the biological laboratory sample and its interpretation in order to establish an accurate diagnosis. 5. Identifies the prevention and control measures on each one of the fungal diseases.	- Class exposition by professors and/or students. - Clinical cases discussions by professors and/or students. - Content Analysis through digital images. - Prior verification reading. - Analysis and Interpretation of the different testing used for the diagnosis of fungal diseases. - Executes an internship report about fungal diseases.	**Conceptual Content** General properties and classification of mushrooms Proliferation and isolation of fungi. Methods of study of fungi. - *Trichophyton* spp., *Microsporum* spp., ans *Epidermophyton* spp.: tiñas. - *Malassezia* spp.: pityriasis versicolor. - *Trichosporon* spp: white stone and tricosporonosis. - *Sporothrix schenckii*: Sporotrichosis - *Madurella* spp: Pneumiotic mycetoma - *Fonsecaea pedrosoi, Phialophora verrucosa, Cladophialophora carrionii, Wangiella dermatitidis*: chromoblastomycosis - *Coccidioidesimmitis* and *Coccidioides posadasii*: coccidioidomycosis.	- Classroom - Laboratory - Computer - Proyector - blackboard - Projection Screen - Microscope - Diverse Materials - Department Page

	6. Correctly applies the acquired knowledge		- *Histoplasma capsulatum*: histoplasmosis. - *Paracoccidioides brasiliensis*: paracoccidioidomycosis. - *Blastomyces dermatitidis*: blastomycosis. - *Candida albicans* and non-albicans (*C. parapsilosis, C. krusei, C. tropicalis* y *C. glabrata*): candidosis. - *Cryptococcus neoformans*: cryptococcosis. - *Aspergillus fumigatus*: Aspergillosis. - *Fusarium* spp.: keratitis, systemic disease, etc. - *Pneumocistis jiroveci*: pneumocystosis. - *Rhizopus, Lichtheimia, Mucor*: zygomycosis. **Procedural Content** - Clinical case analysis. - Result interpretation of the different laboratory testing in order to sustain the fungal infections diagnosis. -	- Social networks - Textbooks - Consultative books

			Contenido Actitudinal - Punctual assistance. - Appropriate clothing - Attentively laboring following directions. - Proper use of language..	
Phase 5: Parasitology **Component(s) of the competence:** Analyze the virulence and pathogenesis of the protozoan and helminthic relating it with the clinical picture, with the epidemiology and laboratory testing in order to establish a differential diagnosis of each one of the pathologies produced by these organisms.				
Evidence of Student Learning	**Performance Criteria**	**Learning activities**	**Contents**	**Resources**
Laboratory practices of protozoan and helminthic diseases.	1. Correctly identifies each one of the protozoan and helminthic based on their morphological and physiological characteristics. 2. Associates the protozoa and helminthic virulence factors with the clinical pictures. 3. Links the epidemiology data	- Class exposition. - Seminar Exposition. - Clinical cases discussion. - Content Analysis through digital images. - Prior verification reading. - Analysis and Interpretation of the different testing used for the diagnosis of protozoa and helminth diseases.	**Conceptual Content.** - Classification of protozoa and helminths. Methods of study of parasites. - *Entamoeba histolytica*: intestinal and extra-intestinal amoebiasis - *Naegleria fowleri*: primary memingoencephalitisamibiana	- Class room - Laboratory - Computer - Proyector - blackboard - Projection Screen - Microscope

2.- Third written theoretical examination.	with the clinical picture. 4. Identifies the biological laboratory sample and its interpretation in order to establish an accurate diagnosis. 5. Identifies the prevention and control measures on each one of the parasitic diseases. 6. Correctly applies the acquired knowledge.	- Executes an internship report about protozoa and helminth diseases. -	- *Acanthamoeba gruberi*: amebic granulomatous encephalitis. - *Giardia lamblia*: giardiasis. - *Trichomonas vaginalis*: trichomoniasis. - *Toxoplasma gondii*: toxoplasmosis. - *Plasmodium vivax, P. malariae, P. ovale, P. falciparum*: malaria - *Trypanosoma cruzi*: Chagas disease - *Cryptosporidium parvum*: cryptosporidiosis.	- Diverse Materials - Department Page - Social networks - Textbooks - Consultative books

3.- Final examination.			- *Leishmania mexicana*: chicleros ulcer, cutaneous leishmanoid. - *Enterobius vermicularis*: oxiuriasis - *Trichuris trichiura*: trichocephalosis. - *Ascaris lumbricoides*: ascariasis. - *Trichinella spiralis*: trichinosis. - *Necator americanus*: necatoriasis. - *Strongyloides stercoralis*: strongyloidosis - *Onchocerca volvulus*: onchocerciasis	

			- *Taenia saginata*: taeniasis - *Taenia solium*: taeniasis and cysticercosis. - *Hymenolepis nana*: himenolepiasis. **Procedural Content** - Clinical case analysis. - Result interpretation of the different laboratory testing in order to sustain the protozoa and helminths infections diagnosis. **Attitudinal Content** - Punctual assistance. - Appropriate clothing - Attentively laboring following directions. - Proper use of language	

7. 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.

8. Summative evaluation:

Comparison chart of the microbial diversity ……1%

Laboratory practice: Basic techniques in microbiology……..4%

First theoretical-practical examination ……..20%

Laboratory practice: Bacterial and viral diseases ……4%

Laboratory practice: Bacteria morphophysiology ……...4%

Second theoretical-practical examination……20%

Laboratory practice: Fungal and parasitic diseases …….....4%

Third theoretical-practical examination……20%

Final examination……20%

CIP: Seminar presentation and resolution of a clinical case..……3%

TOTAL: ……..100%

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
- 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

APPENDIX.

ASSESSMENT AND WORKLOAD

Module workload		Number of hours	Percentage
Contact hours	Class-based instruction	80h (68.38%)	48.75%= 117 hours
	Laboratory practice	32h (27.35%)	
	Exam taking	5h (4.27%)	
Independent study	Study	88h (71.54%)	51.25%= 123 hours
	Exam preparation	30h (24.39%)	
	Comparison chart	1h (.81%)	
	Course integrative product (CIP)	4h (3.25%)	
Total hours of the workload: 30 hours X 8 credits UANL/ECTS*		240 h	

*European Credit Transfer and Accumulation System
1 UANL credit = 30 hours

NOTE: Rubrics, checklists and evaluation formats are elaborated by using the performance criteria described in each stage of the module.

SUPLEMENTO COVID-19

Siguiendo las recomendaciones de la Secretaría de Salud del país y la Rectoría de la Universidad, ante la coyuntura de salud COVID-19, la organización de la docencia desde marzo del 2020, seguirá un modelo híbrido, donde la docencia se ajustará a los horarios aprobados por la Secretaría de Salud siguiendo un modelo de Presencialidad / No presencialidad en la medida en que las circunstancias sanitarias y la normativa lo permitan. Los estudiantes asistirán a las clases de manera no presencial mediante la transmisión de las mismas de manera síncrona/asíncrona vía “on line”.